

Wet Tantalum
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IMPORTANT NOTICE

KEMET Electronics Corporation disclaims all warranties, whether express, implied, or statutory as to any manner whatsoever, including the condition of the equipment, its compatibility with specific requirements, its merchantability, or fitness for any particular purpose which extend beyond the description on the face thereof.

Furthermore, under no circumstances shall KEMET Electronics Corporation be liable for consequential, special, incidental or indirect damages resulting from the use or handling of this product.

Finally, KEMET Electronics Corporation does not assume any responsibility for the correctness of the information contained in this catalog. All design characteristics, specifications, tolerances, and the like are subject to change without notice.

Introduction

KEMET wet tantalum capacitors are identified by the initial “T”, followed by a “Series” number. T19X designates commercial product; T29X is military grade in accordance with Military Specification, MIL-PRF-39006. For detailed performance characteristics of the T29X series, please refer to the latest issue of the Military Specification. MIL-PRF-39006 establishes 1000 hour failure rate levels of 1%, 0.1%, and 0.01%. T29X series components are available in M, P, and R failure rates (1.0, 0.1, and 0.01, respectively).

Specific requirements are set forth in the respective Product Series in this catalog. All Military products are 100% electrically screened for the parameters shown in the respective product section. For non-military product, all series are 100% screened for leakage, capacitance and dissipation factor. All Series are inspected to electrical limits using a minimum .1% AQL sampling plans, according to the Military Standard MIL-STD-105, even after 100% testing. This sampling plan, to the best of KEMET Electronics’ knowledge, meets or exceeds the generally accepted industry standard for similar products. KEMET capacitors may also be supplied, with prior agreement, to meet specifications with requirements differing from those of KEMET catalogs.

These Notes apply generally to all KEMET wet tantalum capacitors and illustrate typical performance under normal application conditions, except where noted. The intent of these Notes is to provide generalized information concerning performance characteristics.

1. General Application Class

Wet tantalum capacitors are usually applied in circuits where the AC component is small compared to the DC component. Typical uses known to KEMET Electronics include blocking, by-passing, decoupling, and filtering. They are also used in timing circuits. If two of these polar capacitors are connected “back-to-back” (i.e., negative-to-negative or positive-to-positive), the pair may be used in AC applications (as a non-polar device).

2. Storage Conditions

Capacitors may be stored without applied voltage over the operating temperature range specified in the catalogs for each Series. The range is from -55 to +125°C for all Series.

Storage at high temperature may cause a small, temporary increase in leakage current (measured under standard conditions), but the original value is usually restored within a few minutes after application of rated voltage.

DC leakage current may rise upon exposure to a combination of high temperature and high humidity, but is normally restored by voltage conditioning under standard conditions. The increase will be greater than that experienced under temperature influence alone because of conduction through absorbed water.

This Series may be affected by absorption of water on external insulating surfaces. The water film may also attract a layer of dust from the air increasing the effect. The most sensitive parameter is leakage current.

3. Polarity

These capacitors are inherently polar devices and may be permanently damaged or destroyed if connected with the wrong polarity. The positive terminal is identified on the capacitor body by a polarity mark and the capacitor body may include an obvious geometrical shape. See paragraph 11 for Reverse Voltage capabilities.

4. Operating Environment

Most of the discussion under “Storage Conditions” will apply also when capacitors are operated within the applicable electrical ratings described below. The temporary increase in leakage current (at standard conditions) following elevated-temperature exposure is not observed, however, if the capacitors are operated with adequate DC voltage applied.

5. Capacitance

Capacitance is measured at 120 Hz and 25°C with up to 1 volt rms applied. Measured circuits are of high impedance, however, and under these conditions 1 volt rms may be applied even to 6 volt capacitors (23% peak reversal) without a DC bias. DC bias is thus normally not used, except when rated voltage is below 6 volts and the AC signal level exceeds 0.3 vrms. However, MIL-PRF-39006 provides for up to 2.2 volts DC. DC bias is not commonly used at room temperature, but is more commonly used at elevated temperatures.

DC bias causes a small reduction in capacitance, up to about 2% when full rated voltage is applied as bias. DF is also reduced by the presence of DC.

Capacitance changes very little below 1 kHz but decreases more noticeably at higher frequencies. Larger capacitance values decline more rapidly than small ratings.

Capacitance typically changes with temperature according to the curve of Figure 1.

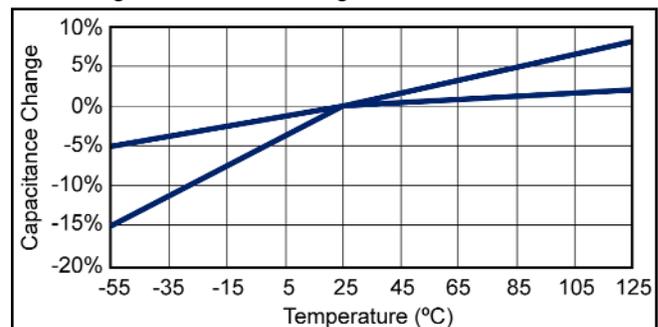


Figure 1. Typical Effect of Temperature upon Capacitance

6. Dissipation Factor (DF)

DF is measured at 120 Hz and 25°C with up to 1 volt rms applied. Note that, in either operation, peak AC plus DC bias must not exceed either rated voltage. Measurement circuits are of high impedance, however, and under these conditions 1 volt rms may be applied even to 6 volt capacitors (23% peak reversal) without a DC bias. DC bias is thus normally not used, except when rated voltage is below 6 volts and the AC signal level exceeds 0.3 vrms. However, MIL-PRF-39006 provides for up to 2.2 volts DC. DC bias is not commonly used at room temperature, but is more commonly used at elevated temperatures.

Dissipation Factor (DF) is a useful low-frequency measure of the resistive component in capacitors. It is the ration of the unavoidable resistance to the capacitive reactance, usually expressed in percent. DF increases with temperature above +25°C and may also increase at lower temperatures. Unfortunately, one general limit for DF cannot be specified for all capacitance/voltage combinations, nor can response to temperature be simply stated. Catalogs for the respective series list DF limits under various conditions.

Dissipation factor increases with increasing frequency as would be expected from the decreasing capacitive reactance. DF is not a very useful parameter above about 1 kHz. The DF of larger capacitance values increases more rapidly than that of smaller ratings.

DC bias causes a small reduction in capacitance, up to about 2% when full rated voltage is applied, as bias, DF is also reduced by the presence of DC bias. Rated voltage may cause a decrease in DF of about 0.2% (e.g., a decrease from 3.6 to 3.4% DF).

DF is defined as $\frac{ESR}{X_C}$ and is also referred to occasionally, as $\tan d$ or “loss tangent.” The Quality Factor, Q, is the reciprocal of DF (DF is not expressed in percent in this calculation). Another expression, rarely used is the “power factor,” or $\frac{ESR}{Z}$. Power factor is $\cos \phi$, while DF is $\cot \phi$.

7. DC Leakage (DCL)

DC leakage is affected by voltage to a much larger extent, and this effect can frequently be used to advantage in circuits where only very low leakage currents can be tolerated.

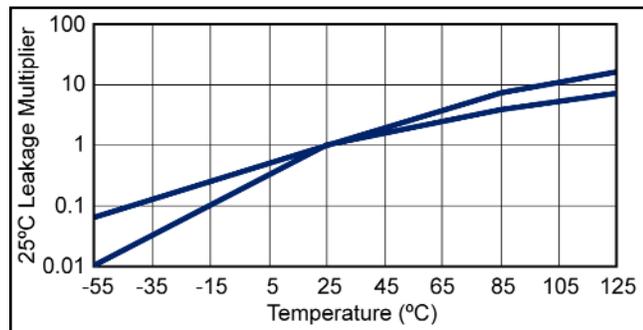


Figure 2. Typical Effect of Temperature upon DC Leakage Current

DC leakage current (DCL) increases with increasing temperature according to the typical curve of Figure 2.

Leakage current is measured at a rated voltage through +85°C and may also be measured at +125°C with 2/3 of rated voltage applied.

8. Rated Voltage

This term refers to the maximum continuous DC working voltage permissible at temperatures of +85°C or below. The lower operating temperature is specified as -55°C. Operation above +85°C is permissible, with reduced working voltage. The typical working voltage reduction is to 2/3 of rated voltage at +125°C.

9. Working Voltage

This is the maximum recommended peak DC operating voltage for continuous duty at or below 85°C without DC voltage surges or AC ripple superimposed. No voltage derating is required below 85°C. Capacitors may be operated to 125°C with working voltage linearly derated to 2/3 of the 85°C rating at 125°C.

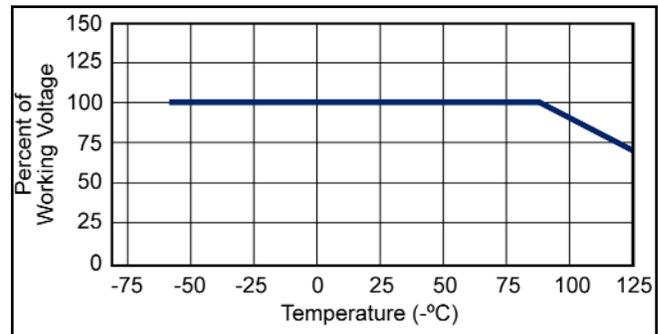


Figure 3. Working Voltage Change with Temperature

10. Surge Voltage

Surge Voltage is defined as the maximum voltage to which the capacitor should be subjected under transient conditions, including peak AC ripple and all DC transients.

Table 1. Surge Voltage Ratings

| DC Working Voltage @ 85°C | 6 | 8 | 10 | 15 | 25 | 30 | 50 | 60 | 75 | 100 | 125 |
|---------------------------|-----|-----|------|------|------|------|------|----|------|-----|-----|
| Surge Voltage | 6.9 | 9.2 | 11.5 | 17.2 | 28.8 | 34.5 | 57.5 | 69 | 86.2 | 115 | 144 |

A typical surge voltage test is performed at +85°C with the applicable surge voltage per Table 1. The surge voltage is applied for 1000 cycles of 30 seconds on voltage through a 1000 ± 100 ohm series resistor and 30 seconds off voltage with the capacitor discharged through a 1,000 ohm resistor. Upon completing the test, the capacitors are allowed to stabilize at room temperature. Capacitance, DF, and DCL are then tested:

1. The DCL should not exceed the initial 25°C limit.
2. The capacitance should be within ±2% of initial value.
3. The DF should not exceed the initial 25°C limit.

- 4. Capacitors show no visible mechanical damage or leakage of electrolyte.

11. Reverse Voltage

When subjected to a DC potential of 3 volts, applied in the reverse polarity direction for 125 hours ± 10 hours, capacitors shall meet the following requirements.

- DC Leakage: shall not exceed 1.25 times initial limit
- Capacitance: shall be within stated tolerance (K- ±10%, M- ±20%, J- ±5%)
- Dissipation Factor: shall not exceed initial limit

12. Equivalent Series Resistance (ESR)

Equivalent Series Resistance (ESR) is the preferred high-frequency statement of the resistance unavoidably appearing in these capacitors. ESR decreases with increasing frequency. Typical ESR limits are established in each specific product series. However, the ESR limits provided are for reference only, and are not necessarily the actual value that a particular Series product will attain.

Total impedance of the capacitor is the vector sum of capacitive reactance (X_c) and ESR, below resonance; above resonance total impedance is the vector sum of inductive reactance (X_L) and ESR. See Figure 4.

$$X_c = \frac{1\text{ohm}}{2\pi fC}$$

where:
 f = frequency, Hertz
 C = capacitance, Farad

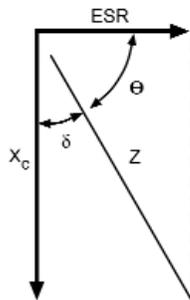


Figure 4a: Total Impedance of the Capacitor Below Resonance

$$X_L = 2\pi fL$$

where:
 f = frequency, Hertz
 C = capacitance, Farad

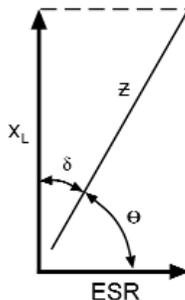


Figure 4b: Total Impedance of the Capacitor Above Resonance

To understand the many elements of a capacitor, see Figure 5.

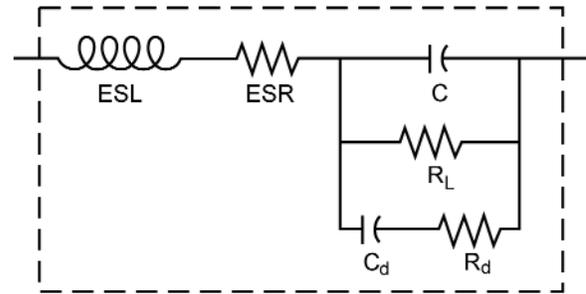


Figure 5. The Real Capacitor

A capacitor is a complex impedance consisting of many series and parallel elements, each adding to the complexity of the measurement system.

ESL – Represents lead wire and construction inductance. In most instances (especially in tantalum and monolithic ceramic capacitors) it is insignificant at the basic measurement frequencies of 120 and 1000 Hz.

ESR – Represents the actual ohmic series resistance in series with the capacitance. Lead wires and capacitor electrodes are contributing sources.

RL – Capacitor Leakage Resistance. Typically it can reach 50,000 megohms in a tantalum capacitor. It can exceed 10¹² ohms in monolithic ceramics and in film capacitors.

Rd – The dielectric loss contributed by dielectric absorption and molecular polarization. It becomes very significant in high frequency measurements and applications. Its value varies with frequency.

Cd – The inherent dielectric absorption of the solid tantalum capacitor which typically equates to 1-2% of the applied voltage.

As frequency increases, X_c continues to decrease according to its equation above. There is unavoidable inductance as well as resistance in all capacitors, and at some point in frequency, the reactance ceases to be capacitive and becomes inductive. This frequency is called the self-resonant point. In wet tantalum capacitors, the resonance is damped by the ESR, and a smooth, rather than abrupt, transition from capacitive to inductive reactance ($X_L = 2\pi fL$) follows.

Despite the fact that the reactance is nearly all inductive above the self-resonance, these capacitors find use as decoupling devices up to 10MHz.

ESR and Z are also affected by temperature. At 100 kHz, ESR decreases with increasing temperature. The amount of change is influenced by the size of the capacitance and is generally more pronounced on smaller ratings.

13. Power Dissipation

The power dissipation of this device is defined by the allowable ripple current rating as listed in the part number reference tables. These ratings reflect an internal temperature rise of +50°C at the +85°C ambient temperature with 40 kHz ripple life currents as specified in MIL-PRF-39006. These currents are established at these conditions, with the adjusted DC bias applied during the test.

The permissible AC currents applied to these devices at conditions other than those defined for the Ripple Life Test can be derived from the following table. This table is listed as Table II, in MIL-PRF-39006/22F.

The following rules apply to the ripple capability of these devices:

1. At +125°C, the rated voltage decreases to 2/3 of the +85°C rated.
2. The positive peak of the applied AC ripple voltage plus the DC bias cannot exceed the rated voltage of the device, and the DC bias minus the negative peak of the AC voltage cannot exceed the maximum allowable reverse voltage of the device.
3. The ripple current ratings within the part number tables represents a maximum allowable internal temperature rise of +50°C at 40 kHz, and at an ambient temperature of +85°C, and complying to rules 1 and 2.
4. The maximum allowable temperature rise decreases linearly, to a +10°C rise at +125°C.
5. The ESR decreases with increasing frequency, and the internal temperature rise is proportional the ESR of the device.
6. The "% of +85°C Rated Voltage" defines the DC bias level for the device.

14. Long-Term Stability

When stabilized for measurement at standard conditions, capacitance will typically change within +10% -20% during a 10,000 hour life test +85°C.

Dissipation factor data from 10,000 hour life tests at +85°C show that post limits (at standard conditions) are within 20% (max) of initial value at the conclusion of these tests.

Leakage current is more variable than capacitance or DF; in fact, leakage current typically exhibits a logarithmic

dependence in several respects. MIL-PRF-39006 permits leakage current (measured at standard conditions) to rise by 25% at 85°C over 10,000 hour life tests.

15. Failure Mode

Capacitor failure may be induced by exceeding the rated conditions of forward DC voltage, reverse DC voltage, surge voltage, surge current, power dissipation, or temperature. As with any practical device, these capacitors also possess an inherent, although low, failure rate when operated within the rated condition.

One failure mode is by short-circuit. Minor parametric drifts (see Section 14 "Long Term Stability") are of no consequence in circuits suitable for wet tantalum capacitors. Catastrophic failure occurs as an avalanche in DC leakage current over a short (millisecond) time span. The failed capacitor, while called "short-circuited", may exhibit a DC resistance of 10 to 10⁴ ohm.

If a failed capacitor is in an unprotected low-impedance circuit, continued flow of current through the capacitor may obviously produce severe overheating. The short-circuit failure may thereby be converted to an open-circuit failure. If the circuit does not open promptly, the over-heated capacitor may damage the circuit board or nearby components. Protection against such occurrence is obtained by current-limiting devices or fuses provided by the circuit design.

Fortunately, the inherent failure rate of KEMET wet tantalum capacitors is low, and this failure rate may be further improved by circuit design. Statistical failure rates are provided for wet tantalum capacitors.

16. Reliability Prediction

The failure rate is dependent upon three important application conditions; DC voltage, ambient temperature, and circuit impedance. Additional effects are attributable to the capacitance of the device and atmospheric and mechanical exposure of the assembled circuit. The 1000 multiplier at the end converts the failure rate to parts-per-billion piece-hours. A prediction of the failure rate can be made using these application conditions and the formulas and tables listed in MIL-HDBK-217F (Notice 2).

Permissible AC Currents

| Frequency of applied ripple current | 120 Hz | | | | 800 Hz | | | | 1kHz | | | | 10 kHz | | | | 40 kHz | | | | 100 kHz | | | | |
|-------------------------------------|-----------|------|------|------|-----------|------|------|------|-----------|------|------|------|-----------|------|------|------|-----------|------|------|------|-----------|------|------|------|------|
| | Temp (°C) | | | | Temp (°C) | | | | Temp (°C) | | | | Temp (°C) | | | | Temp (°C) | | | | Temp (°C) | | | | |
| | =55° | 85° | 105° | 125° | =55° | 85° | 105° | 125° | =55° | 85° | 105° | 125° | =55° | 85° | 105° | 125° | =55° | 85° | 105° | 125° | =55° | 85° | 105° | 125° | |
| % of +85°C Rated Voltage | 100% | 0.60 | 0.39 | -- | -- | 0.71 | 0.43 | -- | -- | 0.72 | 0.45 | -- | -- | 0.88 | 0.55 | -- | -- | 1.00 | 0.63 | -- | -- | 1.10 | 0.69 | -- | -- |
| | 90% | 0.60 | 0.46 | -- | -- | 0.71 | 0.55 | -- | -- | 0.72 | 0.55 | -- | -- | 0.88 | 0.67 | -- | -- | 1.00 | 0.77 | -- | -- | 1.10 | 0.85 | -- | -- |
| | 80% | 0.60 | 0.52 | 0.35 | -- | 0.71 | 0.62 | 0.42 | -- | 0.72 | 0.62 | 0.42 | -- | 0.88 | 0.76 | 0.52 | -- | 1.00 | 0.87 | 0.59 | -- | 1.10 | 0.96 | 0.65 | -- |
| | 70% | 0.60 | 0.58 | 0.44 | -- | 0.71 | 0.69 | 0.52 | -- | 0.72 | 0.70 | 0.52 | -- | 0.88 | 0.85 | 0.64 | -- | 1.00 | 0.97 | 0.73 | -- | 1.10 | 1.07 | 0.80 | -- |
| | +66.67% | 0.60 | 0.60 | 0.46 | 0.27 | 0.71 | 0.71 | 0.55 | 0.32 | 0.72 | 0.72 | 0.55 | 0.32 | 0.88 | 0.88 | 0.68 | 0.40 | 1.00 | 1.00 | 0.77 | 0.32 | 1.10 | 1.10 | 0.85 | 0.50 |

Base Multiplier: The first multiplier is the base multiplier (2) established for the capacitor type. For “CLR” “Tantalum Non-solid electrolyte” the base multiplier is 0.00040.

Temperature: The temperature factor is given as (3). From this formula, it can be seen that the unity factor, or 1, is derived at an ambient temperature of +25°C (+298°K), and that at temperatures below this the multiplier is decreasing and at temperatures above this the multiplier is increasing.

Voltage: The multiplier for application voltage (4) is a two step process: first, the application voltage is compared to 60% of rated voltage, and then this ratio is raised to an exponential power of 17 and added to unity. Consider applications of 50%, 60%, 70%, 80% and 90% of rated voltage. The multipliers for these applications would be 1.045, 2.00, 14.7, 134, and 986, respectively. From these results it is evident why manufacturers recommend application voltages not to exceed 50% rated voltages.

Capacitance: There is a factor (5) applied to the capacitance (in µF) which effectively increases the failure rate for increasing capacitance (increases in effective area resulting in increases in possible faults).

Environmental: The environmental factor is determined by the harshness of the ambient conditions beyond temperature. An explanation of these ratings is included in the MIL specification and are too extensive to be covered here. In most cases, this factor is set to ground benign or G_B, with the resulting factor equal to “1”.

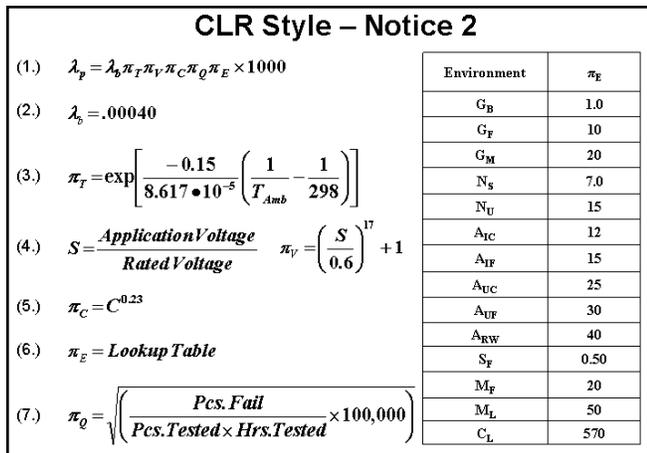


Figure 6. MIL-HDBK-217F Notice 2 formulas.

Quality Factor: All of these multipliers are applied to the established or base failure rate of the part. The CLR Series is qualified under U.S. military specification MIL-PRF-39006. Failure rates as low as 0.001% kHr are available under this test program.

For series not covered by military specifications, an internal sampling program is operated by KEMET Quality Assurance whereby parts are put on life test at rated voltage for 2000 hours. The confidence level chosen for the reporting data is 60%.)The cost of sampling each batch would be prohibitive, and no claim is made to guarantee the failure rate of each batch.) With this test-

ing and each new qualification test for new parts, the average failure rate for all commercial Series lies between 0.1% and 1.0% per thousand-piece-hours.

Fit Calculator

All of these factors are gathered into a Windows based software, available free from the KEMET web site (www.kemet.com). The “FIT Calculator” software does all the calculations and look-ups based on information entered or selected by the operator. A manual may also be downloaded from the same web page to explain the controls and displays. The Manual as well as a help screen also detail the environmental conditions.

17. Environmental Consideration

It is not possible to foresee all the conditions to which capacitors may be subjected. Following is a list of standard tests which each Series will survive. Data may be available (upon request) under more severe stresses for certain Series.

- **Life Test 85°C or 125°C, 2000 Hours;** when subjected to 2000 hours at 85°C at full rated DC voltage, or 125°C at 2/3 of 85°C voltage, the capacitor shall meet the following requirements when tested at 25°C.
 - The DCL shall be within 1.25 times the initial DCL limit.
 - Capacitance shall be within limits specified in MIL-PRF-39006.
- **Low Temperature (Storage) per MIL-PRF-39006.** Post test of capacitor shall meet the following requirements when tested at 25°C:
 - The DCL shall be within the initial DCL limit.
 - Capacitance shall be within limits in MIL-PRF-39006.
 - The DF shall not exceed the initial limit.
- **Lead Strength MIL-STD-202 Method 211:** Pull test will be performed as in MIL-STD-202, Method 211. The following details and exceptions shall apply.
 - a. Test condition letter - A
 - b. The body of the capacitor will be securely clamped during test.
 - c. Applied force - 3 pounds (1.4 kg)
 - d. Duration of applied force: 30 seconds
- **Vibration; High Frequency: Per MIL-STD-202, Method 204, Condition D, 10 Hz to 2000 Hz.**
 - a. Mounting - Capacitors shall be mounted on a fixture by the body. Leads shall be supported by rigidly supported terminals
 - b. Electrical load conditions - During the test, the specified DC rated voltage shall be applied to the capacitors.

- c. Test condition letter - H (80G).
 - d. Duration and direction of motion - 4 hours in each of two mutually perpendicular directions (total of 8 hours), one parallel and the other perpendicular to the axis.
 - e. Measurements during vibration - During the last cycle, an electrical measurement shall be made to determine intermittent operation or open- or short-circuiting. Observations shall also be made to determine intermittent contact or arcing or open- or short-circuiting. Detecting equipment shall be sufficiently sensitive to detect any interruption with a duration of 0.5 ms, or greater.
 - DC Leakage - shall not exceed 1.25 times initial limit
 - Capacitance - shall not change more than $\pm 5\%$ from initial limit
 - DF - shall not exceed 1.15 times initial limit
 - f. Examination after test - Capacitors shall be visually examined for evidence of mechanical damage.
- **Shock Test: Per MIL-STD-202, Method 213.**
The following details shall apply:
 - a. Special mounting means - Capacitors shall be rigidly mounted on a mounting fixture by the body. When securing leads, care shall be taken to avoid pinching the heads.
 - b. Test-condition letter - D (500 G peak). 6 ms. (sawtooth)
 - c. Measurements and electrical loading during shock - During the test, observations shall be made to determine intermittent contact or arcing or open- or short-circuiting. Detecting equipment shall be sufficiently sensitive to detect any interruption with a duration of 0.5 ms. The DC rated voltage shall be applied to the capacitors during the test.
 - d. Examinations after test - Capacitors shall be visually examined for evidence of arcing, breakdown, and mechanical damage.
 - **Thermal Shock - MIL-STD-202, Method 107:**
Capacitors shall be subjected to thermal shock in accordance with MIL-STD-202, Method 107, Test Condition A except step 3 shall be $+125^{\circ}\text{C}$. Measurements before and after cycling are required. Conditioning prior to the first cycle will be 15 minutes at the following standard inspection conditions:
 - a. Number of Cycles: 300 for qualification and Group C
 - b. Ambient Temperature – $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
 - c. Final measurements are made after stabilization at room temperature
 - **Moisture Resistance - MIL-STD-202, Method 106:** Capacitors shall be tested in accordance with MIL-STD-202, Method 106 including the following details:
 - a. Mounting - The capacitors shall be mounted by normal mounting means
 - b. Initial Measurements
 - c. Polarizing and Load Voltage - 6 vdc
 - d. Final measurements - After the final cycle and within 2 to 6 hours after removal of the capacitors from the humidity chamber, capacitance, dissipation factor, and DC leakage will be measured per MIL-PRF-39006.
 - **Resistance to Solvents - MIL-STD-202, Method 215:**
 - a. Brushing required after test
 - b. DCL meets limit shown in respective Part Number Tables
 - c. Capacitance meets applicable tolerance
 - d. DF meets limits shown in respective Part Number Tables
 - e. No visible damage to case or marking
 - **Resistance to Soldering Heat - MIL-STD-202, Method 210, Test Condition, Letter C.**
Leads shall be immersed to within 0.05 inch of the capacitor body. Capacitance, DF, and DCL should meet original limits shown in respective Part Number Tables.
 - **Solderability - MIL-STD, Method 208:**
 - a. Number of terminations on each capacitor tested: 2
 - b. Depth of insertion in flux and solder to within 0.062" of welded joint
 - **Stability at Low and High Temperature**
-55°C to 125°C: Capacitors will be capable of withstanding extreme temperature testing at a succession of continuous steps at $+25^{\circ}\text{C}$, -55°C , $+25^{\circ}\text{C}$, $+85^{\circ}\text{C}$, $+125^{\circ}\text{C}$, $+25^{\circ}\text{C}$, in the order stated. Capacitors shall be brought to thermal stability at each test temperature. Capacitance, DF, and DCL are measured at each test temperature except that DCL is not measured at -55°C , DC bias of 2.0 ± 0.5 vdc is recommended for the capacitance and DF measurements.
When measurements are made at the various steps, the electrical limits for each temperature shall not exceed the following limits.

| | |
|-------------------------------|--|
| Step 1, $+25^{\circ}\text{C}$ | DCL as indicated in original limit; capacitance within tolerance specified; DF as indicated in original limit shown in Part Number Tables. |
| Step 2, -55°C | Impedance and capacitance change as defined in M39006 Slash Sheet. |

- Step 3, +25°C DCL as indicated in original limit; capacitance within $\pm 5\%$ of initial value; ESR, DF within limit $\pm 5\%$ of initial value; ESR, DF within limit shown in Part Number Tables.
- Step 4, +85°C DCL shall not exceed 10 times original DCL limit at 25°C. Capacitance shall be within $\pm 10\%$ of the initial value. DF shall be within 125% of limits shown in Part Number Tables. ESR shall be within limits shown in Part Number Tables.
- Step 5, +125°C DCL shall not exceed 12.5 times the original limit at 25°C. Capacitance shall be within $\pm 12\%$ of initial value. DF shall be within 150% of limits shown in Part Number Tables. ESR shall be within limits shown in Part Number Tables.
- Step 6, +25°C DCL as indicated in original limit; capacitance within $\pm 5\%$ of initial value; ESR, DF as indicated in original limit shown in Part Number Tables.

Note: MIL-PRF-39006 specifies Δ 's and limits by individual slash sheet.

- **AC Ripple Life at 85°C: Per MIL-STD-202, Method 108:**

The following details shall apply:

- a. Distance of temperature measurements from specimens : Not applicable

- b. Method of mounting: Normal means
- c. Test condition letter: F (2000 hours, +72 hrs, - Ohm)
- d. DC Leakage, DF shall not exceed initial limit

- **Seal Condition: Per MIL-STD-202, Method 112**
Conditions A or D, and C

18. High Temperature Capacitors - T197 and T198 Series

The voltage derating for these capacitors begins at +85°C, as with all other tantalum capacitors. There will be a linear derating between 100% at +85°C and 2/3 (67%) at +125°C. For the 200°C rated parts, the voltage rating shall be 50%.

For reverse voltage rating, the 3 VDC shall apply to all temperatures up to +85°C. From +85°C to +125°C, the reverse voltage rating shall be 2 VDC. From +125°C to +200°C, the reverse voltage rating shall be 1.0 VDC.

19. Mounting

Wet tantalum capacitors will pass the Resistance to Soldering Heat Test of MIL-STD-202, Method 210, Condition C. This test simulates wave solder of topside board mount product. This demonstration of resistance to solder heat is in accordance with what is believed to be the industry standard. More severe treatment must be considered reflective of an improper soldering process.

Shown in Figure 7 is a recommended solder wave profile for wet tantalum capacitors

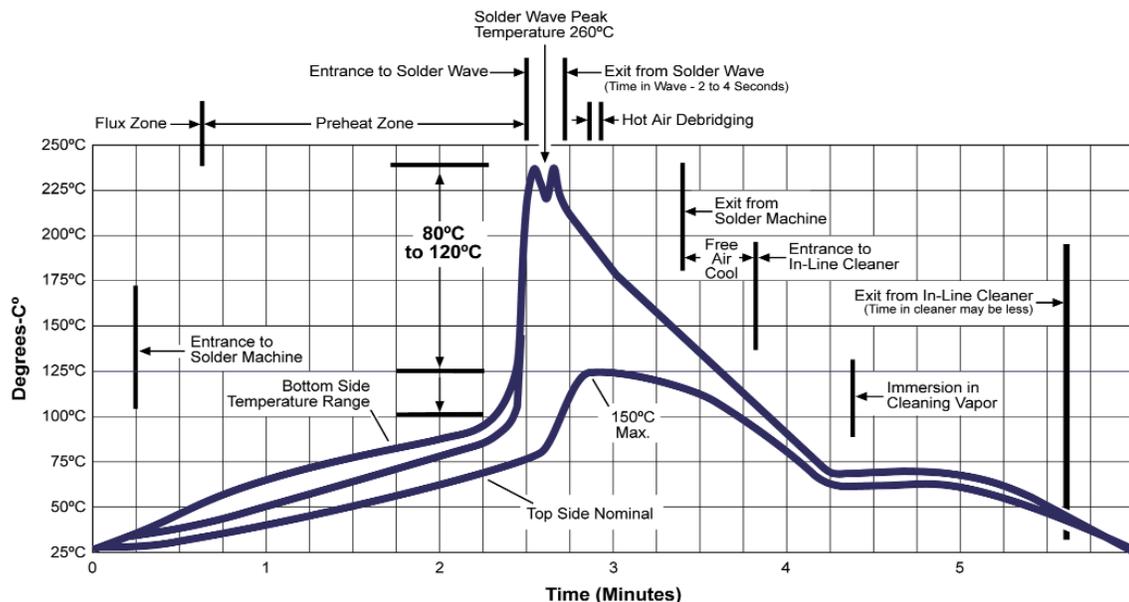


Figure 7. Optimum Solder Wave Profile

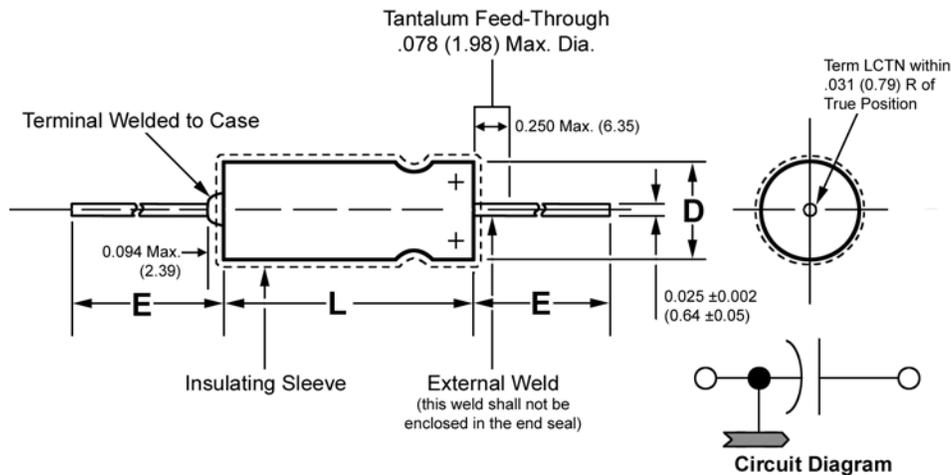
Applications

- Filtering, Bypass Circuits
- Coupling and Timing Circuits
- Low Source Impedance Circuits
- High Charging Current Circuits

Features

- Operating Temperature -55°C – +125°C
- Operating Temperature -55°C – +200°C, derated voltage, T197/T198 Series Only
- 6 – 125 Volts
- Capacitance Range – 1.7µF - 2200.0 µF
- High Shock, High Vibration Qualified
- Qualified to Mil-C-39006/22/25/30/31 Style CLR79, CLR81, CLR90, CLR91
- Capacitance Tolerance - ±5%, ±10%, ±20%
- Low ESR
- Tantalum Case

Outline Drawing

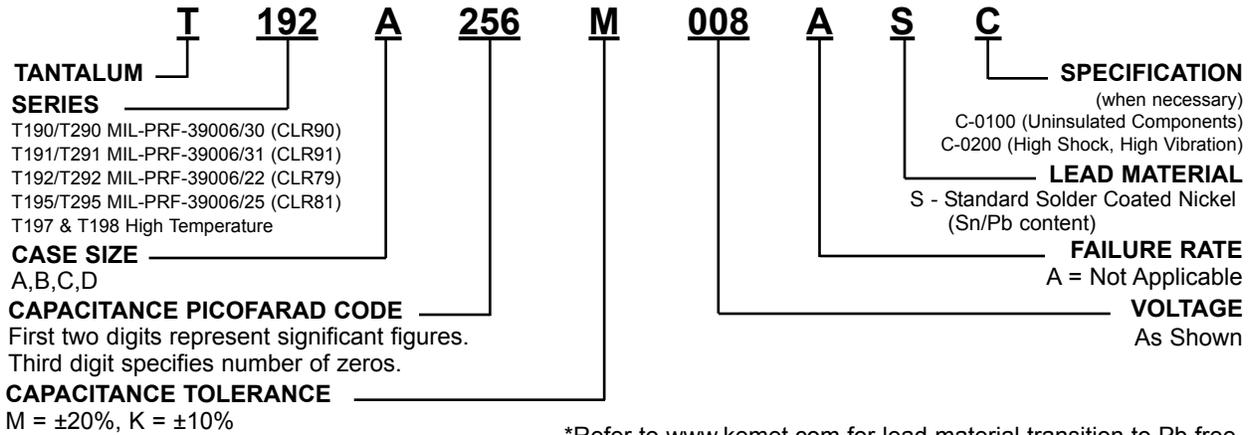


Dimensions - Inches (Millimeters)

| KEMET Case Size | MIL-PRF-39006/22/25/30/31 Case Size | Uninsulated Case | Uninsulated Case | Insulated Case | E ±0.25(6.35) |
|-----------------|-------------------------------------|------------------------------------|-------------------|----------------|------------------|
| | | L* +0.031(0.79) -0.016(0.41) | D ±0.016(0.41) | D Max. | |
| A | T1 | 0.453(11.51) | 0.188(4.78) | 0.219(5.56) | 1.50(38.10) |
| B | T2 | 0.641(16.28) | 0.281(7.14) | 0.312(7.92) | 2.25(57.15) |
| C | T3 | 0.766(19.46) | 0.375(9.52) | 0.406(10.31) | 2.25(57.15) |
| D | T4 | 1.062(26.97) | 0.375(9.52) | 0.406(10.31) | 2.25(57.15) |

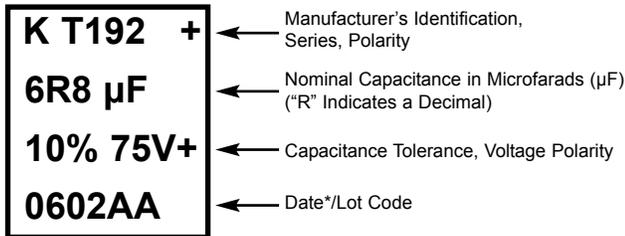
* Length of base case sleeving shall be specified in MIL-PRF-39006.

Ordering Information



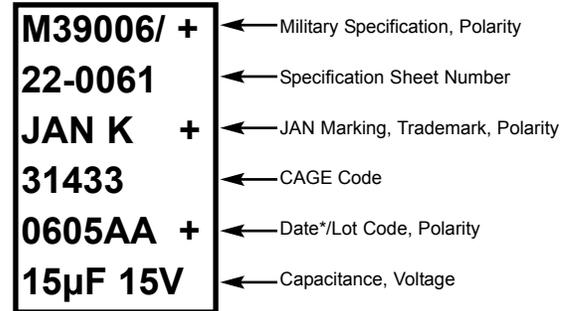
*Refer to www.kemet.com for lead material transition to Pb free.

T19X Commercial Component Marking



* 1st & 2nd digit = Year;
 3rd & 4th digit = Week

Mil-PRF-39006 Component Marking



* 1st & 2nd digit = Year
 3rd & 4th digit = Week

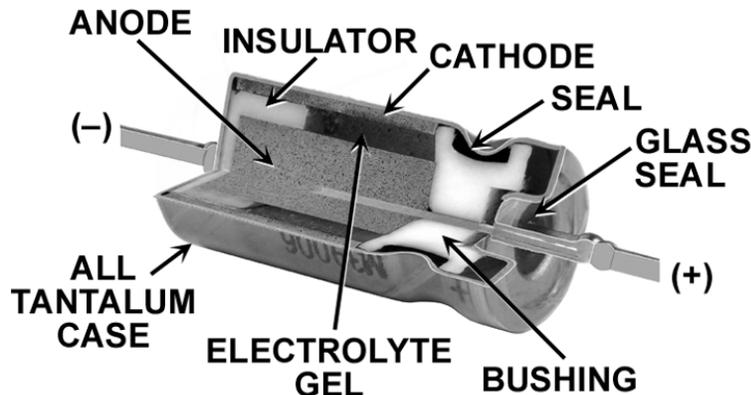
Packaging

| Case Size | | Pieces per Tray |
|-----------|-----|-----------------|
| KEMET | EIA | |
| A | T1 | 20 |
| B | T2 | 20 |
| C | T3 | 20 |
| D | T4 | 20 |

Component Weight

| Case Size | | Average Weight (grams) |
|-----------|-----|------------------------|
| KEMET | EIA | |
| A | T1 | 2.0 |
| B | T2 | 5.1 |
| C | T3 | 8.1 |
| D | T4 | 14.3 |

Construction



T190/T290 (CLR90) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/30A (CLR90) Capacitors Dash Number Reference (#) | | | KEMET Military Equivalent |
|---|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|--|--------|---------|------------------------------|
| | | | | | | | | Failure Rate (%/1000 Hrs) | | | |
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| 6 Volt Rating at +85°C (4 Volt Rating at +125°C) | | | | | | | | | | | |
| 30.0 | A | 20 | T190A306M006AS | 1.0 | 4.50 | 1.99 | 820 | 0001 | 0221 | 0441 | T290A306M006(1)S |
| 30.0 | A | 10 | T190A306K006AS | 1.0 | 4.50 | 1.99 | 820 | 0002 | 0222 | 0442 | T290A306K006(1)S |
| 30.0 | A | 5 | T190A306J006AS | 1.0 | 4.50 | 1.99 | 820 | 0003 | 0223 | 0443 | T290A306J006(1)S |
| 68.0 | A | 20 | T190A686M006AS | 1.0 | 7.50 | 1.58 | 960 | 0004 | 0224 | 0444 | T290A686M006(1)S |
| 68.0 | A | 10 | T190A686K006AS | 1.0 | 7.50 | 1.58 | 960 | 0005 | 0225 | 0445 | T290A686K006(1)S |
| 68.0 | A | 5 | T190A686J006AS | 1.0 | 7.50 | 1.58 | 960 | 0006 | 0226 | 0446 | T290A686J006(1)S |
| 140.0 | B | 20 | T190B147M006AS | 1.0 | 10.50 | 0.99 | 1200 | 0007 | 0227 | 0447 | T290B147M006(1)S |
| 140.0 | B | 10 | T190B147K006AS | 1.0 | 10.50 | 0.99 | 1200 | 0008 | 0228 | 0448 | T290B147K006(1)S |
| 140.0 | B | 5 | T190B147J006AS | 1.0 | 10.50 | 0.99 | 1200 | 0009 | 0229 | 0449 | T290B147J006(1)S |
| 270.0 | B | 20 | T190B277M006AS | 1.0 | 22.50 | 1.11 | 1375 | 0010 | 0230 | 0450 | T290B277M006(1)S |
| 270.0 | B | 10 | T190B277K006AS | 1.0 | 22.50 | 1.11 | 1375 | 0011 | 0231 | 0451 | T290B277K006(1)S |
| 270.0 | B | 5 | T190B277J006AS | 1.0 | 22.50 | 1.11 | 1375 | 0012 | 0232 | 0452 | T290B277J006(1)S |
| 330.0 | C | 20 | T190C337M006AS | 2.0 | 18.00 | 0.73 | 1800 | 0013 | 0233 | 0453 | T290C337M006(1)S |
| 330.0 | C | 10 | T190C337K006AS | 2.0 | 18.00 | 0.73 | 1800 | 0014 | 0234 | 0454 | T290C337K006(1)S |
| 330.0 | C | 5 | T190C337J006AS | 2.0 | 18.00 | 0.73 | 1800 | 0015 | 0235 | 0455 | T290C337J006(1)S |
| 560.0 | C | 20 | T190C567M006AS | 2.0 | 27.50 | 0.65 | 1900 | 0016 | 0236 | 0456 | T290C567M006(1)S |
| 560.0 | C | 10 | T190C567K006AS | 2.0 | 27.50 | 0.65 | 1900 | 0017 | 0237 | 0457 | T290C567K006(1)S |
| 560.0 | C | 5 | T190C567J006AS | 2.0 | 27.50 | 0.65 | 1900 | 0018 | 0238 | 0458 | T290C567J006(1)S |
| 1200.0 | D | 20 | T190D128M006AS | 3.0 | 45.00 | 0.50 | 2265 | 0019 | 0239 | 0459 | T290D128M006(1)S |
| 1200.0 | D | 10 | T190D128K006AS | 3.0 | 45.00 | 0.50 | 2265 | 0020 | 0240 | 0460 | T290D128K006(1)S |
| 8 Volt Rating at +85°C (5 Volt Rating at +125°C) | | | | | | | | | | | |
| 25.0 | A | 20 | T190A256M008AS | 1.0 | 3.75 | 1.99 | 820 | 0021 | 0241 | 0461 | T290A256M008(1)S |
| 25.0 | A | 10 | T190A256K008AS | 1.0 | 3.75 | 1.99 | 820 | 0022 | 0242 | 0462 | T290A256K008(1)S |
| 25.0 | A | 5 | T190A256J008AS | 1.0 | 3.75 | 1.99 | 820 | 0023 | 0243 | 0463 | T290A256J008(1)S |
| 56.0 | A | 20 | T190A566M008AS | 1.0 | 7.00 | 1.66 | 900 | 0024 | 0244 | 0464 | T290A566M008(1)S |
| 56.0 | A | 10 | T190A566K008AS | 1.0 | 7.00 | 1.66 | 900 | 0025 | 0245 | 0465 | T290A566K008(1)S |
| 56.0 | A | 5 | T190A566J008AS | 1.0 | 7.00 | 1.66 | 900 | 0026 | 0246 | 0466 | T290A566J008(1)S |
| 120.0 | B | 20 | T190B127M008AS | 1.0 | 10.00 | 1.11 | 1220 | 0027 | 0247 | 0467 | T290B127M008(1)S |
| 120.0 | B | 10 | T190B127K008AS | 1.0 | 10.00 | 1.11 | 1220 | 0028 | 0248 | 0468 | T290B127K008(1)S |
| 120.0 | B | 5 | T190B127J008AS | 1.0 | 10.00 | 1.11 | 1220 | 0029 | 0249 | 0469 | T290B127J008(1)S |
| 220.0 | B | 20 | T190B227M008AS | 1.0 | 18.50 | 1.12 | 1370 | 0030 | 0250 | 0470 | T290B227M008(1)S |
| 220.0 | B | 10 | T190B227K008AS | 1.0 | 18.50 | 1.12 | 1370 | 0031 | 0251 | 0471 | T290B227K008(1)S |
| 220.0 | B | 5 | T190B227J008AS | 1.0 | 18.50 | 1.12 | 1370 | 0032 | 0252 | 0472 | T290B227J008(1)S |
| 290.0 | C | 20 | T190C297M008AS | 2.0 | 17.00 | 0.78 | 1770 | 0033 | 0253 | 0473 | T290C297M008(1)S |
| 290.0 | C | 10 | T190C297K008AS | 2.0 | 17.00 | 0.78 | 1770 | 0034 | 0254 | 0474 | T290C297K008(1)S |
| 290.0 | C | 5 | T190C297J008AS | 2.0 | 17.00 | 0.78 | 1770 | 0035 | 0255 | 0475 | T290C297J008(1)S |
| 430.0 | C | 20 | T190C437M008AS | 2.0 | 23.00 | 0.71 | 1825 | 0036 | 0256 | 0476 | T290C437M008(1)S |
| 430.0 | C | 10 | T190C437K008AS | 2.0 | 23.00 | 0.71 | 1825 | 0037 | 0257 | 0477 | T290C437K008(1)S |
| 430.0 | C | 5 | T190C437J008AS | 2.0 | 23.00 | 0.71 | 1825 | 0038 | 0258 | 0478 | T290C437J008(1)S |
| 850.0 | D | 20 | T190D857M008AS | 4.0 | 30.00 | 0.47 | 2330 | 0039 | 0259 | 0479 | T290D857M008(1)S |
| 850.0 | D | 10 | T190D857K008AS | 4.0 | 30.00 | 0.47 | 2330 | 0040 | 0260 | 0480 | T290D857K008(1)S |
| 10 Volt Rating at +85°C (7 Volt Rating at +125°C) | | | | | | | | | | | |
| 20.0 | A | 20 | T190A206M010AS | 1.0 | 3.00 | 1.99 | 820 | 0041 | 0261 | 0481 | T290A206M010(1)S |
| 20.0 | A | 10 | T190A206K010AS | 1.0 | 3.00 | 1.99 | 820 | 0042 | 0262 | 0482 | T290A206K010(1)S |
| 20.0 | A | 5 | T190A206J010AS | 1.0 | 3.00 | 1.99 | 820 | 0043 | 0263 | 0483 | T290A206J010(1)S |
| 47.0 | A | 20 | T190A476M010AS | 1.0 | 6.50 | 1.84 | 855 | 0044 | 0264 | 0484 | T290A476M010(1)S |
| 47.0 | A | 10 | T190A476K010AS | 1.0 | 6.50 | 1.84 | 855 | 0045 | 0265 | 0485 | T290A476K010(1)S |
| 47.0 | A | 5 | T190A476J010AS | 1.0 | 6.50 | 1.84 | 855 | 0046 | 0266 | 0486 | T290A476J010(1)S |
| 100.0 | B | 20 | T190B107M010AS | 1.0 | 7.50 | 0.99 | 1200 | 0047 | 0267 | 0487 | T290B107M010(1)S |
| 100.0 | B | 10 | T190B107K010AS | 1.0 | 7.50 | 0.99 | 1200 | 0048 | 0268 | 0488 | T290B107K010(1)S |
| 100.0 | B | 5 | T190B107J010AS | 1.0 | 7.50 | 0.99 | 1200 | 0049 | 0269 | 0489 | T290B107J010(1)S |
| 180.0 | B | 20 | T190B187M010AS | 1.0 | 15.00 | 1.11 | 1365 | 0050 | 0270 | 0490 | T290B187M010(1)S |
| 180.0 | B | 10 | T190B187K010AS | 1.0 | 15.00 | 1.11 | 1365 | 0051 | 0271 | 0491 | T290B187K010(1)S |
| 180.0 | B | 5 | T190B187J010AS | 1.0 | 15.00 | 1.11 | 1365 | 0052 | 0272 | 0492 | T290B187J010(1)S |
| 250.0 | C | 20 | T190C257M010AS | 2.0 | 15.00 | 0.80 | 1720 | 0053 | 0273 | 0493 | T290C257M010(1)S |
| 250.0 | C | 10 | T190C257K010AS | 2.0 | 15.00 | 0.80 | 1720 | 0054 | 0274 | 0494 | T290C257K010(1)S |
| 250.0 | C | 5 | T190C257J010AS | 2.0 | 15.00 | 0.80 | 1720 | 0055 | 0275 | 0495 | T290C257J010(1)S |
| 390.0 | C | 20 | T190C397M010AS | 2.0 | 22.00 | 0.75 | 1800 | 0056 | 0276 | 0496 | T290C397M010(1)S |
| 390.0 | C | 10 | T190C397K010AS | 2.0 | 22.00 | 0.75 | 1800 | 0057 | 0277 | 0497 | T290C397K010(1)S |
| 390.0 | C | 5 | T190C397J010AS | 2.0 | 22.00 | 0.75 | 1800 | 0058 | 0278 | 0498 | T290C397J010(1)S |
| 750.0 | D | 20 | T190D757M010AS | 4.0 | 25.00 | 0.44 | 2360 | 0059 | 0279 | 0499 | T290D757M010(1)S |
| 750.0 | D | 10 | T190D757K010AS | 4.0 | 25.00 | 0.44 | 2360 | 0060 | 0280 | 0500 | T290D757K010(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T190/T290 (CLR90) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mAmps at 85°C 40 kHz | MIL-PRF-39006/30A (CLR90) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|--|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| | | | | | | | | 15 Volt Rating at +85°C (10 Volt Rating at +125°C) | | | |
| 15.0 | A | 20 | T190A156M015AS | 1.0 | 2.50 | 2.21 | 780 | 0061 | 0281 | 0501 | T290A156M015(1)S |
| 15.0 | A | 10 | T190A156K015AS | 1.0 | 2.50 | 2.21 | 780 | 0062 | 0282 | 0502 | T290A156K015(1)S |
| 15.0 | A | 5 | T190A156J015AS | 1.0 | 2.50 | 2.21 | 780 | 0063 | 0283 | 0503 | T290A156J015(1)S |
| 33.0 | A | 20 | T190A336M015AS | 1.0 | 5.00 | 2.01 | 820 | 0064 | 0284 | 0504 | T290A336M015(1)S |
| 33.0 | A | 10 | T190A336K015AS | 1.0 | 5.00 | 2.01 | 820 | 0065 | 0285 | 0505 | T290A336K015(1)S |
| 33.0 | A | 5 | T190A336J015AS | 1.0 | 5.00 | 2.01 | 820 | 0066 | 0286 | 0506 | T290A336J015(1)S |
| 70.0 | B | 20 | T190B706M015AS | 1.0 | 6.50 | 1.23 | 1150 | 0067 | 0287 | 0507 | T290B706M015(1)S |
| 70.0 | B | 10 | T190B706K015AS | 1.0 | 6.50 | 1.23 | 1150 | 0068 | 0288 | 0508 | T290B706K015(1)S |
| 70.0 | B | 5 | T190B706J015AS | 1.0 | 6.50 | 1.23 | 1150 | 0069 | 0289 | 0509 | T290B706J015(1)S |
| 120.0 | B | 20 | T190B127M015AS | 1.0 | 9.00 | 0.99 | 1450 | 0070 | 0290 | 0510 | T290B127M015(1)S |
| 120.0 | B | 10 | T190B127K015AS | 1.0 | 9.00 | 0.99 | 1450 | 0071 | 0291 | 0511 | T290B127K015(1)S |
| 120.0 | B | 5 | T190B127J015AS | 1.0 | 9.00 | 0.99 | 1450 | 0072 | 0292 | 0512 | T290B127J015(1)S |
| 170.0 | C | 20 | T190C177M015AS | 2.0 | 12.50 | 0.98 | 1480 | 0073 | 0293 | 0513 | T290C177M015(1)S |
| 170.0 | C | 10 | T190C177K015AS | 2.0 | 12.50 | 0.98 | 1480 | 0074 | 0294 | 0514 | T290C177K015(1)S |
| 170.0 | C | 5 | T190C177J015AS | 2.0 | 12.50 | 0.98 | 1480 | 0075 | 0295 | 0515 | T290C177J015(1)S |
| 270.0 | C | 20 | T190C277M015AS | 2.0 | 16.00 | 0.79 | 1740 | 0076 | 0296 | 0516 | T290C277M015(1)S |
| 270.0 | C | 10 | T190C277K015AS | 2.0 | 16.00 | 0.79 | 1740 | 0077 | 0297 | 0517 | T290C277K015(1)S |
| 270.0 | C | 5 | T190C277J015AS | 2.0 | 16.00 | 0.79 | 1740 | 0078 | 0298 | 0518 | T290C277J015(1)S |
| 540.0 | D | 20 | T190D547M015AS | 6.0 | 20.00 | 0.49 | 2330 | 0079 | 0299 | 0519 | T290D547M015(1)S |
| 540.0 | D | 10 | T190D547K015AS | 6.0 | 20.00 | 0.49 | 2330 | 0080 | 0300 | 0520 | T290D547K015(1)S |
| 25 Volt Rating at +85°C (15 Volt Rating at +125°C) | | | | | | | | | | | |
| 10.0 | A | 20 | T190A106M025AS | 1.0 | 2.00 | 2.66 | 715 | 0081 | 0301 | 0521 | T290A106M025(1)S |
| 10.0 | A | 10 | T190A106K025AS | 1.0 | 2.00 | 2.66 | 715 | 0082 | 0302 | 0522 | T290A106K025(1)S |
| 10.0 | A | 5 | T190A106J025AS | 1.0 | 2.00 | 2.66 | 715 | 0083 | 0303 | 0523 | T290A106J025(1)S |
| 22.0 | A | 20 | T190A226M025AS | 1.0 | 3.30 | 1.99 | 825 | 0084 | 0304 | 0524 | T290A226M025(1)S |
| 22.0 | A | 10 | T190A226K025AS | 1.0 | 3.30 | 1.99 | 825 | 0085 | 0305 | 0525 | T290A226K025(1)S |
| 22.0 | A | 5 | T190A226J025AS | 1.0 | 3.30 | 1.99 | 825 | 0086 | 0306 | 0526 | T290A226J025(1)S |
| 50.0 | B | 20 | T190B506M025AS | 1.0 | 5.50 | 1.46 | 1130 | 0087 | 0307 | 0527 | T290B506M025(1)S |
| 50.0 | B | 10 | T190B506K025AS | 1.0 | 5.50 | 1.46 | 1130 | 0088 | 0308 | 0528 | T290B506K025(1)S |
| 50.0 | B | 5 | T190B506J025AS | 1.0 | 5.50 | 1.46 | 1130 | 0089 | 0309 | 0529 | T290B506J025(1)S |
| 100.0 | B | 20 | T190B107M025AS | 1.0 | 7.50 | 0.99 | 1435 | 0090 | 0310 | 0530 | T290B107M025(1)S |
| 100.0 | B | 10 | T190B107K025AS | 1.0 | 7.50 | 0.99 | 1435 | 0091 | 0311 | 0531 | T290B107K025(1)S |
| 100.0 | B | 5 | T190B107J025AS | 1.0 | 7.50 | 0.99 | 1435 | 0092 | 0312 | 0532 | T290B107J025(1)S |
| 120.0 | C | 20 | T190C127M025AS | 2.0 | 10.50 | 1.16 | 1450 | 0093 | 0313 | 0533 | T290C127M025(1)S |
| 120.0 | C | 10 | T190C127K025AS | 2.0 | 10.50 | 1.16 | 1450 | 0094 | 0314 | 0534 | T290C127K025(1)S |
| 120.0 | C | 5 | T190C127J025AS | 2.0 | 10.50 | 1.16 | 1450 | 0095 | 0315 | 0535 | T290C127J025(1)S |
| 180.0 | C | 20 | T190C187M025AS | 2.0 | 13.00 | 0.96 | 1525 | 0096 | 0316 | 0536 | T290C187M025(1)S |
| 180.0 | C | 10 | T190C187K025AS | 2.0 | 13.00 | 0.96 | 1525 | 0097 | 0317 | 0537 | T290C187K025(1)S |
| 180.0 | C | 5 | T190C187J025AS | 2.0 | 13.00 | 0.96 | 1525 | 0098 | 0318 | 0538 | T290C187J025(1)S |
| 350.0 | D | 20 | T190D357M025AS | 7.0 | 17.50 | 0.67 | 1970 | 0099 | 0319 | 0539 | T290D357M025(1)S |
| 350.0 | D | 10 | T190D357K025AS | 7.0 | 17.50 | 0.67 | 1970 | 0100 | 0320 | 0540 | T290D357K025(1)S |
| 30 Volt Rating at +85°C (20 Volt Rating at +125°C) | | | | | | | | | | | |
| 8.0 | A | 20 | T190A805M030AS | 1.0 | 2.00 | 3.32 | 640 | 0101 | 0321 | 0541 | T290A805M030(1)S |
| 8.0 | A | 10 | T190A805K030AS | 1.0 | 2.00 | 3.32 | 640 | 0102 | 0322 | 0542 | T290A805K030(1)S |
| 8.0 | A | 5 | T190A805J030AS | 1.0 | 2.00 | 3.32 | 640 | 0103 | 0323 | 0543 | T290A805J030(1)S |
| 15.0 | A | 20 | T190A156M030AS | 1.0 | 2.50 | 2.21 | 780 | 0104 | 0324 | 0544 | T290A156M030(1)S |
| 15.0 | A | 10 | T190A156K030AS | 1.0 | 2.50 | 2.21 | 780 | 0105 | 0325 | 0545 | T290A156K030(1)S |
| 15.0 | A | 5 | T190A156J030AS | 1.0 | 2.50 | 2.21 | 780 | 0106 | 0326 | 0546 | T290A156J030(1)S |
| 40.0 | B | 20 | T190B406M030AS | 1.0 | 5.00 | 1.66 | 1120 | 0107 | 0327 | 0547 | T290B406M030(1)S |
| 40.0 | B | 10 | T190B406K030AS | 1.0 | 5.00 | 1.66 | 1120 | 0108 | 0328 | 0548 | T290B406K030(1)S |
| 40.0 | B | 5 | T190B406J030AS | 1.0 | 5.00 | 1.66 | 1120 | 0109 | 0329 | 0549 | T290B406J030(1)S |
| 68.0 | B | 20 | T190B686M030AS | 1.0 | 6.50 | 1.27 | 1285 | 0110 | 0330 | 0550 | T290B686M030(1)S |
| 68.0 | B | 10 | T190B686K030AS | 1.0 | 6.50 | 1.27 | 1285 | 0111 | 0331 | 0551 | T290B686K030(1)S |
| 68.0 | B | 5 | T190B686J030AS | 1.0 | 6.50 | 1.27 | 1285 | 0112 | 0332 | 0552 | T290B686J030(1)S |
| 100.0 | C | 20 | T190C107M030AS | 2.0 | 8.50 | 1.13 | 1450 | 0113 | 0333 | 0553 | T290C107M030(1)S |
| 100.0 | C | 10 | T190C107K030AS | 2.0 | 8.50 | 1.13 | 1450 | 0114 | 0334 | 0554 | T290C107K030(1)S |
| 100.0 | C | 5 | T190C107J030AS | 2.0 | 8.50 | 1.13 | 1450 | 0115 | 0335 | 0555 | T290C107J030(1)S |
| 150.0 | C | 20 | T190C157M030AS | 2.0 | 11.50 | 1.02 | 1525 | 0116 | 0336 | 0556 | T290C157M030(1)S |
| 150.0 | C | 10 | T190C157K030AS | 2.0 | 11.50 | 1.02 | 1525 | 0117 | 0337 | 0557 | T290C157K030(1)S |
| 150.0 | C | 5 | T190C157J030AS | 2.0 | 11.50 | 1.02 | 1525 | 0118 | 0338 | 0558 | T290C157J030(1)S |
| 300.0 | D | 20 | T190D307M030AS | 8.0 | 15.50 | 0.69 | 1950 | 0119 | 0339 | 0559 | T290D307M030(1)S |
| 300.0 | D | 10 | T190D307K030AS | 8.0 | 15.50 | 0.69 | 1950 | 0120 | 0340 | 0560 | T290D307K030(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T190/T290 (CLR90) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mA rms at 85°C 40 kHz | MIL-PRF-39006/30A (CLR90) | | | KEMET Military Equivalent |
|--|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|--|---|------|------|------------------------------|
| | | | | | | | | Capacitors Dash Number Reference (#) | | | |
| | | | | | | | | Failure Rate (%/1000 Hrs) | | | |
| | | | M(1.0) | P(0.1) | R(0.01) | | | | | | |
| 50 Volt Rating at +85°C (30 Volt Rating at +125°C) | | | | | | | | | | | |
| 5.0 | A | 20 | T190A505M050AS | 1.0 | 1.50 | 3.98 | 580 | 0121 | 0341 | 0561 | T290A505M050(1)S |
| 5.0 | A | 10 | T190A505K050AS | 1.0 | 1.50 | 3.98 | 580 | 0122 | 0342 | 0562 | T290A505K050(1)S |
| 5.0 | A | 5 | T190A505J050AS | 1.0 | 1.50 | 3.98 | 580 | 0123 | 0343 | 0563 | T290A505J050(1)S |
| 10.0 | A | 20 | T190A106M050AS | 1.0 | 2.00 | 2.66 | 715 | 0124 | 0344 | 0564 | T290A106M050(1)S |
| 10.0 | A | 10 | T190A106K050AS | 1.0 | 2.00 | 2.66 | 715 | 0125 | 0345 | 0565 | T290A106K050(1)S |
| 10.0 | A | 5 | T190A106J050AS | 1.0 | 2.00 | 2.66 | 715 | 0126 | 0346 | 0566 | T290A106J050(1)S |
| 25.0 | B | 20 | T190B256M050AS | 1.0 | 4.00 | 2.13 | 1005 | 0127 | 0347 | 0567 | T290B256M050(1)S |
| 25.0 | B | 10 | T190B256K050AS | 1.0 | 4.00 | 2.13 | 1005 | 0128 | 0348 | 0568 | T290B256K050(1)S |
| 25.0 | B | 5 | T190B256J050AS | 1.0 | 4.00 | 2.13 | 1005 | 0129 | 0349 | 0569 | T290B256J050(1)S |
| 47.0 | B | 20 | T190B476M050AS | 1.0 | 5.50 | 1.56 | 1155 | 0130 | 0350 | 0570 | T290B476M050(1)S |
| 47.0 | B | 10 | T190B476K050AS | 1.0 | 5.50 | 1.56 | 1155 | 0131 | 0351 | 0571 | T290B476K050(1)S |
| 47.0 | B | 5 | T190B476J050AS | 1.0 | 5.50 | 1.56 | 1155 | 0132 | 0352 | 0572 | T290B476J050(1)S |
| 60.0 | C | 20 | T190C606M050AS | 2.0 | 6.00 | 1.33 | 1335 | 0133 | 0353 | 0573 | T290C606M050(1)S |
| 60.0 | C | 10 | T190C606K050AS | 2.0 | 6.00 | 1.33 | 1335 | 0134 | 0354 | 0574 | T290C606K050(1)S |
| 60.0 | C | 5 | T190C606J050AS | 2.0 | 6.00 | 1.33 | 1335 | 0135 | 0355 | 0575 | T290C606J050(1)S |
| 82.0 | C | 20 | T190C826M050AS | 2.0 | 7.50 | 1.22 | 1400 | 0136 | 0356 | 0576 | T290C826M050(1)S |
| 82.0 | C | 10 | T190C826K050AS | 2.0 | 7.50 | 1.22 | 1400 | 0137 | 0357 | 0577 | T290C826K050(1)S |
| 82.0 | C | 5 | T190C826J050AS | 2.0 | 7.50 | 1.22 | 1400 | 0138 | 0358 | 0578 | T290C826J050(1)S |
| 160.0 | D | 20 | T190D167M050AS | 8.0 | 8.50 | 0.71 | 1900 | 0139 | 0359 | 0579 | T290D167M050(1)S |
| 160.0 | D | 10 | T190D167K050AS | 8.0 | 8.50 | 0.71 | 1900 | 0140 | 0360 | 0580 | T290D167K050(1)S |
| 60 Volt Rating at +85°C (40 Volt Rating at +125°C) | | | | | | | | | | | |
| 4.0 | A | 20 | T190A405M060AS | 1.0 | 1.40 | 4.65 | 525 | 0141 | 0361 | 0581 | T290A405M060(1)S |
| 4.0 | A | 10 | T190A405K060AS | 1.0 | 1.40 | 4.65 | 525 | 0142 | 0362 | 0582 | T290A405K060(1)S |
| 4.0 | A | 5 | T190A405J060AS | 1.0 | 1.40 | 4.65 | 525 | 0143 | 0363 | 0583 | T290A405J060(1)S |
| 8.2 | A | 20 | T190A825M060AS | 1.0 | 2.00 | 3.24 | 625 | 0144 | 0364 | 0584 | T290A825M060(1)S |
| 8.2 | A | 10 | T190A825K060AS | 1.0 | 2.00 | 3.24 | 625 | 0145 | 0365 | 0585 | T290A825K060(1)S |
| 8.2 | A | 5 | T190A825J060AS | 1.0 | 2.00 | 3.24 | 625 | 0146 | 0366 | 0586 | T290A825J060(1)S |
| 20.0 | B | 20 | T190B206M060AS | 1.0 | 3.50 | 2.32 | 930 | 0147 | 0367 | 0587 | T290B206M060(1)S |
| 20.0 | B | 10 | T190B206K060AS | 1.0 | 3.50 | 2.32 | 930 | 0148 | 0368 | 0588 | T290B206K060(1)S |
| 20.0 | B | 5 | T190B206J060AS | 1.0 | 3.50 | 2.32 | 930 | 0149 | 0369 | 0589 | T290B206J060(1)S |
| 39.0 | B | 20 | T190B396M060AS | 1.0 | 5.00 | 1.70 | 1110 | 0150 | 0370 | 0590 | T290B396M060(1)S |
| 39.0 | B | 10 | T190B396K060AS | 1.0 | 5.00 | 1.70 | 1110 | 0151 | 0371 | 0591 | T290B396K060(1)S |
| 39.0 | B | 5 | T190B396J060AS | 1.0 | 5.00 | 1.70 | 1110 | 0152 | 0372 | 0592 | T290B396J060(1)S |
| 50.0 | C | 20 | T190C506M060AS | 2.0 | 5.00 | 1.33 | 1330 | 0153 | 0373 | 0593 | T290C506M060(1)S |
| 50.0 | C | 10 | T190C506K060AS | 2.0 | 5.00 | 1.33 | 1330 | 0154 | 0374 | 0594 | T290C506K060(1)S |
| 50.0 | C | 5 | T190C506J060AS | 2.0 | 5.00 | 1.33 | 1330 | 0155 | 0375 | 0595 | T290C506J060(1)S |
| 68.0 | C | 20 | T190C686M060AS | 2.0 | 6.50 | 1.27 | 1365 | 0156 | 0376 | 0596 | T290C686M060(1)S |
| 68.0 | C | 10 | T190C686K060AS | 2.0 | 6.50 | 1.27 | 1365 | 0157 | 0377 | 0597 | T290C686K060(1)S |
| 68.0 | C | 5 | T190C686J060AS | 2.0 | 6.50 | 1.27 | 1365 | 0158 | 0378 | 0598 | T290C686J060(1)S |
| 140.0 | D | 20 | T190D147M060AS | 8.0 | 8.00 | 0.76 | 1850 | 0159 | 0379 | 0599 | T290D147M060(1)S |
| 140.0 | D | 10 | T190D147K060AS | 8.0 | 8.00 | 0.76 | 1850 | 0160 | 0380 | 0600 | T290D147K060(1)S |
| 75 Volt Rating at +85°C (50 Volt Rating at +125°C) | | | | | | | | | | | |
| 3.5 | A | 20 | T190A355M075AS | 1.0 | 1.25 | 4.74 | 525 | 0161 | 0381 | 0601 | T290A355M075(1)S |
| 3.5 | A | 10 | T190A355K075AS | 1.0 | 1.25 | 4.74 | 525 | 0162 | 0382 | 0602 | T290A355K075(1)S |
| 3.5 | A | 5 | T190A355J075AS | 1.0 | 1.25 | 4.74 | 525 | 0163 | 0383 | 0603 | T290A355J075(1)S |
| 6.8 | A | 20 | T190A685M075AS | 1.0 | 1.75 | 3.42 | 610 | 0164 | 0384 | 0604 | T290A685M075(1)S |
| 6.8 | A | 10 | T190A685K075AS | 1.0 | 1.75 | 3.42 | 610 | 0165 | 0385 | 0605 | T290A685K075(1)S |
| 6.8 | A | 5 | T190A685J075AS | 1.0 | 1.75 | 3.42 | 610 | 0166 | 0386 | 0606 | T290A685J075(1)S |
| 15.0 | B | 20 | T190B156M075AS | 1.0 | 3.00 | 2.66 | 890 | 0167 | 0387 | 0607 | T290B156M075(1)S |
| 15.0 | B | 10 | T190B156K075AS | 1.0 | 3.00 | 2.66 | 890 | 0168 | 0388 | 0608 | T290B156K075(1)S |
| 15.0 | B | 5 | T190B156J075AS | 1.0 | 3.00 | 2.66 | 890 | 0169 | 0389 | 0609 | T290B156J075(1)S |
| 33.0 | B | 20 | T190B336M075AS | 1.0 | 5.00 | 2.01 | 1000 | 0170 | 0390 | 0610 | T290B336M075(1)S |
| 33.0 | B | 10 | T190B336K075AS | 1.0 | 5.00 | 2.01 | 1000 | 0171 | 0391 | 0611 | T290B336K075(1)S |
| 33.0 | B | 5 | T190B336J075AS | 1.0 | 5.00 | 2.01 | 1000 | 0172 | 0392 | 0612 | T290B336J075(1)S |
| 40.0 | C | 20 | T190C406M075AS | 2.0 | 4.50 | 1.50 | 1250 | 0173 | 0393 | 0613 | T290C406M075(1)S |
| 40.0 | C | 10 | T190C406K075AS | 2.0 | 4.50 | 1.50 | 1250 | 0174 | 0394 | 0614 | T290C406K075(1)S |
| 40.0 | C | 5 | T190C406J075AS | 2.0 | 4.50 | 1.50 | 1250 | 0175 | 0395 | 0615 | T290C406J075(1)S |
| 56.0 | C | 20 | T190C566M075AS | 2.0 | 5.50 | 1.31 | 1335 | 0176 | 0396 | 0616 | T290C566M075(1)S |
| 56.0 | C | 10 | T190C566K075AS | 2.0 | 5.50 | 1.31 | 1335 | 0177 | 0397 | 0617 | T290C566K075(1)S |
| 56.0 | C | 5 | T190C566J075AS | 2.0 | 5.50 | 1.31 | 1335 | 0178 | 0398 | 0618 | T290C566J075(1)S |
| 110.0 | D | 20 | T190D117M075AS | 9.0 | 6.00 | 0.73 | 1850 | 0179 | 0399 | 0619 | T290D117M075(1)S |
| 110.0 | D | 10 | T190D117K075AS | 9.0 | 6.00 | 0.73 | 1850 | 0180 | 0400 | 0620 | T290D117K075(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)

(#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T190/T290 (CLR90) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mAmps at 85°C 40 kHz | MIL-PRF-39006/30A (CLR90) | | | KEMET Military Equivalent |
|---|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | Capacitors Dash Number Reference (#) | | | |
| | | | | | | | | Failure Rate (%/1000 Hrs) | | | |
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| 100 Volt Rating at +85°C (65 Volt Rating at +125°C) | | | | | | | | | | | |
| 2.5 | A | 20 | T190A255M100AS | 1.0 | 1.00 | 5.31 | 505 | 0181 | 0401 | 0621 | T290A255M100(1)S |
| 2.5 | A | 10 | T190A255K100AS | 1.0 | 1.00 | 5.31 | 505 | 0182 | 0402 | 0622 | T290A255K100(1)S |
| 2.5 | A | 5 | T190A255J100AS | 1.0 | 1.00 | 5.31 | 505 | 0183 | 0403 | 0623 | T290A255J100(1)S |
| 4.7 | A | 20 | T190A475M100AS | 1.0 | 1.50 | 4.24 | 565 | 0184 | 0404 | 0624 | T290A475M100(1)S |
| 4.7 | A | 10 | T190A475K100AS | 1.0 | 1.50 | 4.24 | 565 | 0185 | 0405 | 0625 | T290A475K100(1)S |
| 4.7 | A | 5 | T190A475J100AS | 1.0 | 1.50 | 4.24 | 565 | 0186 | 0406 | 0626 | T290A475J100(1)S |
| 11.0 | B | 20 | T190B116M100AS | 1.0 | 2.50 | 3.02 | 835 | 0187 | 0407 | 0627 | T290B116M100(1)S |
| 11.0 | B | 10 | T190B116K100AS | 1.0 | 2.50 | 3.02 | 835 | 0188 | 0408 | 0628 | T290B116K100(1)S |
| 11.0 | B | 5 | T190B116J100AS | 1.0 | 2.50 | 3.02 | 835 | 0189 | 0409 | 0629 | T290B116J100(1)S |
| 22.0 | B | 20 | T190B226M100AS | 1.0 | 3.75 | 2.26 | 965 | 0190 | 0410 | 0630 | T290B226M100(1)S |
| 22.0 | B | 10 | T190B226K100AS | 1.0 | 3.75 | 2.26 | 965 | 0191 | 0411 | 0631 | T290B226K100(1)S |
| 22.0 | B | 5 | T190B226J100AS | 1.0 | 3.75 | 2.26 | 965 | 0192 | 0412 | 0632 | T290B226J100(1)S |
| 30.0 | C | 20 | T190C306M100AS | 2.0 | 3.50 | 1.55 | 1240 | 0193 | 0413 | 0633 | T290C306M100(1)S |
| 30.0 | C | 10 | T190C306K100AS | 2.0 | 3.50 | 1.55 | 1240 | 0194 | 0414 | 0634 | T290C306K100(1)S |
| 30.0 | C | 5 | T190C306J100AS | 2.0 | 3.50 | 1.55 | 1240 | 0195 | 0415 | 0635 | T290C306J100(1)S |
| 43.0 | C | 20 | T190C436M100AS | 2.0 | 4.25 | 1.31 | 1335 | 0196 | 0416 | 0636 | T290C436M100(1)S |
| 43.0 | C | 10 | T190C436K100AS | 2.0 | 4.25 | 1.31 | 1335 | 0197 | 0417 | 0637 | T290C436K100(1)S |
| 43.0 | C | 5 | T190C436J100AS | 2.0 | 4.25 | 1.31 | 1335 | 0198 | 0418 | 0638 | T290C436J100(1)S |
| 86.0 | D | 20 | T190D866M100AS | 9.0 | 5.00 | 0.77 | 1800 | 0199 | 0419 | 0639 | T290D866M100(1)S |
| 86.0 | D | 10 | T190D866K100AS | 9.0 | 5.00 | 0.77 | 1800 | 0200 | 0420 | 0640 | T290D866K100(1)S |
| 125 Volt Rating at +85°C (85 Volt Rating at +125°C) | | | | | | | | | | | |
| 1.7 | A | 20 | T190A175M125AS | 1.0 | 1.00 | 7.81 | 415 | 0201 | 0421 | 0641 | T290A175M125(1)S |
| 1.7 | A | 10 | T190A175K125AS | 1.0 | 1.00 | 7.81 | 415 | 0202 | 0422 | 0642 | T290A175K125(1)S |
| 1.7 | A | 5 | T190A175J125AS | 1.0 | 1.00 | 7.81 | 415 | 0203 | 0423 | 0643 | T290A175J125(1)S |
| 3.6 | A | 20 | T190A365M125AS | 1.0 | 1.35 | 4.98 | 520 | 0204 | 0424 | 0644 | T290A365M125(1)S |
| 3.6 | A | 10 | T190A365K125AS | 1.0 | 1.35 | 4.98 | 520 | 0205 | 0425 | 0645 | T290A365K125(1)S |
| 3.6 | A | 5 | T190A365J125AS | 1.0 | 1.35 | 4.98 | 520 | 0206 | 0426 | 0646 | T290A365J125(1)S |
| 9.0 | B | 20 | T190B905M125AS | 1.0 | 2.50 | 3.69 | 755 | 0207 | 0427 | 0647 | T290B905M125(1)S |
| 9.0 | B | 10 | T190B905K125AS | 1.0 | 2.50 | 3.69 | 755 | 0208 | 0428 | 0648 | T290B905K125(1)S |
| 9.0 | B | 5 | T190B905J125AS | 1.0 | 2.50 | 3.69 | 755 | 0209 | 0429 | 0649 | T290B905J125(1)S |
| 14.0 | B | 20 | T190B146M125AS | 1.0 | 3.00 | 2.85 | 860 | 0210 | 0430 | 0650 | T290B146M125(1)S |
| 14.0 | B | 10 | T190B146K125AS | 1.0 | 3.00 | 2.85 | 860 | 0211 | 0431 | 0651 | T290B146K125(1)S |
| 14.0 | B | 5 | T190B146J125AS | 1.0 | 3.00 | 2.85 | 860 | 0212 | 0432 | 0652 | T290B146J125(1)S |
| 18.0 | C | 20 | T190C186M125AS | 2.0 | 2.50 | 1.85 | 1130 | 0213 | 0433 | 0653 | T290C186M125(1)S |
| 18.0 | C | 10 | T190C186K125AS | 2.0 | 2.50 | 1.85 | 1130 | 0214 | 0434 | 0654 | T290C186K125(1)S |
| 18.0 | C | 5 | T190C186J125AS | 2.0 | 2.50 | 1.85 | 1130 | 0215 | 0435 | 0655 | T290C186J125(1)S |
| 25.0 | C | 20 | T190C256M125AS | 2.0 | 3.00 | 1.59 | 1200 | 0216 | 0436 | 0656 | T290C256M125(1)S |
| 25.0 | C | 10 | T190C256K125AS | 2.0 | 3.00 | 1.59 | 1200 | 0217 | 0437 | 0657 | T290C256K125(1)S |
| 25.0 | C | 5 | T190C256J125AS | 2.0 | 3.00 | 1.59 | 1200 | 0218 | 0438 | 0658 | T290C256J125(1)S |
| 56.0 | D | 20 | T190D566M125AS | 10.0 | 3.25 | 0.77 | 1800 | 0219 | 0439 | 0659 | T290D566M125(1)S |
| 56.0 | D | 10 | T190D566K125AS | 10.0 | 3.25 | 0.77 | 1800 | 0220 | 0440 | 0660 | T290D566K125(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T191/T291 (CLR91) Ratings & Part Number Reference

| Cap μF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage μA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/31A (CLR91) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|--|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| | | | | | | | | 6 Volt Rating at +85°C (4 Volt Rating at +125°C) | | | |
| 220.0 | A | 20 | T191A227M006AS | 2.0 | 25.00 | 1.51 | 1000 | 0001 | 0089 | 0177 | T291A227M006(1)S |
| 220.0 | A | 10 | T191A227K006AS | 2.0 | 25.00 | 1.51 | 1000 | 0002 | 0090 | 0178 | T291A227K006(1)S |
| 820.0 | B | 20 | T191B827M006AS | 3.0 | 77.50 | 1.26 | 1500 | 0003 | 0091 | 0179 | T291B827M006(1)S |
| 820.0 | B | 10 | T191B827K006AS | 3.0 | 77.50 | 1.26 | 1500 | 0004 | 0092 | 0180 | T291B827K006(1)S |
| 1500.0 | C | 20 | T191C158M006AS | 5.0 | 86.00 | 0.76 | 1900 | 0005 | 0093 | 0181 | T291C158M006(1)S |
| 1500.0 | C | 10 | T191C158K006AS | 5.0 | 86.00 | 0.76 | 1900 | 0006 | 0094 | 0182 | T291C158K006(1)S |
| 2200.0 | D | 20 | T191D228M006AS | 6.0 | 85.00 | 0.52 | 2300 | 0007 | 0095 | 0183 | T291D228M006(1)S |
| 2200.0 | D | 10 | T191D228K006AS | 6.0 | 85.00 | 0.52 | 2300 | 0008 | 0096 | 0184 | T291D228K006(1)S |
| 8 Volt Rating at +85°C (5 Volt Rating at +125°C) | | | | | | | | | | | |
| 180.0 | A | 20 | T191A187M008AS | 2.0 | 20.50 | 1.51 | 1000 | 0009 | 0097 | 0185 | T291A187M008(1)S |
| 180.0 | A | 10 | T191A187K008AS | 2.0 | 20.50 | 1.51 | 1000 | 0010 | 0098 | 0186 | T291A187K008(1)S |
| 680.0 | B | 20 | T191B687M008AS | 3.0 | 65.00 | 1.27 | 1500 | 0011 | 0099 | 0187 | T291B687M008(1)S |
| 680.0 | B | 10 | T191B687K008AS | 3.0 | 65.00 | 1.27 | 1500 | 0012 | 0100 | 0188 | T291B687K008(1)S |
| 1500.0 | C | 20 | T191C158M008AS | 5.0 | 85.00 | 0.75 | 1900 | 0013 | 0101 | 0189 | T291C158M008(1)S |
| 1500.0 | C | 10 | T191C158K008AS | 5.0 | 85.00 | 0.75 | 1900 | 0014 | 0102 | 0190 | T291C158K008(1)S |
| 1800.0 | D | 20 | T191D188M008AS | 7.0 | 69.00 | 0.51 | 2300 | 0015 | 0103 | 0191 | T291D188M008(1)S |
| 1800.0 | D | 10 | T191D188K008AS | 7.0 | 69.00 | 0.51 | 2300 | 0016 | 0104 | 0192 | T291D188K008(1)S |
| 10 Volt Rating at +85°C (7 Volt Rating at +125°C) | | | | | | | | | | | |
| 150.0 | A | 20 | T191A157M010AS | 2.0 | 17.00 | 1.51 | 900 | 0017 | 0105 | 0193 | T291A157M010(1)S |
| 150.0 | A | 10 | T191A157K010AS | 2.0 | 17.00 | 1.51 | 900 | 0018 | 0106 | 0194 | T291A157K010(1)S |
| 560.0 | B | 20 | T191B567M010AS | 3.0 | 53.00 | 1.26 | 1450 | 0019 | 0107 | 0195 | T291B567M010(1)S |
| 560.0 | B | 10 | T191B567K010AS | 3.0 | 53.00 | 1.26 | 1450 | 0020 | 0108 | 0196 | T291B567K010(1)S |
| 1200.0 | C | 20 | T191C128M010AS | 5.0 | 68.50 | 0.76 | 1850 | 0021 | 0109 | 0197 | T291C128M010(1)S |
| 1200.0 | C | 10 | T191C128K010AS | 5.0 | 68.50 | 0.76 | 1850 | 0022 | 0110 | 0198 | T291C128K010(1)S |
| 1500.0 | D | 20 | T191D158M010AS | 7.0 | 57.00 | 0.51 | 2300 | 0023 | 0111 | 0199 | T291D158M010(1)S |
| 1500.0 | D | 10 | T191D158K010AS | 7.0 | 57.00 | 0.51 | 2300 | 0024 | 0112 | 0200 | T291D158K010(1)S |
| 15 Volt Rating at +85°C (10 Volt Rating at +125°C) | | | | | | | | | | | |
| 100.0 | A | 20 | T191A107M015AS | 2.0 | 15.00 | 1.99 | 900 | 0025 | 0113 | 0201 | T291A107M015(1)S |
| 100.0 | A | 10 | T191A107K015AS | 2.0 | 15.00 | 1.99 | 900 | 0026 | 0114 | 0202 | T291A107K015(1)S |
| 390.0 | B | 20 | T191B397M015AS | 3.0 | 37.00 | 1.26 | 1450 | 0027 | 0115 | 0203 | T291B397M015(1)S |
| 390.0 | B | 10 | T191B397K015AS | 3.0 | 37.00 | 1.26 | 1450 | 0028 | 0116 | 0204 | T291B397K015(1)S |
| 820.0 | C | 20 | T191C827M015AS | 6.0 | 55.50 | 0.90 | 1800 | 0029 | 0117 | 0205 | T291C827M015(1)S |
| 820.0 | C | 10 | T191C827K015AS | 6.0 | 55.50 | 0.90 | 1800 | 0030 | 0118 | 0206 | T291C827K015(1)S |
| 1000.0 | D | 20 | T191D108M015AS | 8.0 | 46.00 | 0.61 | 2300 | 0031 | 0119 | 0207 | T291D108M015(1)S |
| 1000.0 | D | 10 | T191D108K015AS | 8.0 | 46.00 | 0.61 | 2300 | 0032 | 0120 | 0208 | T291D108K015(1)S |
| 25 Volt Rating at +85°C (15 Volt Rating at +125°C) | | | | | | | | | | | |
| 68.0 | A | 20 | T191A686M025AS | 2.0 | 11.00 | 2.15 | 850 | 0033 | 0121 | 0209 | T291A686M025(1)S |
| 68.0 | A | 10 | T191A686K025AS | 2.0 | 11.00 | 2.15 | 850 | 0034 | 0122 | 0210 | T291A686K025(1)S |
| 270.0 | B | 20 | T191B277M025AS | 3.0 | 27.50 | 1.35 | 1400 | 0035 | 0123 | 0211 | T291B277M025(1)S |
| 270.0 | B | 10 | T191B277K025AS | 3.0 | 27.50 | 1.35 | 1400 | 0036 | 0124 | 0212 | T291B277K025(1)S |
| 560.0 | C | 20 | T191C567M025AS | 7.0 | 38.00 | 0.90 | 1750 | 0037 | 0125 | 0213 | T291C567M025(1)S |
| 560.0 | C | 10 | T191C567K025AS | 7.0 | 38.00 | 0.90 | 1750 | 0038 | 0126 | 0214 | T291C567K025(1)S |
| 680.0 | D | 20 | T191D687M025AS | 8.0 | 31.50 | 0.62 | 2100 | 0039 | 0127 | 0215 | T291D687M025(1)S |
| 680.0 | D | 10 | T191D687K025AS | 8.0 | 31.50 | 0.62 | 2100 | 0040 | 0128 | 0216 | T291D687K025(1)S |
| 30 Volt Rating at +85°C (20 Volt Rating at +125°C) | | | | | | | | | | | |
| 56.0 | A | 20 | T191A566M030AS | 2.0 | 11.00 | 2.61 | 800 | 0041 | 0129 | 0217 | T291A566M030(1)S |
| 56.0 | A | 10 | T191A566K030AS | 2.0 | 11.00 | 2.61 | 800 | 0042 | 0130 | 0218 | T291A566K030(1)S |
| 220.0 | B | 20 | T191B227M030AS | 3.0 | 21.00 | 1.27 | 1200 | 0043 | 0131 | 0219 | T291B227M030(1)S |
| 220.0 | B | 10 | T191B227K030AS | 3.0 | 21.00 | 1.27 | 1200 | 0044 | 0132 | 0220 | T291B227K030(1)S |
| 470.0 | C | 20 | T191C477M030AS | 8.0 | 32.00 | 0.91 | 1500 | 0045 | 0133 | 0221 | T291C477M030(1)S |
| 470.0 | C | 10 | T191C477K030AS | 8.0 | 32.00 | 0.91 | 1500 | 0046 | 0134 | 0222 | T291C477K030(1)S |
| 560.0 | D | 20 | T191D567M030AS | 9.0 | 27.50 | 0.65 | 2000 | 0047 | 0135 | 0223 | T291D567M030(1)S |
| 560.0 | D | 10 | T191D567K030AS | 9.0 | 27.50 | 0.65 | 2000 | 0048 | 0136 | 0224 | T291D567K030(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T191/T291 (CLR91) Ratings & Part Number Reference

| Cap μF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage μA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/31A (CLR91) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|---|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| 50 Volt Rating at +85°C (30 Volt Rating at +125°C) | | | | | | | | | | | |
| 33.0 | A | 20 | T191A336M050AS | 2.0 | 6.15 | 2.48 | 700 | 0049 | 0137 | 0225 | T291A336M050(1)S |
| 33.0 | A | 10 | T191A336K050AS | 2.0 | 6.15 | 2.48 | 700 | 0050 | 0138 | 0226 | T291A336K050(1)S |
| 120.0 | B | 20 | T191B127M050AS | 4.0 | 11.25 | 1.25 | 1200 | 0051 | 0139 | 0227 | T291B127M050(1)S |
| 120.0 | B | 10 | T191B127K050AS | 4.0 | 11.25 | 1.25 | 1200 | 0052 | 0140 | 0228 | T291B127K050(1)S |
| 270.0 | C | 20 | T191C277M050AS | 8.0 | 18.50 | 0.91 | 1450 | 0053 | 0141 | 0229 | T291C277M050(1)S |
| 270.0 | C | 10 | T191C277K050AS | 8.0 | 18.50 | 0.91 | 1450 | 0054 | 0142 | 0230 | T291C277K050(1)S |
| 330.0 | D | 20 | T191D337M050AS | 9.0 | 19.00 | 0.77 | 1900 | 0055 | 0143 | 0231 | T291D337M050(1)S |
| 330.0 | D | 10 | T191D337K050AS | 9.0 | 19.00 | 0.77 | 1900 | 0056 | 0144 | 0232 | T291D337K050(1)S |
| 60 Volt Rating at +85°C (40 Volt Rating at +125°C) | | | | | | | | | | | |
| 27.0 | A | 20 | T191A276M060AS | 3.0 | 5.10 | 2.51 | 700 | 0057 | 0145 | 0233 | T291A276M060(1)S |
| 27.0 | A | 10 | T191A276K060AS | 3.0 | 5.10 | 2.51 | 700 | 0058 | 0146 | 0234 | T291A276K060(1)S |
| 100.0 | B | 20 | T191B107M060AS | 4.0 | 9.50 | 1.26 | 1100 | 0059 | 0147 | 0235 | T291B107M060(1)S |
| 100.0 | B | 10 | T191B107K060AS | 4.0 | 9.50 | 1.26 | 1100 | 0060 | 0148 | 0236 | T291B107K060(1)S |
| 220.0 | C | 20 | T191C227M060AS | 8.0 | 15.00 | 0.91 | 1400 | 0061 | 0149 | 0237 | T291C227M060(1)S |
| 220.0 | C | 10 | T191C227K060AS | 8.0 | 15.00 | 0.91 | 1400 | 0062 | 0150 | 0238 | T291C227K060(1)S |
| 270.0 | D | 20 | T191D277M060AS | 9.0 | 13.50 | 0.67 | 1850 | 0063 | 0151 | 0239 | T291D277M060(1)S |
| 270.0 | D | 10 | T191D277K060AS | 9.0 | 13.50 | 0.67 | 1850 | 0064 | 0152 | 0240 | T291D277K060(1)S |
| 75 Volt Rating at +85°C (50 Volt Rating at +125°C) | | | | | | | | | | | |
| 22.0 | A | 20 | T191A226M075AS | 3.0 | 4.25 | 2.57 | 600 | 0065 | 0153 | 0241 | T291A226M075(1)S |
| 22.0 | A | 10 | T191A226K075AS | 3.0 | 4.25 | 2.57 | 600 | 0066 | 0154 | 0242 | T291A226K075(1)S |
| 82.0 | B | 20 | T191B826M075AS | 4.0 | 7.60 | 1.23 | 1000 | 0067 | 0155 | 0243 | T291B826M075(1)S |
| 82.0 | B | 10 | T191B826K075AS | 4.0 | 7.60 | 1.23 | 1000 | 0068 | 0156 | 0244 | T291B826K075(1)S |
| 180.0 | C | 20 | T191C187M075AS | 9.0 | 12.20 | 0.90 | 1300 | 0069 | 0157 | 0245 | T291C187M075(1)S |
| 180.0 | C | 10 | T191C187K075AS | 9.0 | 12.20 | 0.90 | 1300 | 0070 | 0158 | 0246 | T291C187K075(1)S |
| 220.0 | D | 20 | T191D227M075AS | 10.0 | 18.50 | 1.12 | 1800 | 0071 | 0159 | 0247 | T291D227M075(1)S |
| 220.0 | D | 10 | T191D227K075AS | 10.0 | 18.50 | 1.12 | 1800 | 0072 | 0160 | 0248 | T291D227K075(1)S |
| 100 Volt Rating at +85°C (65 Volt Rating at +125°C) | | | | | | | | | | | |
| 10.0 | A | 20 | T191A106M100AS | 3.0 | 2.25 | 2.99 | 800 | 0073 | 0161 | 0249 | T291A106M100(1)S |
| 10.0 | A | 10 | T191A106K100AS | 3.0 | 2.25 | 2.99 | 800 | 0074 | 0162 | 0250 | T291A106K100(1)S |
| 39.0 | B | 20 | T191B396M100AS | 5.0 | 5.20 | 1.77 | 1300 | 0075 | 0163 | 0251 | T291B396M100(1)S |
| 39.0 | B | 10 | T191B396K100AS | 5.0 | 5.20 | 1.77 | 1300 | 0076 | 0164 | 0252 | T291B396K100(1)S |
| 68.0 | C | 20 | T191C686M100AS | 10.0 | 5.65 | 1.11 | 1600 | 0077 | 0165 | 0253 | T291C686M100(1)S |
| 68.0 | C | 10 | T191C686K100AS | 10.0 | 5.65 | 1.11 | 1600 | 0078 | 0166 | 0254 | T291C686K100(1)S |
| 120.0 | D | 20 | T191D127M100AS | 12.0 | 12.50 | 1.38 | 2000 | 0079 | 0167 | 0255 | T291D127M100(1)S |
| 120.0 | D | 10 | T191D127K100AS | 12.0 | 12.50 | 1.38 | 2000 | 0080 | 0168 | 0256 | T291D127K100(1)S |
| 125 Volt Rating at +85°C (85 Volt Rating at +125°C) | | | | | | | | | | | |
| 6.8 | A | 20 | T191A685M125AS | 3.0 | 3.00 | 5.86 | 700 | 0081 | 0169 | 0257 | T291A685M125(1)S |
| 6.8 | A | 10 | T191A685K125AS | 3.0 | 3.00 | 5.86 | 700 | 0082 | 0170 | 0258 | T291A685K125(1)S |
| 27.0 | B | 20 | T191B276M125AS | 5.0 | 3.60 | 1.77 | 1200 | 0083 | 0171 | 0259 | T291B276M125(1)S |
| 27.0 | B | 10 | T191B276K125AS | 5.0 | 3.60 | 1.77 | 1200 | 0084 | 0172 | 0260 | T291B276K125(1)S |
| 47.0 | C | 20 | T191C476M125AS | 10.0 | 3.95 | 1.12 | 1500 | 0085 | 0173 | 0261 | T291C476M125(1)S |
| 47.0 | C | 10 | T191C476K125AS | 10.0 | 3.95 | 1.12 | 1500 | 0086 | 0174 | 0262 | T291C476K125(1)S |
| 82.0 | D | 20 | T191D826M125AS | 12.0 | 8.70 | 1.41 | 1900 | 0087 | 0175 | 0263 | T291D826M125(1)S |
| 82.0 | D | 10 | T191D826K125AS | 12.0 | 8.70 | 1.41 | 1900 | 0088 | 0176 | 0264 | T291D826K125(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)

(#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T192/T292 (CLR79) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/22F (CLR79) Capacitors Dash Number Reference (#) | | | KEMET Military Equivalent |
|---|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|--|--------|---------|------------------------------|
| | | | | | | | | Failure Rate (%/1000 Hrs) | | | |
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| 6 Volt Rating at +85°C (4 Volt Rating at +125°C) | | | | | | | | | | | |
| 30.0 | A | 20 | T192A306M006AS | 1.0 | 9.0 | 3.98 | 820 | 0001 | 0221 | 0441 | T292A306M006(1)S |
| 30.0 | A | 10 | T192A306K006AS | 1.0 | 9.0 | 3.98 | 820 | 0002 | 0222 | 0442 | T292A306K006(1)S |
| 30.0 | A | 5 | T192A306J006AS | 1.0 | 9.0 | 3.98 | 820 | 0003 | 0223 | 0443 | T292A306J006(1)S |
| 68.0 | A | 20 | T192A686M006AS | 1.0 | 15.0 | 3.16 | 960 | 0004 | 0224 | 0444 | T292A686M006(1)S |
| 68.0 | A | 10 | T192A686K006AS | 1.0 | 15.0 | 3.16 | 960 | 0005 | 0225 | 0445 | T292A686K006(1)S |
| 68.0 | A | 5 | T192A686J006AS | 1.0 | 15.0 | 3.16 | 960 | 0006 | 0226 | 0446 | T292A686J006(1)S |
| 140.0 | B | 20 | T192B147M006AS | 1.0 | 21.0 | 1.99 | 1200 | 0007 | 0227 | 0447 | T292B147M006(1)S |
| 140.0 | B | 10 | T192B147K006AS | 1.0 | 21.0 | 1.99 | 1200 | 0008 | 0228 | 0448 | T292B147K006(1)S |
| 140.0 | B | 5 | T192B147J006AS | 1.0 | 21.0 | 1.99 | 1200 | 0009 | 0229 | 0449 | T292B147J006(1)S |
| 270.0 | B | 20 | T192B277M006AS | 1.0 | 45.0 | 2.21 | 1375 | 0010 | 0230 | 0450 | T292B277M006(1)S |
| 270.0 | B | 10 | T192B277K006AS | 1.0 | 45.0 | 2.21 | 1375 | 0011 | 0231 | 0451 | T292B277K006(1)S |
| 270.0 | B | 5 | T192B277J006AS | 1.0 | 45.0 | 2.21 | 1375 | 0012 | 0232 | 0452 | T292B277J006(1)S |
| 330.0 | C | 20 | T192C337M006AS | 2.0 | 36.0 | 1.45 | 1800 | 0013 | 0233 | 0453 | T292C337M006(1)S |
| 330.0 | C | 10 | T192C337K006AS | 2.0 | 36.0 | 1.45 | 1800 | 0014 | 0234 | 0454 | T292C337K006(1)S |
| 330.0 | C | 5 | T192C337J006AS | 2.0 | 36.0 | 1.45 | 1800 | 0015 | 0235 | 0455 | T292C337J006(1)S |
| 560.0 | C | 20 | T192C567M006AS | 2.0 | 55.0 | 1.30 | 1900 | 0016 | 0236 | 0456 | T292C567M006(1)S |
| 560.0 | C | 10 | T192C567K006AS | 2.0 | 55.0 | 1.30 | 1900 | 0017 | 0237 | 0457 | T292C567K006(1)S |
| 560.0 | C | 5 | T192C567J006AS | 2.0 | 55.0 | 1.30 | 1900 | 0018 | 0238 | 0458 | T292C567J006(1)S |
| 1200.0 | D | 20 | T192D128M006AS | 3.0 | 90.0 | 1.00 | 2265 | 0019 | 0239 | 0459 | T292D128M006(1)S |
| 1200.0 | D | 10 | T192D128K006AS | 3.0 | 90.0 | 1.00 | 2265 | 0020 | 0240 | 0460 | T292D128K006(1)S |
| 8 Volt Rating at +85°C (5 Volt Rating at +125°C) | | | | | | | | | | | |
| 25.0 | A | 20 | T192A256M008AS | 1.0 | 7.5 | 3.98 | 820 | 0021 | 0241 | 0461 | T292A256M008(1)S |
| 25.0 | A | 10 | T192A256K008AS | 1.0 | 7.5 | 3.98 | 820 | 0022 | 0242 | 0462 | T292A256K008(1)S |
| 25.0 | A | 5 | T192A256J008AS | 1.0 | 7.5 | 3.98 | 820 | 0023 | 0243 | 0463 | T292A256J008(1)S |
| 56.0 | A | 20 | T192A566M008AS | 1.0 | 14.0 | 3.32 | 900 | 0024 | 0244 | 0464 | T292A566M008(1)S |
| 56.0 | A | 10 | T192A566K008AS | 1.0 | 14.0 | 3.32 | 900 | 0025 | 0245 | 0465 | T292A566K008(1)S |
| 56.0 | A | 5 | T192A566J008AS | 1.0 | 14.0 | 3.32 | 900 | 0026 | 0246 | 0466 | T292A566J008(1)S |
| 120.0 | B | 20 | T192B127M008AS | 1.0 | 20.0 | 2.21 | 1220 | 0027 | 0247 | 0467 | T292B127M008(1)S |
| 120.0 | B | 10 | T192B127K008AS | 1.0 | 20.0 | 2.21 | 1220 | 0028 | 0248 | 0468 | T292B127K008(1)S |
| 120.0 | B | 5 | T192B127J008AS | 1.0 | 20.0 | 2.21 | 1220 | 0029 | 0249 | 0469 | T292B127J008(1)S |
| 220.0 | B | 20 | T192B227M008AS | 1.0 | 37.0 | 2.23 | 1370 | 0030 | 0250 | 0470 | T292B227M008(1)S |
| 220.0 | B | 10 | T192B227K008AS | 1.0 | 37.0 | 2.23 | 1370 | 0031 | 0251 | 0471 | T292B227K008(1)S |
| 220.0 | B | 5 | T192B227J008AS | 1.0 | 37.0 | 2.23 | 1370 | 0032 | 0252 | 0472 | T292B227J008(1)S |
| 290.0 | C | 20 | T192C297M008AS | 2.0 | 34.0 | 1.56 | 1770 | 0033 | 0253 | 0473 | T292C297M008(1)S |
| 290.0 | C | 10 | T192C297K008AS | 2.0 | 34.0 | 1.56 | 1770 | 0034 | 0254 | 0474 | T292C297K008(1)S |
| 290.0 | C | 5 | T192C297J008AS | 2.0 | 34.0 | 1.56 | 1770 | 0035 | 0255 | 0475 | T292C297J008(1)S |
| 430.0 | C | 20 | T192C437M008AS | 2.0 | 46.0 | 1.42 | 1825 | 0036 | 0256 | 0476 | T292C437M008(1)S |
| 430.0 | C | 10 | T192C437K008AS | 2.0 | 46.0 | 1.42 | 1825 | 0037 | 0257 | 0477 | T292C437K008(1)S |
| 430.0 | C | 5 | T192C437J008AS | 2.0 | 46.0 | 1.42 | 1825 | 0038 | 0258 | 0478 | T292C437J008(1)S |
| 850.0 | D | 20 | T192D857M008AS | 4.0 | 60.0 | 0.94 | 2330 | 0039 | 0259 | 0479 | T292D857M008(1)S |
| 850.0 | D | 10 | T192D857K008AS | 4.0 | 60.0 | 0.94 | 2330 | 0040 | 0260 | 0480 | T292D857K008(1)S |
| 10 Volt Rating at +85°C (7 Volt Rating at +125°C) | | | | | | | | | | | |
| 20.0 | A | 20 | T192A206M010AS | 1.0 | 6.0 | 3.98 | 820 | 0041 | 0261 | 0481 | T292A206M010(1)S |
| 20.0 | A | 10 | T192A206K010AS | 1.0 | 6.0 | 3.98 | 820 | 0042 | 0262 | 0482 | T292A206K010(1)S |
| 20.0 | A | 5 | T192A206J010AS | 1.0 | 6.0 | 3.98 | 820 | 0043 | 0263 | 0483 | T292A206J010(1)S |
| 47.0 | A | 20 | T192A476M010AS | 1.0 | 13.0 | 3.67 | 855 | 0044 | 0264 | 0484 | T292A476M010(1)S |
| 47.0 | A | 10 | T192A476K010AS | 1.0 | 13.0 | 3.67 | 855 | 0045 | 0265 | 0485 | T292A476K010(1)S |
| 47.0 | A | 5 | T192A476J010AS | 1.0 | 13.0 | 3.67 | 855 | 0046 | 0266 | 0486 | T292A476J010(1)S |
| 100.0 | B | 20 | T192B107M010AS | 1.0 | 15.0 | 1.99 | 1200 | 0047 | 0267 | 0487 | T292B107M010(1)S |
| 100.0 | B | 10 | T192B107K010AS | 1.0 | 15.0 | 1.99 | 1200 | 0048 | 0268 | 0488 | T292B107K010(1)S |
| 100.0 | B | 5 | T192B107J010AS | 1.0 | 15.0 | 1.99 | 1200 | 0049 | 0269 | 0489 | T292B107J010(1)S |
| 180.0 | B | 20 | T192B187M010AS | 1.0 | 30.0 | 2.21 | 1365 | 0050 | 0270 | 0490 | T292B187M010(1)S |
| 180.0 | B | 10 | T192B187K010AS | 1.0 | 30.0 | 2.21 | 1365 | 0051 | 0271 | 0491 | T292B187K010(1)S |
| 180.0 | B | 5 | T192B187J010AS | 1.0 | 30.0 | 2.21 | 1365 | 0052 | 0272 | 0492 | T292B187J010(1)S |
| 250.0 | C | 20 | T192C257M010AS | 2.0 | 30.0 | 1.59 | 1720 | 0053 | 0273 | 0493 | T292C257M010(1)S |
| 250.0 | C | 10 | T192C257K010AS | 2.0 | 30.0 | 1.59 | 1720 | 0054 | 0274 | 0494 | T292C257K010(1)S |
| 250.0 | C | 5 | T192C257J010AS | 2.0 | 30.0 | 1.59 | 1720 | 0055 | 0275 | 0495 | T292C257J010(1)S |
| 390.0 | C | 20 | T192C397M010AS | 2.0 | 44.0 | 1.50 | 1800 | 0056 | 0276 | 0496 | T292C397M010(1)S |
| 390.0 | C | 10 | T192C397K010AS | 2.0 | 44.0 | 1.50 | 1800 | 0057 | 0277 | 0497 | T292C397K010(1)S |
| 390.0 | C | 5 | T192C397J010AS | 2.0 | 44.0 | 1.50 | 1800 | 0058 | 0278 | 0498 | T292C397J010(1)S |
| 750.0 | D | 20 | T192D757M010AS | 4.0 | 50.0 | 0.88 | 2360 | 0059 | 0279 | 0499 | T292D757M010(1)S |
| 750.0 | D | 10 | T192D757K010AS | 4.0 | 50.0 | 0.88 | 2360 | 0060 | 0280 | 0500 | T292D757K010(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)

(#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T192/T292 (CLR79) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/22F (CLR79) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|--|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| | | | | | | | | 15 Volt Rating at +85°C (10 Volt Rating at +125°C) | | | |
| 15.0 | A | 20 | T192A156M015AS | 1.0 | 5.0 | 4.42 | 780 | 0061 | 0281 | 0501 | T292A156M015(1)S |
| 15.0 | A | 10 | T192A156K015AS | 1.0 | 5.0 | 4.42 | 780 | 0062 | 0282 | 0502 | T292A156K015(1)S |
| 15.0 | A | 5 | T192A156J015AS | 1.0 | 5.0 | 4.42 | 780 | 0063 | 0283 | 0503 | T292A156J015(1)S |
| 33.0 | A | 20 | T192A336M015AS | 1.0 | 10.0 | 4.02 | 820 | 0064 | 0284 | 0504 | T292A336M015(1)S |
| 33.0 | A | 10 | T192A336K015AS | 1.0 | 10.0 | 4.02 | 820 | 0065 | 0285 | 0505 | T292A336K015(1)S |
| 33.0 | A | 5 | T192A336J015AS | 1.0 | 10.0 | 4.02 | 820 | 0066 | 0286 | 0506 | T292A336J015(1)S |
| 70.0 | B | 20 | T192B706M015AS | 1.0 | 13.0 | 2.46 | 1150 | 0067 | 0287 | 0507 | T292B706M015(1)S |
| 70.0 | B | 10 | T192B706K015AS | 1.0 | 13.0 | 2.46 | 1150 | 0068 | 0288 | 0508 | T292B706K015(1)S |
| 70.0 | B | 5 | T192B706J015AS | 1.0 | 13.0 | 2.46 | 1150 | 0069 | 0289 | 0509 | T292B706J015(1)S |
| 120.0 | B | 20 | T192B127M015AS | 1.0 | 18.0 | 1.99 | 1450 | 0070 | 0290 | 0510 | T292B127M015(1)S |
| 120.0 | B | 10 | T192B127K015AS | 1.0 | 18.0 | 1.99 | 1450 | 0071 | 0291 | 0511 | T292B127K015(1)S |
| 120.0 | B | 5 | T192B127J015AS | 1.0 | 18.0 | 1.99 | 1450 | 0072 | 0292 | 0512 | T292B127J015(1)S |
| 170.0 | C | 20 | T192C177M015AS | 2.0 | 25.0 | 1.95 | 1480 | 0073 | 0293 | 0513 | T292C177M015(1)S |
| 170.0 | C | 10 | T192C177K015AS | 2.0 | 25.0 | 1.95 | 1480 | 0074 | 0294 | 0514 | T292C177K015(1)S |
| 170.0 | C | 5 | T192C177J015AS | 2.0 | 25.0 | 1.95 | 1480 | 0075 | 0295 | 0515 | T292C177J015(1)S |
| 270.0 | C | 20 | T192C277M015AS | 2.0 | 32.0 | 1.57 | 1740 | 0076 | 0296 | 0516 | T292C277M015(1)S |
| 270.0 | C | 10 | T192C277K015AS | 2.0 | 32.0 | 1.57 | 1740 | 0077 | 0297 | 0517 | T292C277K015(1)S |
| 270.0 | C | 5 | T192C277J015AS | 2.0 | 32.0 | 1.57 | 1740 | 0078 | 0298 | 0518 | T292C277J015(1)S |
| 540.0 | D | 20 | T192D547M015AS | 6.0 | 40.0 | 0.98 | 2330 | 0079 | 0299 | 0519 | T292D547M015(1)S |
| 540.0 | D | 10 | T192D547K015AS | 6.0 | 40.0 | 0.98 | 2330 | 0080 | 0300 | 0520 | T292D547K015(1)S |
| 25 Volt Rating at +85°C - 15 Volt Rating at +125°C | | | | | | | | | | | |
| 10.0 | A | 20 | T192A106M025AS | 1.0 | 4.0 | 5.31 | 715 | 0081 | 0301 | 0521 | T292A106M025(1)S |
| 10.0 | A | 10 | T192A106K025AS | 1.0 | 4.0 | 5.31 | 715 | 0082 | 0302 | 0522 | T292A106K025(1)S |
| 10.0 | A | 5 | T192A106J025AS | 1.0 | 4.0 | 5.31 | 715 | 0083 | 0303 | 0523 | T292A106J025(1)S |
| 22.0 | A | 20 | T192A226M025AS | 1.0 | 6.6 | 3.98 | 825 | 0084 | 0304 | 0524 | T292A226M025(1)S |
| 22.0 | A | 10 | T192A226K025AS | 1.0 | 6.6 | 3.98 | 825 | 0085 | 0305 | 0525 | T292A226K025(1)S |
| 22.0 | A | 5 | T192A226J025AS | 1.0 | 6.6 | 3.98 | 825 | 0086 | 0306 | 0526 | T292A226J025(1)S |
| 50.0 | B | 20 | T192B506M025AS | 1.0 | 11.0 | 2.92 | 1130 | 0087 | 0307 | 0527 | T292B506M025(1)S |
| 50.0 | B | 10 | T192B506K025AS | 1.0 | 11.0 | 2.92 | 1130 | 0088 | 0308 | 0528 | T292B506K025(1)S |
| 50.0 | B | 5 | T192B506J025AS | 1.0 | 11.0 | 2.92 | 1130 | 0089 | 0309 | 0529 | T292B506J025(1)S |
| 100.0 | B | 20 | T192B107M025AS | 1.0 | 15.0 | 1.99 | 1435 | 0090 | 0310 | 0530 | T292B107M025(1)S |
| 100.0 | B | 10 | T192B107K025AS | 1.0 | 15.0 | 1.99 | 1435 | 0091 | 0311 | 0531 | T292B107K025(1)S |
| 100.0 | B | 5 | T192B107J025AS | 1.0 | 15.0 | 1.99 | 1435 | 0092 | 0312 | 0532 | T292B107J025(1)S |
| 120.0 | C | 20 | T192C127M025AS | 2.0 | 21.0 | 2.32 | 1450 | 0093 | 0313 | 0533 | T292C127M025(1)S |
| 120.0 | C | 10 | T192C127K025AS | 2.0 | 21.0 | 2.32 | 1450 | 0094 | 0314 | 0534 | T292C127K025(1)S |
| 120.0 | C | 5 | T192C127J025AS | 2.0 | 21.0 | 2.32 | 1450 | 0095 | 0315 | 0535 | T292C127J025(1)S |
| 180.0 | C | 20 | T192C187M025AS | 2.0 | 26.0 | 1.92 | 1525 | 0096 | 0316 | 0536 | T292C187M025(1)S |
| 180.0 | C | 10 | T192C187K025AS | 2.0 | 26.0 | 1.92 | 1525 | 0097 | 0317 | 0537 | T292C187K025(1)S |
| 180.0 | C | 5 | T192C187J025AS | 2.0 | 26.0 | 1.92 | 1525 | 0098 | 0318 | 0538 | T292C187J025(1)S |
| 350.0 | D | 20 | T192D357M025AS | 7.0 | 35.0 | 1.33 | 1970 | 0099 | 0319 | 0539 | T292D357M025(1)S |
| 350.0 | D | 10 | T192D357K025AS | 7.0 | 35.0 | 1.33 | 1970 | 0100 | 0320 | 0540 | T292D357K025(1)S |
| 30 Volt Rating at +85°C - 20 Volt Rating at +125°C | | | | | | | | | | | |
| 8.0 | A | 20 | T192A805M030AS | 1.0 | 4.0 | 6.64 | 640 | 0101 | 0321 | 0541 | T292A805M030(1)S |
| 8.0 | A | 10 | T192A805K030AS | 1.0 | 4.0 | 6.64 | 640 | 0102 | 0322 | 0542 | T292A805K030(1)S |
| 8.0 | A | 5 | T192A805J030AS | 1.0 | 4.0 | 6.64 | 640 | 0103 | 0323 | 0543 | T292A805J030(1)S |
| 15.0 | A | 20 | T192A156M030AS | 1.0 | 5.0 | 4.42 | 780 | 0104 | 0324 | 0544 | T292A156M030(1)S |
| 15.0 | A | 10 | T192A156K030AS | 1.0 | 5.0 | 4.42 | 780 | 0105 | 0325 | 0545 | T292A156K030(1)S |
| 15.0 | A | 5 | T192A156J030AS | 1.0 | 5.0 | 4.42 | 780 | 0106 | 0326 | 0546 | T292A156J030(1)S |
| 40.0 | B | 20 | T192B406M030AS | 1.0 | 10.0 | 3.32 | 1120 | 0107 | 0327 | 0547 | T292B406M030(1)S |
| 40.0 | B | 10 | T192B406K030AS | 1.0 | 10.0 | 3.32 | 1120 | 0108 | 0328 | 0548 | T292B406K030(1)S |
| 40.0 | B | 5 | T192B406J030AS | 1.0 | 10.0 | 3.32 | 1120 | 0109 | 0329 | 0549 | T292B406J030(1)S |
| 68.0 | B | 20 | T192B686M030AS | 1.0 | 13.0 | 2.54 | 1285 | 0110 | 0330 | 0550 | T292B686M030(1)S |
| 68.0 | B | 10 | T192B686K030AS | 1.0 | 13.0 | 2.54 | 1285 | 0111 | 0331 | 0551 | T292B686K030(1)S |
| 68.0 | B | 5 | T192B686J030AS | 1.0 | 13.0 | 2.54 | 1285 | 0112 | 0332 | 0552 | T292B686J030(1)S |
| 100.0 | C | 20 | T192C107M030AS | 2.0 | 17.0 | 2.26 | 1450 | 0113 | 0333 | 0553 | T292C107M030(1)S |
| 100.0 | C | 10 | T192C107K030AS | 2.0 | 17.0 | 2.26 | 1450 | 0114 | 0334 | 0554 | T292C107K030(1)S |
| 100.0 | C | 5 | T192C107J030AS | 2.0 | 17.0 | 2.26 | 1450 | 0115 | 0335 | 0555 | T292C107J030(1)S |
| 150.0 | C | 20 | T192C157M030AS | 2.0 | 23.0 | 2.03 | 1525 | 0116 | 0336 | 0556 | T292C157M030(1)S |
| 150.0 | C | 10 | T192C157K030AS | 2.0 | 23.0 | 2.03 | 1525 | 0117 | 0337 | 0557 | T292C157K030(1)S |
| 150.0 | C | 5 | T192C157J030AS | 2.0 | 23.0 | 2.03 | 1525 | 0118 | 0338 | 0558 | T292C157J030(1)S |
| 300.0 | D | 20 | T192D307M030AS | 8.0 | 31.0 | 1.37 | 1950 | 0119 | 0339 | 0559 | T292D307M030(1)S |
| 300.0 | D | 10 | T192D307K030AS | 8.0 | 31.0 | 1.37 | 1950 | 0120 | 0340 | 0560 | T292D307K030(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T192/T292 (CLR79) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/22F (CLR79) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|--|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| | | | | | | | | 35 Volt Rating at +85°C (22 Volt Rating at +125°C) | | | |
| 7.0 | A | 10,20,5 | T192A705(2)035AS | 0.75 | 7.4 | 7.0 | 620 | N/A | N/A | N/A | N/A |
| 15.0 | A | 10,20,5 | T192A156(2)035AS | 0.75 | 14.0 | 6.2 | 660 | N/A | N/A | N/A | N/A |
| 35.0 | B | 10,20,5 | T192B356(2)035AS | 1.00 | 22.2 | 4.2 | 1000 | N/A | N/A | N/A | N/A |
| 68.0 | B | 10,20,5 | T192B686(2)035AS | 1.00 | 30.0 | 2.9 | 1195 | N/A | N/A | N/A | N/A |
| 82.0 | C | 10,20,5 | T192C826(2)035AS | 2.00 | 31.0 | 2.5 | 1400 | N/A | N/A | N/A | N/A |
| 120.0 | C | 10,20,5 | T192C127(2)035AS | 2.00 | 43.4 | 2.4 | 1490 | N/A | N/A | N/A | N/A |
| 270.0 | D | 10,20,5 | T192D277(2)035AS | 3.00 | 57.0 | 1.4 | 1950 | N/A | N/A | N/A | N/A |
| 50 Volt Rating at +85°C (30 Volt Rating at +125°C) | | | | | | | | | | | |
| 5.0 | A | 20 | T192A505M050AS | 1.0 | 3.0 | 7.96 | 580 | 0121 | 0341 | 0561 | T292A505M050(1)S |
| 5.0 | A | 10 | T192A505K050AS | 1.0 | 3.0 | 7.96 | 580 | 0122 | 0342 | 0562 | T292A505K050(1)S |
| 5.0 | A | 5 | T192A505J050AS | 1.0 | 3.0 | 7.96 | 580 | 0123 | 0343 | 0563 | T292A505J050(1)S |
| 10.0 | A | 20 | T192A106M050AS | 1.0 | 4.0 | 5.31 | 715 | 0124 | 0344 | 0564 | T292A106M050(1)S |
| 10.0 | A | 10 | T192A106K050AS | 1.0 | 4.0 | 5.31 | 715 | 0125 | 0345 | 0565 | T292A106K050(1)S |
| 10.0 | A | 5 | T192A106J050AS | 1.0 | 4.0 | 5.31 | 715 | 0126 | 0346 | 0566 | T292A106J050(1)S |
| 25.0 | B | 20 | T192B256M050AS | 1.0 | 8.0 | 4.25 | 1005 | 0127 | 0347 | 0567 | T292B256M050(1)S |
| 25.0 | B | 10 | T192B256K050AS | 1.0 | 8.0 | 4.25 | 1005 | 0128 | 0348 | 0568 | T292B256K050(1)S |
| 25.0 | B | 5 | T192B256J050AS | 1.0 | 8.0 | 4.25 | 1005 | 0129 | 0349 | 0569 | T292B256J050(1)S |
| 47.0 | B | 20 | T192B476M050AS | 1.0 | 11.0 | 3.11 | 1155 | 0130 | 0350 | 0570 | T292B476M050(1)S |
| 47.0 | B | 10 | T192B476K050AS | 1.0 | 11.0 | 3.11 | 1155 | 0131 | 0351 | 0571 | T292B476K050(1)S |
| 47.0 | B | 5 | T192B476J050AS | 1.0 | 11.0 | 3.11 | 1155 | 0132 | 0352 | 0572 | T292B476J050(1)S |
| 60.0 | C | 20 | T192C606M050AS | 2.0 | 12.0 | 2.65 | 1335 | 0133 | 0353 | 0573 | T292C606M050(1)S |
| 60.0 | C | 10 | T192C606K050AS | 2.0 | 12.0 | 2.65 | 1335 | 0134 | 0354 | 0574 | T292C606K050(1)S |
| 60.0 | C | 5 | T192C606J050AS | 2.0 | 12.0 | 2.65 | 1335 | 0135 | 0355 | 0575 | T292C606J050(1)S |
| 82.0 | C | 20 | T192C826M050AS | 2.0 | 15.0 | 2.43 | 1400 | 0136 | 0356 | 0576 | T292C826M050(1)S |
| 82.0 | C | 10 | T192C826K050AS | 2.0 | 15.0 | 2.43 | 1400 | 0137 | 0357 | 0577 | T292C826K050(1)S |
| 82.0 | C | 5 | T192C826J050AS | 2.0 | 15.0 | 2.43 | 1400 | 0138 | 0358 | 0578 | T292C826J050(1)S |
| 160.0 | D | 20 | T192D167M050AS | 8.0 | 17.0 | 1.41 | 1900 | 0139 | 0359 | 0579 | T292D167M050(1)S |
| 160.0 | D | 10 | T192D167K050AS | 8.0 | 17.0 | 1.41 | 1900 | 0140 | 0360 | 0580 | T292D167K050(1)S |
| 60 Volt Rating at +85°C (40 Volt Rating at +125°C) | | | | | | | | | | | |
| 4.0 | A | 20 | T192A405M060AS | 1.0 | 2.8 | 9.29 | 525 | 0141 | 0361 | 0581 | T292A405M060(1)S |
| 4.0 | A | 10 | T192A405K060AS | 1.0 | 2.8 | 9.29 | 525 | 0142 | 0362 | 0582 | T292A405K060(1)S |
| 4.0 | A | 5 | T192A405J060AS | 1.0 | 2.8 | 9.29 | 525 | 0143 | 0363 | 0583 | T292A405J060(1)S |
| 8.2 | A | 20 | T192A825M060AS | 1.0 | 4.0 | 6.47 | 625 | 0144 | 0364 | 0584 | T292A825M060(1)S |
| 8.2 | A | 10 | T192A825K060AS | 1.0 | 4.0 | 6.47 | 625 | 0145 | 0365 | 0585 | T292A825K060(1)S |
| 8.2 | A | 5 | T192A825J060AS | 1.0 | 4.0 | 6.47 | 625 | 0146 | 0366 | 0586 | T292A825J060(1)S |
| 20.0 | B | 20 | T192B206M060AS | 1.0 | 7.0 | 4.64 | 930 | 0147 | 0367 | 0587 | T292B206M060(1)S |
| 20.0 | B | 10 | T192B206K060AS | 1.0 | 7.0 | 4.64 | 930 | 0148 | 0368 | 0588 | T292B206K060(1)S |
| 20.0 | B | 5 | T192B206J060AS | 1.0 | 7.0 | 4.64 | 930 | 0149 | 0369 | 0589 | T292B206J060(1)S |
| 39.0 | B | 20 | T192B396M060AS | 1.0 | 10.0 | 3.40 | 1110 | 0150 | 0370 | 0590 | T292B396M060(1)S |
| 39.0 | B | 10 | T192B396K060AS | 1.0 | 10.0 | 3.40 | 1110 | 0151 | 0371 | 0591 | T292B396K060(1)S |
| 39.0 | B | 5 | T192B396J060AS | 1.0 | 10.0 | 3.40 | 1110 | 0152 | 0372 | 0592 | T292B396J060(1)S |
| 50.0 | C | 20 | T192C506M060AS | 2.0 | 10.0 | 2.65 | 1330 | 0153 | 0373 | 0593 | T292C506M060(1)S |
| 50.0 | C | 10 | T192C506K060AS | 2.0 | 10.0 | 2.65 | 1330 | 0154 | 0374 | 0594 | T292C506K060(1)S |
| 50.0 | C | 5 | T192C506J060AS | 2.0 | 10.0 | 2.65 | 1330 | 0155 | 0375 | 0595 | T292C506J060(1)S |
| 68.0 | C | 20 | T192C686M060AS | 2.0 | 13.0 | 2.54 | 1365 | 0156 | 0376 | 0596 | T292C686M060(1)S |
| 68.0 | C | 10 | T192C686K060AS | 2.0 | 13.0 | 2.54 | 1365 | 0157 | 0377 | 0597 | T292C686K060(1)S |
| 68.0 | C | 5 | T192C686J060AS | 2.0 | 13.0 | 2.54 | 1365 | 0158 | 0378 | 0598 | T292C686J060(1)S |
| 140.0 | D | 20 | T192D147M060AS | 8.0 | 16.0 | 1.52 | 1850 | 0159 | 0379 | 0599 | T292D147M060(1)S |
| 140.0 | D | 10 | T192D147K060AS | 8.0 | 16.0 | 1.52 | 1850 | 0160 | 0380 | 0600 | T292D147K060(1)S |
| 75 Volt Rating at +85°C (50 Volt Rating at +125°C) | | | | | | | | | | | |
| 3.5 | A | 20 | T192A355M075AS | 1.0 | 2.5 | 9.48 | 525 | 0161 | 0381 | 0601 | T292A355M075(1)S |
| 3.5 | A | 10 | T192A355K075AS | 1.0 | 2.5 | 9.48 | 525 | 0162 | 0382 | 0602 | T292A355K075(1)S |
| 3.5 | A | 5 | T192A355J075AS | 1.0 | 2.5 | 9.48 | 525 | 0163 | 0383 | 0603 | T292A355J075(1)S |
| 6.8 | A | 20 | T192A685M075AS | 1.0 | 3.5 | 6.83 | 610 | 0164 | 0384 | 0604 | T292A685M075(1)S |
| 6.8 | A | 10 | T192A685K075AS | 1.0 | 3.5 | 6.83 | 610 | 0165 | 0385 | 0605 | T292A685K075(1)S |
| 6.8 | A | 5 | T192A685J075AS | 1.0 | 3.5 | 6.83 | 610 | 0166 | 0386 | 0606 | T292A685J075(1)S |
| 15.0 | B | 20 | T192B156M075AS | 1.0 | 6.0 | 5.31 | 890 | 0167 | 0387 | 0607 | T292B156M075(1)S |
| 15.0 | B | 10 | T192B156K075AS | 1.0 | 6.0 | 5.31 | 890 | 0168 | 0388 | 0608 | T292B156K075(1)S |
| 15.0 | B | 5 | T192B156J075AS | 1.0 | 6.0 | 5.31 | 890 | 0169 | 0389 | 0609 | T292B156J075(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T192/T292 (CLR79) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/22F (CLR79) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|---|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| | | | | | | | | Continued | | | |
| 75 Volt Rating at +85°C (50 Volt Rating at +125°C) | | | | | | | | | | | |
| 33.0 | B | 20 | T192B336M075AS | 1.0 | 10.0 | 4.02 | 1000 | 0170 | 0390 | 0610 | T292B336M075(1)S |
| 33.0 | B | 10 | T192B336K075AS | 1.0 | 10.0 | 4.02 | 1000 | 0171 | 0391 | 0611 | T292B336K075(1)S |
| 33.0 | B | 5 | T192B336J075AS | 1.0 | 10.0 | 4.02 | 1000 | 0172 | 0392 | 0612 | T292B336J075(1)S |
| 40.0 | C | 20 | T192C406M075AS | 2.0 | 9.0 | 2.99 | 1250 | 0173 | 0393 | 0613 | T292C406M075(1)S |
| 40.0 | C | 10 | T192C406K075AS | 2.0 | 9.0 | 2.99 | 1250 | 0174 | 0394 | 0614 | T292C406K075(1)S |
| 40.0 | C | 5 | T192C406J075AS | 2.0 | 9.0 | 2.99 | 1250 | 0175 | 0395 | 0615 | T292C406J075(1)S |
| 56.0 | C | 20 | T192C566M075AS | 2.0 | 11.0 | 2.61 | 1335 | 0176 | 0396 | 0616 | T292C566M075(1)S |
| 56.0 | C | 10 | T192C566K075AS | 2.0 | 11.0 | 2.61 | 1335 | 0177 | 0397 | 0617 | T292C566K075(1)S |
| 56.0 | C | 5 | T192C566J075AS | 2.0 | 11.0 | 2.61 | 1335 | 0178 | 0398 | 0618 | T292C566J075(1)S |
| 110.0 | D | 20 | T192D117M075AS | 9.0 | 12.0 | 1.45 | 1850 | 0179 | 0399 | 0619 | T292D117M075(1)S |
| 110.0 | D | 10 | T192D117K075AS | 9.0 | 12.0 | 1.45 | 1850 | 0180 | 0400 | 0620 | T292D117K075(1)S |
| 100 Volt Rating at +85°C (65 Volt Rating at +125°C) | | | | | | | | | | | |
| 2.5 | A | 20 | T192A255M100AS | 1.0 | 2.0 | 10.62 | 505 | 0181 | 0401 | 0621 | T292A255M100(1)S |
| 2.5 | A | 10 | T192A255K100AS | 1.0 | 2.0 | 10.62 | 505 | 0182 | 0402 | 0622 | T292A255K100(1)S |
| 2.5 | A | 5 | T192A255J100AS | 1.0 | 2.0 | 10.62 | 505 | 0183 | 0403 | 0623 | T292A255J100(1)S |
| 4.7 | A | 20 | T192A475M100AS | 1.0 | 3.0 | 8.47 | 565 | 0184 | 0404 | 0624 | T292A475M100(1)S |
| 4.7 | A | 10 | T192A475K100AS | 1.0 | 3.0 | 8.47 | 565 | 0185 | 0405 | 0625 | T292A475K100(1)S |
| 4.7 | A | 5 | T192A475J100AS | 1.0 | 3.0 | 8.47 | 565 | 0186 | 0406 | 0626 | T292A475J100(1)S |
| 11.0 | B | 20 | T192B116M100AS | 1.0 | 5.0 | 6.03 | 835 | 0187 | 0407 | 0627 | T292B116M100(1)S |
| 11.0 | B | 10 | T192B116K100AS | 1.0 | 5.0 | 6.03 | 835 | 0188 | 0408 | 0628 | T292B116K100(1)S |
| 11.0 | B | 5 | T192B116J100AS | 1.0 | 5.0 | 6.03 | 835 | 0189 | 0409 | 0629 | T292B116J100(1)S |
| 22.0 | B | 20 | T192B226M100AS | 1.0 | 7.5 | 4.52 | 965 | 0190 | 0410 | 0630 | T292B226M100(1)S |
| 22.0 | B | 10 | T192B226K100AS | 1.0 | 7.5 | 4.52 | 965 | 0191 | 0411 | 0631 | T292B226K100(1)S |
| 22.0 | B | 5 | T192B226J100AS | 1.0 | 7.5 | 4.52 | 965 | 0192 | 0412 | 0632 | T292B226J100(1)S |
| 30.0 | C | 20 | T192C306M100AS | 2.0 | 7.0 | 3.10 | 1240 | 0193 | 0413 | 0633 | T292C306M100(1)S |
| 30.0 | C | 10 | T192C306K100AS | 2.0 | 7.0 | 3.10 | 1240 | 0194 | 0414 | 0634 | T292C306K100(1)S |
| 30.0 | C | 5 | T192C306J100AS | 2.0 | 7.0 | 3.10 | 1240 | 0195 | 0415 | 0635 | T292C306J100(1)S |
| 43.0 | C | 20 | T192C436M100AS | 2.0 | 8.5 | 2.62 | 1335 | 0196 | 0416 | 0636 | T292C436M100(1)S |
| 43.0 | C | 10 | T192C436K100AS | 2.0 | 8.5 | 2.62 | 1335 | 0197 | 0417 | 0637 | T292C436K100(1)S |
| 43.0 | C | 5 | T192C436J100AS | 2.0 | 8.5 | 2.62 | 1335 | 0198 | 0418 | 0638 | T292C436J100(1)S |
| 86.0 | D | 20 | T192D866M100AS | 9.0 | 10.0 | 1.54 | 1800 | 0199 | 0419 | 0639 | T292D866M100(1)S |
| 86.0 | D | 10 | T192D866K100AS | 9.0 | 10.0 | 1.54 | 1800 | 0200 | 0420 | 0640 | T292D866K100(1)S |
| 125 Volt Rating at +85°C (85 Volt Rating at +125°C) | | | | | | | | | | | |
| 1.7 | A | 20 | T192A175M125AS | 1.0 | 2.0 | 15.61 | 415 | 0201 | 0421 | 0641 | T292A175M125(1)S |
| 1.7 | A | 10 | T192A175K125AS | 1.0 | 2.0 | 15.61 | 415 | 0202 | 0422 | 0642 | T292A175K125(1)S |
| 1.7 | A | 5 | T192A175J125AS | 1.0 | 2.0 | 15.61 | 415 | 0203 | 0423 | 0643 | T292A175J125(1)S |
| 3.6 | A | 20 | T192A365M125AS | 1.0 | 2.7 | 9.95 | 520 | 0204 | 0424 | 0644 | T292A365M125(1)S |
| 3.6 | A | 10 | T192A365K125AS | 1.0 | 2.7 | 9.95 | 520 | 0205 | 0425 | 0645 | T292A365K125(1)S |
| 3.6 | A | 5 | T192A365J125AS | 1.0 | 2.7 | 9.95 | 520 | 0206 | 0426 | 0646 | T292A365J125(1)S |
| 9.0 | B | 20 | T192B905M125AS | 1.0 | 5.0 | 7.37 | 755 | 0207 | 0427 | 0647 | T292B905M125(1)S |
| 9.0 | B | 10 | T192B905K125AS | 1.0 | 5.0 | 7.37 | 755 | 0208 | 0428 | 0648 | T292B905K125(1)S |
| 9.0 | B | 5 | T192B905J125AS | 1.0 | 5.0 | 7.37 | 755 | 0209 | 0429 | 0649 | T292B905J125(1)S |
| 14.0 | B | 20 | T192B146M125AS | 1.0 | 6.0 | 5.69 | 860 | 0210 | 0430 | 0650 | T292B146M125(1)S |
| 14.0 | B | 10 | T192B146K125AS | 1.0 | 6.0 | 5.69 | 860 | 0211 | 0431 | 0651 | T292B146K125(1)S |
| 14.0 | B | 5 | T192B146J125AS | 1.0 | 6.0 | 5.69 | 860 | 0212 | 0432 | 0652 | T292B146J125(1)S |
| 18.0 | C | 20 | T192C186M125AS | 2.0 | 5.0 | 3.69 | 1130 | 0213 | 0433 | 0653 | T292C186M125(1)S |
| 18.0 | C | 10 | T192C186K125AS | 2.0 | 5.0 | 3.69 | 1130 | 0214 | 0434 | 0654 | T292C186K125(1)S |
| 18.0 | C | 5 | T192C186J125AS | 2.0 | 5.0 | 3.69 | 1130 | 0215 | 0435 | 0655 | T292C186J125(1)S |
| 25.0 | C | 20 | T192C256M125AS | 2.0 | 6.0 | 3.18 | 1200 | 0216 | 0436 | 0656 | T292C256M125(1)S |
| 25.0 | C | 10 | T192C256K125AS | 2.0 | 6.0 | 3.18 | 1200 | 0217 | 0437 | 0657 | T292C256K125(1)S |
| 25.0 | C | 5 | T192C256J125AS | 2.0 | 6.0 | 3.18 | 1200 | 0218 | 0438 | 0658 | T292C256J125(1)S |
| 56.0 | D | 20 | T192D566M125AS | 10.0 | 6.5 | 1.54 | 1800 | 0219 | 0439 | 0659 | T292D566M125(1)S |
| 56.0 | D | 10 | T192D566K125AS | 10.0 | 6.5 | 1.54 | 1800 | 0220 | 0440 | 0660 | T292D566K125(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T195/T295 (CLR81) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/25B (CLR81) Capacitors Dash Number Reference (#) | | | KEMET Military Equivalent |
|--|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|--|------|------|------------------------------|
| | | | | | | | | Failure Rate (%/1000 Hrs) | | | |
| 6 Volt Rating at +85°C (4 Volt Rating at +125°C) | | | | | | | | | | | |
| 180.0 | A | 20,10,5 | T195A187(2)006AS | 6.0 | 37.0 | 2.70 | 1010 | N/A | N/A | N/A | N/A |
| 220.0 | A | 20 | T195A227M006AS | 2.0 | 50.0 | 3.02 | 1000 | 0001 | 0089 | 0177 | T295A227M006(1)S |
| 220.0 | A | 10 | T195A227K006AS | 2.0 | 50.0 | 3.02 | 1000 | 0002 | 0090 | 0178 | T295A227K006(1)S |
| 560.0 | B | 20,10,5 | T195B567(2)006AS | 3.0 | 76.0 | 1.80 | 1550 | N/A | N/A | N/A | N/A |
| 820.0 | B | 20 | T195B827M006AS | 3.0 | 155.0 | 2.51 | 1500 | 0003 | 0091 | 0179 | T295B827M006(1)S |
| 820.0 | B | 10 | T195B827K006AS | 3.0 | 155.0 | 2.51 | 1500 | 0004 | 0092 | 0180 | T295B827K006(1)S |
| 1200.0 | C | 20,10,5 | T195C128(2)006AS | 6.0 | 118.0 | 1.30 | 1930 | N/A | N/A | N/A | N/A |
| 1500.0 | C | 20 | T195C158M006AS | 5.0 | 172.0 | 1.52 | 1900 | 0005 | 0093 | 0181 | T295C158M006(1)S |
| 1500.0 | C | 10 | T195C158K006AS | 5.0 | 172.0 | 1.52 | 1900 | 0006 | 0094 | 0182 | T295C158K006(1)S |
| 2200.0 | D | 20 | T195D228M006AS | 6.0 | 170.0 | 1.03 | 2300 | 0007 | 0095 | 0183 | T295D228M006(1)S |
| 2200.0 | D | 10 | T195D228K006AS | 6.0 | 170.0 | 1.03 | 2300 | 0008 | 0096 | 0184 | T295D228K006(1)S |
| 8 Volt Rating at +85°C (5 Volt Rating at +125°C) | | | | | | | | | | | |
| 150.0 | A | 20,10,5 | T195A157(2)008AS | 2.0 | 34.0 | 3.00 | 960 | N/A | N/A | N/A | N/A |
| 180.0 | A | 20 | T195A187M008AS | 2.0 | 41.0 | 3.02 | 1000 | 0009 | 0097 | 0185 | T295A187M008(1)S |
| 180.0 | A | 10 | T195A187K008AS | 2.0 | 41.0 | 3.02 | 1000 | 0010 | 0098 | 0186 | T295A187K008(1)S |
| 470.0 | B | 20,10,5 | T195B477(2)008AS | 3.0 | 67.0 | 1.90 | 1500 | N/A | N/A | N/A | N/A |
| 680.0 | B | 20 | T195B687M008AS | 3.0 | 130.0 | 2.54 | 1500 | 0011 | 0099 | 0187 | T295B687M008(1)S |
| 680.0 | B | 10 | T195B687K008AS | 3.0 | 130.0 | 2.54 | 1500 | 0012 | 0100 | 0188 | T295B687K008(1)S |
| 1000.0 | C | 20,10,5 | T195C108(2)008AS | 6.0 | 98.0 | 1.30 | 1930 | N/A | N/A | N/A | N/A |
| 1500.0 | C | 20 | T195C158M008AS | 5.0 | 170.0 | 1.50 | 1900 | 0013 | 0101 | 0189 | T295C158M008(1)S |
| 1500.0 | C | 10 | T195C158K008AS | 5.0 | 170.0 | 1.50 | 1900 | 0014 | 0102 | 0190 | T295C158K008(1)S |
| 1800.0 | D | 20 | T195D188M008AS | 7.0 | 138.0 | 1.02 | 2300 | 0015 | 0103 | 0191 | T295D188M008(1)S |
| 1800.0 | D | 10 | T195D188K008AS | 7.0 | 138.0 | 1.02 | 2300 | 0016 | 0104 | 0192 | T295D188K008(1)S |
| 10 Volt Rating at +85°C (7 Volt Rating at +125°C) | | | | | | | | | | | |
| 120.0 | A | 20,10,5 | T195A127(2)010AS | 2.0 | 29.0 | 3.20 | 930 | N/A | N/A | N/A | N/A |
| 150.0 | A | 20 | T195A157M010AS | 2.0 | 34.0 | 3.01 | 900 | 0017 | 0105 | 0193 | T295A157M010(1)S |
| 150.0 | A | 10 | T195A157K010AS | 2.0 | 34.0 | 3.01 | 900 | 0018 | 0106 | 0194 | T295A157K010(1)S |
| 390.0 | B | 20,10,5 | T195B397(2)010AS | 3.0 | 59.0 | 2.00 | 1470 | N/A | N/A | N/A | N/A |
| 560.0 | B | 20 | T195B567M010AS | 3.0 | 106.0 | 2.51 | 1450 | 0019 | 0107 | 0195 | T295B567M010(1)S |
| 560.0 | B | 10 | T195B567K010AS | 3.0 | 106.0 | 2.51 | 1450 | 0020 | 0108 | 0196 | T295B567K010(1)S |
| 820.0 | C | 20,10,5 | T195B827M010AS | 6.0 | 80.0 | 1.30 | 1930 | N/A | N/A | N/A | N/A |
| 1200.0 | C | 20 | T195C128M010AS | 5.0 | 137.0 | 1.51 | 1850 | 0021 | 0109 | 0197 | T295C128M010(1)S |
| 1200.0 | C | 10 | T195C128K010AS | 5.0 | 137.0 | 1.51 | 1850 | 0022 | 0110 | 0198 | T295C128K010(1)S |
| 1500.0 | D | 20 | T195D158M010AS | 7.0 | 114.0 | 1.01 | 2300 | 0023 | 0111 | 0199 | T295D158M010(1)S |
| 1500.0 | D | 10 | T195D158K010AS | 7.0 | 114.0 | 1.01 | 2300 | 0024 | 0112 | 0200 | T295D158K010(1)S |
| 15 Volt Rating at +85°C (10 Volt Rating at +125°C) | | | | | | | | | | | |
| 82.0 | A | 20,10,5 | T195A826(2)015AS | 2.0 | 20.0 | 3.30 | 915 | N/A | N/A | N/A | N/A |
| 100.0 | A | 20 | T195A107M015AS | 2.0 | 30.0 | 3.98 | 900 | 0025 | 0113 | 0201 | T295A107M015(1)S |
| 100.0 | A | 10 | T195A107K015AS | 2.0 | 30.0 | 3.98 | 900 | 0026 | 0114 | 0202 | T295A107K015(1)S |
| 270.0 | B | 20,10,5 | T195B277(2)015AS | 3.0 | 43.0 | 2.10 | 1430 | N/A | N/A | N/A | N/A |
| 390.0 | B | 20 | T195B397M015AS | 3.0 | 74.0 | 2.52 | 1450 | 0027 | 0115 | 0203 | T295B397M015(1)S |
| 390.0 | B | 10 | T195B397K015AS | 3.0 | 74.0 | 2.52 | 1450 | 0028 | 0116 | 0204 | T295B397K015(1)S |
| 680.0 | C | 20,10,5 | T195C687(2)015AS | 6.0 | 72.0 | 1.40 | 1860 | N/A | N/A | N/A | N/A |
| 820.0 | C | 20 | T195C827M015AS | 6.0 | 111.0 | 1.80 | 1800 | 0029 | 0117 | 0205 | T295C827M015(1)S |
| 820.0 | C | 10 | T195C827K015AS | 6.0 | 111.0 | 1.80 | 1800 | 0030 | 0118 | 0206 | T295C827K015(1)S |
| 1000.0 | D | 20 | T195D108M015AS | 8.0 | 92.0 | 1.22 | 2300 | 0031 | 0119 | 0207 | T295D108M015(1)S |
| 1000.0 | D | 10 | T195D108K015AS | 8.0 | 92.0 | 1.22 | 2300 | 0032 | 0120 | 0208 | T295D108K015(1)S |
| 25 Volt Rating at +85°C (15 Volt Rating at +125°C) | | | | | | | | | | | |
| 56.0 | A | 20,10,5 | T195A566(2)025AS | 2.0 | 15.0 | 3.50 | 890 | N/A | N/A | N/A | N/A |
| 68.0 | A | 20 | T195A686M025AS | 2.0 | 22.0 | 4.29 | 850 | 0033 | 0121 | 0209 | T295A686M025(1)S |
| 68.0 | A | 10 | T195A686K025AS | 2.0 | 22.0 | 4.29 | 850 | 0034 | 0122 | 0210 | T295A686K025(1)S |
| 180.0 | B | 20,10,5 | T195B187(2)025AS | 3.0 | 30.0 | 2.2 | 1400 | N/A | N/A | N/A | N/A |
| 270.0 | B | 20 | T195B277M025AS | 3.0 | 55.0 | 2.70 | 1400 | 0035 | 0123 | 0211 | T295B277M025(1)S |
| 270.0 | B | 10 | T195B277K025AS | 3.0 | 55.0 | 2.70 | 1400 | 0036 | 0124 | 0212 | T295B277K025(1)S |
| 470.0 | C | 20,10,5 | T195C477K025AS | 6.0 | 53.0 | 1.50 | 1800 | N/A | N/A | N/A | N/A |
| 560.0 | C | 20 | T195C567M025AS | 7.0 | 76.0 | 1.80 | 1750 | 0037 | 0125 | 0213 | T295C567M025(1)S |
| 560.0 | C | 10 | T195C567K025AS | 7.0 | 76.0 | 1.80 | 1750 | 0038 | 0126 | 0214 | T295C567K025(1)S |
| 680.0 | D | 20 | T195D687M025AS | 8.0 | 63.0 | 1.23 | 2100 | 0039 | 0127 | 0215 | T295D687M025(1)S |
| 680.0 | D | 10 | T195D687K025AS | 8.0 | 63.0 | 1.23 | 2100 | 0040 | 0128 | 0216 | T295D687K025(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)
 (#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T195/T295 (CLR81) Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C. Leakage µA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz | MIL-PRF-39006/25B (CLR81) Capacitors Dash Number Reference (#) Failure Rate (%/1000 Hrs) | | | KEMET Military Equivalent |
|---|--------------|-------------|----------------------|----------------------------------|-------------------------------|--|---|---|--------|---------|------------------------------|
| | | | | | | | | M(1.0) | P(0.1) | R(0.01) | |
| 30 Volt Rating at +85°C (20 Volt Rating at +125°C) | | | | | | | | | | | |
| 47.0 | A | 20,10,5 | T195A476(2)030AS | 2.0 | 14.0 | 4.00 | 830 | N/A | N/A | N/A | N/A |
| 56.0 | A | 20 | T195A566M030AS | 2.0 | 22.0 | 5.21 | 800 | 0041 | 0129 | 0217 | T295A566M030(1)S |
| 56.0 | A | 10 | T195A566K030AS | 2.0 | 22.0 | 5.21 | 800 | 0042 | 0130 | 0218 | T295A566K030(1)S |
| 150.0 | B | 20,10,5 | T195B157(2)030AS | 3.0 | 27.0 | 2.40 | 1340 | N/A | N/A | N/A | N/A |
| 220.0 | B | 20 | T195B227M030AS | 3.0 | 42.0 | 2.53 | 1200 | 0043 | 0131 | 0219 | T295B227M030(1)S |
| 220.0 | B | 10 | T195B227K030AS | 3.0 | 42.0 | 2.53 | 1200 | 0044 | 0132 | 0220 | T295B227K030(1)S |
| 390.0 | C | 20,10,5 | T195C397(2)030AS | 6.0 | 47.0 | 1.60 | 1740 | N/A | N/A | N/A | N/A |
| 470.0 | C | 20 | T195C477M030AS | 8.0 | 64.0 | 1.81 | 1500 | 0045 | 0133 | 0221 | T295C477M030(1)S |
| 470.0 | C | 10 | T195C477K030AS | 8.0 | 64.0 | 1.81 | 1500 | 0046 | 0134 | 0222 | T295C477K030(1)S |
| 560.0 | D | 20 | T195D567M030AS | 9.0 | 55.0 | 1.30 | 2000 | 0047 | 0135 | 0223 | T295D567M030(1)S |
| 560.0 | D | 10 | T195D567K030AS | 9.0 | 55.0 | 1.30 | 2000 | 0048 | 0136 | 0224 | T295D567K030(1)S |
| 35 Volt Rating at +85°C (22 Volt Rating at +125°C) | | | | | | | | | | | |
| 39.0 | A | 20,10,5 | T195A396(2)035AS | 2.0 | 12.0 | 4.10 | 820 | N/A | N/A | N/A | N/A |
| 120.0 | B | 20,10,5 | T195B127(2)035AS | 3.0 | 22.6 | 2.50 | 1315 | N/A | N/A | N/A | N/A |
| 330.0 | C | 20,10,5 | T195C337(2)035AS | 6.0 | 45.0 | 1.80 | 1640 | N/A | N/A | N/A | N/A |
| 370.0 | D | 20,10,5 | T195D377(2)035AS | 9.0 | 36.3 | 1.30 | 2040 | N/A | N/A | N/A | N/A |
| 50 Volt Rating at +85°C (30 Volt Rating at +125°C) | | | | | | | | | | | |
| 33.0 | A | 20 | T195A336M050AS | 2.0 | 12.3 | 4.95 | 700 | 0049 | 0137 | 0225 | T295A336M050(1)S |
| 33.0 | A | 10 | T195A336K050AS | 2.0 | 12.3 | 4.95 | 700 | 0050 | 0138 | 0226 | T295A336K050(1)S |
| 120.0 | B | 20 | T195B127M050AS | 4.0 | 22.5 | 2.49 | 1200 | 0051 | 0139 | 0227 | T295B127M050(1)S |
| 120.0 | B | 10 | T195B127K050AS | 4.0 | 22.5 | 2.49 | 1200 | 0052 | 0140 | 0228 | T295B127K050(1)S |
| 270.0 | C | 20 | T195C277M050AS | 8.0 | 37.0 | 1.82 | 1450 | 0053 | 0141 | 0229 | T295C277M050(1)S |
| 270.0 | C | 10 | T195C277K050AS | 8.0 | 37.0 | 1.82 | 1450 | 0054 | 0142 | 0230 | T295C277K050(1)S |
| 330.0 | D | 20 | T195D337M050AS | 9.0 | 38.0 | 1.53 | 1900 | 0055 | 0143 | 0231 | T295D337M050(1)S |
| 330.0 | D | 10 | T195D337K050AS | 9.0 | 38.0 | 1.53 | 1900 | 0056 | 0144 | 0232 | T295D337K050(1)S |
| 60 Volt Rating at +85°C (40 Volt Rating at +125°C) | | | | | | | | | | | |
| 27.0 | A | 20 | T195A276M060AS | 3.0 | 10.2 | 5.01 | 700 | 0057 | 0145 | 0233 | T295A276M060(1)S |
| 27.0 | A | 10 | T195A276K060AS | 3.0 | 10.2 | 5.01 | 700 | 0058 | 0146 | 0234 | T295A276K060(1)S |
| 82.0 | B | 20,10,5 | T195B826(2)060AS | 4.0 | 18.0 | 2.90 | 1220 | N/A | N/A | N/A | N/A |
| 100.0 | B | 20 | T195B107M060AS | 4.0 | 19.0 | 2.52 | 1100 | 0059 | 0147 | 0235 | T295B107M060(1)S |
| 100.0 | B | 10 | T195B107K060AS | 4.0 | 19.0 | 2.52 | 1100 | 0060 | 0148 | 0236 | T295B107K060(1)S |
| 220.0 | C | 20 | T195C227M060AS | 8.0 | 30.0 | 1.81 | 1400 | 0061 | 0149 | 0237 | T295C227M060(1)S |
| 220.0 | C | 10 | T195C227K060AS | 8.0 | 30.0 | 1.81 | 1400 | 0062 | 0150 | 0238 | T295C227K060(1)S |
| 270.0 | D | 20 | T195D277M060AS | 9.0 | 27.0 | 1.33 | 1850 | 0063 | 0151 | 0239 | T295D277M060(1)S |
| 270.0 | D | 10 | T195D277K060AS | 9.0 | 27.0 | 1.33 | 1850 | 0064 | 0152 | 0240 | T295D277K060(1)S |
| 75 Volt Rating at +85°C (50 Volt Rating at +125°C) | | | | | | | | | | | |
| 22.0 | A | 20 | T195A226M075AS | 3.0 | 8.5 | 5.13 | 600 | 0065 | 0153 | 0241 | T295A226M075(1)S |
| 22.0 | A | 10 | T195A226K075AS | 3.0 | 8.5 | 5.13 | 600 | 0066 | 0154 | 0242 | T295A226K075(1)S |
| 68.0 | B | 20,10,5 | T195B686(2)075AS | 4.0 | 15.4 | 3.00 | 1200 | N/A | N/A | N/A | N/A |
| 82.0 | B | 20 | T195B826M075AS | 4.0 | 15.2 | 2.46 | 1000 | 0067 | 0155 | 0243 | T295B826M075(1)S |
| 82.0 | B | 10 | T195B826K075AS | 4.0 | 15.2 | 2.46 | 1000 | 0068 | 0156 | 0244 | T295B826K075(1)S |
| 180.0 | C | 20 | T195C187M075AS | 9.0 | 37.0 | 2.23 | 1300 | 0069 | 0157 | 0245 | T295C187M075(1)S |
| 180.0 | C | 10 | T195C187K075AS | 9.0 | 37.0 | 2.23 | 1300 | 0070 | 0158 | 0246 | T295C187K075(1)S |
| 220.0 | D | 20 | T195D227M075AS | 10.0 | 24.4 | 1.80 | 1800 | 0071 | 0159 | 0247 | T295D227M075(1)S |
| 220.0 | D | 10 | T195D227K075AS | 10.0 | 24.4 | 1.80 | 1800 | 0072 | 0160 | 0248 | T295D227K075(1)S |
| 100 Volt Rating at +85°C (65 Volt Rating at +125°C) | | | | | | | | | | | |
| 10.0 | A | M | T195A106M100AS | 3.0 | 4.5 | 5.97 | 800 | 0073 | 0161 | 0249 | T295A106M100(1)S |
| 10.0 | A | K | T195A106K100AS | 3.0 | 4.5 | 5.97 | 800 | 0074 | 0162 | 0250 | T295A106K100(1)S |
| 39.0 | B | M | T195B396M100AS | 5.0 | 10.4 | 3.54 | 1300 | 0075 | 0163 | 0251 | T295B396M100(1)S |
| 39.0 | B | K | T195B396K100AS | 5.0 | 10.4 | 3.54 | 1300 | 0076 | 0164 | 0252 | T295B396K100(1)S |
| 68.0 | C | M | T195C686M100AS | 10.0 | 11.3 | 2.21 | 1600 | 0077 | 0165 | 0253 | T295C686M100(1)S |
| 68.0 | C | K | T195C686K100AS | 10.0 | 11.3 | 2.21 | 1600 | 0078 | 0166 | 0254 | T295C686K100(1)S |
| 120.0 | D | M | T195D127M100AS | 12.0 | 25.0 | 2.76 | 2000 | 0079 | 0167 | 0255 | T295D127M100(1)S |
| 120.0 | D | K | T195D127K100AS | 12.0 | 25.0 | 2.76 | 2000 | 0080 | 0168 | 0256 | T295D127K100(1)S |
| 125 Volt Rating at +85°C (85 Volt Rating at +125°C) | | | | | | | | | | | |
| 6.8 | A | M | T195A685M125AS | 3.0 | 6.0 | 11.71 | 700 | 0081 | 0169 | 0257 | T295A685M125(1)S |
| 6.8 | A | K | T195A685K125AS | 3.0 | 6.0 | 11.71 | 700 | 0082 | 0170 | 0258 | T295A685K125(1)S |
| 27.0 | B | M | T195B276M125AS | 5.0 | 7.2 | 3.54 | 1200 | 0083 | 0171 | 0259 | T295B276M125(1)S |
| 27.0 | B | K | T195B276K125AS | 5.0 | 7.2 | 3.54 | 1200 | 0084 | 0172 | 0260 | T295B276K125(1)S |
| 47.0 | C | M | T195C476M125AS | 10.0 | 7.9 | 2.23 | 1500 | 0085 | 0173 | 0261 | T295C476M125(1)S |
| 47.0 | C | K | T195C476K125AS | 10.0 | 7.9 | 2.23 | 1500 | 0086 | 0174 | 0262 | T295C476K125(1)S |
| 82.0 | D | M | T195D826M125AS | 12.0 | 17.4 | 2.82 | 1900 | 0087 | 0175 | 0263 | T295D826M125(1)S |
| 82.0 | D | K | T195D826K125AS | 12.0 | 17.4 | 2.82 | 1900 | 0088 | 0176 | 0264 | T295D826K125(1)S |

(1) To complete the KEMET part number, insert Failure Rate Level: M = (1.0); P = (0.1); and R = (.01)

(#) Dash number shall include letter "H" to indicate high vibration and shock requirements (i.e. 80g vibration and 500g shock)

T197 High Temperature Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tolerance | KEMET Part Number | Max. D.C. Leakage µA + 25°C | Max. D.F. % @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mA at 85°C 40 kHz |
|---|--------------|------------------|----------------------|-----------------------------------|---------------------------------|--|--|
| 6 Volt Rating at +85°C (3 Volt Rating at +200°C) | | | | | | | |
| 30.0 | A | 20, 10, 5 | T197A306(1)006AS | 1.0 | 9.0 | 3.98 | 820 |
| 68.0 | A | 20, 10, 5 | T197A686(1)006AS | 1.0 | 15.0 | 2.93 | 960 |
| 140.0 | B | 20, 10, 5 | T197B147(1)006AS | 1.0 | 21.0 | 1.99 | 1200 |
| 270.0 | B | 20, 10, 5 | T197B277(1)006AS | 1.0 | 45.0 | 2.21 | 1375 |
| 330.0 | C | 20, 10, 5 | T197C337(1)006AS | 2.0 | 36.0 | 1.45 | 1800 |
| 560.0 | C | 20, 10, 5 | T197C567(1)006AS | 2.0 | 55.0 | 1.30 | 1900 |
| 1000.0 | D | 20, 10, 5 | T197D108(1)006AS | 3.0 | 72.0 | 0.95 | 2390 |
| 1200.0 | D | 20, 10 | T197D128(1)006AS | 3.0 | 90.0 | 1.00 | 2265 |
| 8 Volt Rating at +85°C (4 Volt Rating at +200°C) | | | | | | | |
| 25.0 | A | 20, 10, 5 | T197A256(1)008AS | 1.0 | 7.5 | 3.98 | 820 |
| 56.0 | A | 20, 10, 5 | T197A566(1)008AS | 1.0 | 14.0 | 3.32 | 900 |
| 120.0 | B | 20, 10, 5 | T197B127(1)008AS | 1.0 | 20.0 | 2.21 | 1230 |
| 220.0 | B | 20, 10, 5 | T197B227(1)008AS | 1.0 | 40.0 | 2.41 | 1370 |
| 290.0 | C | 20, 10, 5 | T197C297(1)008AS | 2.0 | 34.0 | 1.56 | 1770 |
| 430.0 | C | 20, 10, 5 | T197C437(1)008AS | 2.0 | 46.0 | 1.42 | 1825 |
| 850.0 | D | 20, 10 | T197D857(1)008AS | 4.0 | 60.0 | 0.94 | 2330 |
| 10 Volt Rating at +85°C (5 Volt Rating at +200°C) | | | | | | | |
| 20.0 | A | 20, 10, 5 | T197A206(1)010AS | 1.0 | 6.0 | 3.98 | 820 |
| 47.0 | A | 20, 10, 5 | T197A476(1)010AS | 1.0 | 13.0 | 3.67 | 855 |
| 100.0 | B | 20, 10, 5 | T197B107(1)010AS | 1.0 | 15.0 | 1.99 | 1200 |
| 150.0 | B | 20, 10, 5 | T197B157(1)010AS | 1.0 | 30.0 | 2.65 | 1270 |
| 180.0 | B | 20, 10, 5 | T197B187(1)010AS | 1.0 | 30.0 | 2.21 | 1365 |
| 250.0 | C | 20, 10, 5 | T197C257(1)010AS | 2.0 | 30.0 | 1.59 | 1720 |
| 390.0 | C | 20, 10, 5 | T197C397(1)010AS | 2.0 | 44.0 | 1.50 | 1800 |
| 470.0 | C | 20, 10, 5 | T197C477(1)010AS | 2.0 | 44.0 | 1.24 | 1800 |
| 680.0 | D | 20, 10, 5 | T197D687(1)010AS | 4.0 | 46.0 | 0.90 | 2490 |
| 750.0 | D | 20, 10 | T197D757(1)010AS | 4.0 | 50.0 | 0.88 | 2360 |
| 820.0 | D | 20, 10 | T197D827(1)010AS | 4.0 | 57.0 | 0.92 | 2360 |
| 15 Volt Rating at +85°C (7.5 Volt Rating at +200°C) | | | | | | | |
| 15.0 | A | 20, 10, 5 | T197A156(1)015AS | 1.0 | 5.0 | 4.42 | 780 |
| 33.0 | A | 20, 10, 5 | T197A336(1)015AS | 1.0 | 10.0 | 4.02 | 820 |
| 70.0 | B | 20, 10, 5 | T197B706(1)015AS | 1.0 | 13.0 | 2.46 | 1150 |
| 120.0 | B | 20, 10, 5 | T197B127(1)015AS | 1.0 | 25.0 | 2.76 | 1450 |
| 170.0 | C | 20, 10, 5 | T197C177(1)015AS | 2.0 | 25.0 | 1.95 | 1480 |
| 270.0 | C | 20, 10, 5 | T197C277(1)015AS | 2.0 | 43.0 | 2.11 | 1740 |
| 470.0 | D | 20, 10, 5 | T197D477(1)015AS | 6.0 | 37.0 | 1.04 | 2100 |
| 540.0 | D | 20, 10 | T197D547(1)015AS | 6.0 | 40.0 | 0.98 | 2330 |
| 560.0 | D | 20, 10 | T197D567(1)015AS | 6.0 | 40.0 | 0.98 | 2330 |
| 25 Volt Rating at +85°C (12.5 Volt Rating at +200°C) | | | | | | | |
| 10.0 | A | 20, 10, 5 | T197A106(1)025AS | 1.0 | 4.0 | 5.31 | 715 |
| 22.0 | A | 20, 10, 5 | T197A226(1)025AS | 1.0 | 7.0 | 4.22 | 800 |
| 27.0 | A | 20, 10, 5 | T197A276(1)025AS | 1.5 | 11.0 | 5.40 | 715 |
| 50.0 | B | 20, 10, 5 | T197B506(1)025AS | 1.0 | 11.0 | 2.92 | 1130 |
| 100.0 | B | 20, 10, 5 | T197B107(1)025AS | 1.0 | 21.0 | 2.78 | 1435 |
| 120.0 | B | 20, 10, 5 | T197B127(1)025AS | 2.0 | 25.0 | 2.76 | 1450 |
| 180.0 | C | 20, 10, 5 | T197C187(1)025AS | 2.0 | 28.0 | 2.06 | 1525 |
| 220.0 | C | 20, 10, 5 | T197C227(1)025AS | 2.0 | 35.0 | 2.11 | 1615 |
| 330.0 | D | 20, 10, 5 | T197D337(1)025AS | 7.0 | 30.0 | 1.21 | 1860 |
| 350.0 | D | 20, 10 | T197D357(1)025AS | 7.0 | 35.0 | 1.33 | 1970 |
| 390.0 | D | 20, 10 | T197D397(1)025AS | 7.0 | 35.0 | 1.19 | 2025 |
| 30 Volt Rating at +85°C (15 Volt Rating at +200°C) | | | | | | | |
| 8.0 | A | 20, 10, 5 | T197A805(1)030AS | 1.0 | 4.0 | 6.64 | 640 |
| 15.0 | A | 20, 10, 5 | T197A156(1)030AS | 1.0 | 5.0 | 4.42 | 780 |
| 40.0 | B | 20, 10, 5 | T197B406(1)030AS | 1.0 | 10.0 | 3.32 | 1120 |
| 68.0 | B | 20, 10, 5 | T197B686(1)030AS | 1.0 | 13.0 | 2.54 | 1285 |
| 100.0 | C | 20, 10, 5 | T197C107(1)030AS | 2.0 | 17.0 | 2.26 | 1450 |
| 150.0 | C | 20, 10, 5 | T197C157(1)030AS | 2.0 | 23.0 | 2.03 | 1525 |
| 300.0 | D | 20, 10 | T197D307(1)030AS | 8.0 | 31.0 | 1.37 | 1950 |

(1) To complete KEMET part number, insert capacitance tolerance: K = ±10%, M = ±20% and J = ±5%.

T197 High Temperature Ratings & Part Number Reference

| Cap µF | Case Size | Cap Tolerance | KEMET Part Number | Max. D.C. Leakage µA + 25°C | Max. D.F. % @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz |
|--|--------------|------------------|----------------------|-----------------------------------|---------------------------------|--|---|
| 35 Volt Rating at +85°C (17.5 Volt Rating at +200°C) | | | | | | | |
| 15.0 | A | 20, 10 | T197A156(1)035AS | 1.0 | 7.0 | 6.19 | 660 |
| 68.0 | B | 20, 10 | T197B686(1)035AS | 1.0 | 15.0 | 2.93 | 1285 |
| 150.0 | C | 20, 10 | T197C157(1)035AS | 2.0 | 23.0 | 2.03 | 1525 |
| 220.0 | D | 20, 10 | T197D227(1)035AS | 3.0 | 23.0 | 1.39 | 1900 |
| 390.0 | D | 20, 10 | T197D397(1)035AS | 8.0 | 43.0 | 1.46 | 1900 |
| 50 Volt Rating at +85°C (25 Volt Rating at +200°C) | | | | | | | |
| 5.0 | A | 20, 10, 5 | T197A505(1)050AS | 1.0 | 3.0 | 7.96 | 580 |
| 10.0 | A | 20, 10, 5 | T197A106(1)050AS | 1.0 | 4.0 | 5.31 | 715 |
| 25.0 | B | 20, 10, 5 | T197B256(1)050AS | 1.0 | 8.0 | 4.25 | 1005 |
| 47.0 | B | 20, 10, 5 | T197B476(1)050AS | 1.0 | 13.0 | 3.67 | 1155 |
| 60.0 | C | 20, 10, 5 | T197C606(1)050AS | 2.0 | 12.0 | 2.65 | 1335 |
| 82.0 | C | 20, 10, 5 | T197C826(1)050AS | 2.0 | 15.0 | 2.43 | 1400 |
| 160.0 | D | 20, 10 | T197D167(1)050AS | 8.0 | 17.0 | 1.41 | 1900 |
| 60 Volt Rating at +85°C (30 Volt Rating at +200°C) | | | | | | | |
| 4.0 | A | 20, 10, 5 | T197A405(1)060AS | 1.0 | 2.8 | 9.29 | 525 |
| 8.2 | A | 20, 10, 5 | T197A825(1)060AS | 1.0 | 4.0 | 6.47 | 625 |
| 10.0 | A | 20, 10, 5 | T197A106(1)060AS | 1.0 | 4.0 | 5.30 | 570 |
| 20.0 | B | 20, 10, 5 | T197B206(1)060AS | 1.0 | 7.0 | 4.64 | 930 |
| 39.0 | B | 20, 10, 5 | T197B396(1)060AS | 1.0 | 12.0 | 4.08 | 1110 |
| 50.0 | C | 20, 10, 5 | T197C506(1)060AS | 2.0 | 10.0 | 2.65 | 1330 |
| 68.0 | C | 20, 10, 5 | T197C686(1)060AS | 2.0 | 13.0 | 2.54 | 1365 |
| 100.0 | C | 20, 10, 5 | T197C107(1)060AS | 2.0 | 18.0 | 2.39 | 1420 |
| 140.0 | D | 20, 10 | T197D147(1)060AS | 8.0 | 16.0 | 1.52 | 1850 |
| 150.0 | D | 20, 10 | T197D157(1)060AS | 6.0 | 17.0 | 1.50 | 1865 |
| 75 Volt Rating at +85°C (37.5 Volt Rating at +200°C) | | | | | | | |
| 3.5 | A | 20, 10, 5 | T197A355(1)075AS | 1.0 | 2.5 | 9.48 | 525 |
| 6.8 | A | 20, 10, 5 | T197A685(1)075AS | 1.0 | 3.5 | 6.83 | 610 |
| 15.0 | B | 20, 10, 5 | T197B156(1)075AS | 1.0 | 6.0 | 5.31 | 890 |
| 33.0 | B | 20, 10, 5 | T197B336(1)075AS | 1.0 | 10.0 | 4.02 | 1000 |
| 40.0 | C | 20, 10, 5 | T197C406(1)075AS | 2.0 | 9.0 | 2.99 | 1250 |
| 56.0 | C | 20, 10, 5 | T197C566(1)075AS | 2.0 | 11.0 | 2.61 | 1335 |
| 68.0 | C | 20, 10, 5 | T197C686(1)075AS | 2.0 | 13.0 | 2.54 | 1520 |
| 110.0 | D | 20, 10 | T197D117(1)075AS | 9.0 | 12.0 | 1.45 | 1850 |
| 120.0 | D | 20, 10 | T197D127(1)075AS | 9.0 | 12.0 | 1.33 | 1915 |
| 100 Volt Rating at +85°C (50 Volt Rating at +200°C) | | | | | | | |
| 2.5 | A | 20, 10, 5 | T197A255(1)100AS | 1.0 | 2.0 | 10.62 | 505 |
| 4.7 | A | 20, 10, 5 | T197A475(1)100AS | 1.0 | 3.0 | 8.47 | 565 |
| 11.0 | B | 20, 10, 5 | T197B116(1)100AS | 1.0 | 5.0 | 6.03 | 835 |
| 22.0 | B | 20, 10, 5 | T197B226(1)100AS | 1.0 | 8.0 | 4.82 | 965 |
| 30.0 | C | 20, 10, 5 | T197C306(1)100AS | 2.0 | 7.0 | 3.10 | 1240 |
| 43.0 | C | 20, 10, 5 | T197C436(1)100AS | 2.0 | 8.5 | 2.62 | 1335 |
| 86.0 | D | 20, 10 | T197D866(1)100AS | 9.0 | 10.0 | 1.54 | 1800 |
| 125 Volt Rating at +85°C (62.5 Volt Rating at +200°C) | | | | | | | |
| 1.7 | A | 20, 10, 5 | T197A175(1)125AS | 1.0 | 2.0 | 15.61 | 415 |
| 2.7 | A | 20, 10, 5 | T197A275(1)125AS | 1.0 | 3.0 | 14.73 | 450 |
| 3.6 | A | 20, 10, 5 | T197A365(1)125AS | 1.0 | 3.0 | 11.05 | 520 |
| 9.0 | B | 20, 10, 5 | T197B905(1)125AS | 1.0 | 5.0 | 7.37 | 755 |
| 14.0 | B | 20, 10, 5 | T197B146(1)125AS | 1.0 | 6.0 | 5.69 | 860 |
| 18.0 | C | 20, 10, 5 | T197C186(1)125AS | 2.0 | 5.0 | 3.69 | 1130 |
| 25.0 | C | 20, 10, 5 | T197C256(1)125AS | 2.0 | 6.0 | 3.18 | 1200 |
| 56.0 | D | 20, 10 | T197D566(1)125AS | 10.0 | 6.5 | 1.54 | 1800 |

(1) To complete KEMET part number, insert capacitance tolerance: K = ±10%, M = ±20% and J = ±5%.

T198 High Temperature Ratings & Part Number Reference

| Cap μF | Case Size | Cap Tol. | KEMET Part Number | Max. D.C Leakage μA +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz |
|---|--------------|-------------|----------------------|---------------------------------|-------------------------------|--|---|
| 6 Volt Rating at +85°C (3 Volt Rating at +200°C) | | | | | | | |
| 220.0 | A | 20, 10 | T198A227(1)006AS | 2.0 | 50.0 | 3.02 | 1000 |
| 470.0 | B | 20, 10 | T198B477(1)006AS | 2.0 | 90.0 | 2.54 | 1280 |
| 820.0 | B | 20, 10 | T198B827(1)006AS | 3.0 | 155.0 | 2.51 | 1500 |
| 1500.0 | C | 20, 10 | T198C158(1)006AS | 5.0 | 172.0 | 1.52 | 1900 |
| 2200.0 | D | 20, 10 | T198D228(1)006AS | 6.0 | 170.0 | 1.03 | 2300 |
| 8 Volt Rating at +85°C (4 Volt Rating at +200°C) | | | | | | | |
| 180.0 | A | 20, 10 | T198A187(1)008AS | 2.0 | 41.0 | 3.02 | 1000 |
| 680.0 | B | 20, 10 | T198B687(1)008AS | 3.0 | 130.0 | 2.54 | 1500 |
| 1500.0 | C | 20, 10 | T198C158(1)008AS | 5.0 | 170.0 | 1.50 | 1900 |
| 1800.0 | D | 20, 10 | T198D188(1)008AS | 7.0 | 138.0 | 1.02 | 2300 |
| 10 Volt Rating at +85°C (5 Volt Rating at +200°C) | | | | | | | |
| 120.0 | A | 20, 10 | T198A127(1)010AS | 2.0 | 29.0 | 3.2 | 900 |
| 150.0 | A | 20, 10 | T198A157(1)010AS | 2.0 | 34.0 | 3.01 | 900 |
| 560.0 | B | 20, 10 | T198B567(1)010AS | 3.0 | 106.0 | 2.51 | 1450 |
| 1000.0 | C | 20, 10 | T198C108(1)010AS | 4.0 | 92.0 | 1.22 | 1720 |
| 1200.0 | C | 20, 10 | T198C128(1)010AS | 5.0 | 137.0 | 1.51 | 1850 |
| 1500.0 | D | 20, 10 | T198D158(1)010AS | 7.0 | 114.0 | 1.01 | 2300 |
| 15 Volt Rating at +85°C (7.5 Volt Rating at +200°C) | | | | | | | |
| 100.0 | A | 20, 10 | T198A107(1)015AS | 2.0 | 30.0 | 3.98 | 900 |
| 390.0 | B | 20, 10 | T198B397(1)015AS | 3.0 | 74.0 | 2.52 | 1450 |
| 820.0 | C | 20, 10 | T198C827(1)015AS | 6.0 | 111.0 | 1.80 | 1800 |
| 1000.0 | D | 20, 10 | T198D108(1)015AS | 8.0 | 92.0 | 1.22 | 2300 |
| 25 Volt Rating at +85°C (12.5 Volt Rating at +200°C) | | | | | | | |
| 68.0 | A | 20, 10 | T198A686(1)025AS | 2.0 | 22.0 | 4.29 | 850 |
| 180.0 | B | 20, 10 | T198B187(1)025AS | 3.0 | 35.0 | 2.58 | 1130 |
| 270.0 | B | 20, 10 | T198B277(1)025AS | 3.0 | 55.0 | 2.70 | 1400 |
| 390.0 | C | 20, 10 | T198C397(1)025AS | 7.0 | 48.0 | 1.63 | 1400 |
| 470.0 | C | 20, 10 | T198C477(1)025AS | 7.0 | 48.0 | 1.35 | 1400 |
| 560.0 | C | 20, 10 | T198C567(1)025AS | 7.0 | 76.0 | 1.80 | 1750 |
| 680.0 | D | 20, 10 | T198D687(1)025AS | 8.0 | 63.0 | 1.23 | 2100 |
| 30 Volt Rating at +85°C (15 Volt Rating at +200°C) | | | | | | | |
| 56.0 | A | 20, 10 | T198A566(1)030AS | 2.0 | 22.0 | 5.21 | 800 |
| 220.0 | B | 20, 10 | T198B227(1)030AS | 3.0 | 42.0 | 2.53 | 1200 |
| 470.0 | C | 20, 10 | T198C477(1)030AS | 8.0 | 64.0 | 1.81 | 1500 |
| 560.0 | D | 20, 10 | T198D567(1)030AS | 9.0 | 55.0 | 1.30 | 2000 |
| 35 Volt Rating at +85°C (17.5 Volt Rating at 200°C) | | | | | | | |
| 39.0 | A | 20, 10 | T198A396(1)035AS | 2.0 | 12.0 | 4.10 | 820 |
| 270.0 | C | 20, 10 | T198A277(1)035AS | 7.0 | 37.0 | 1.82 | 1373 |
| 50 Volt Rating at +85°C (25 Volt Rating at +200°C) | | | | | | | |
| 33.0 | A | 20, 10 | T198A336(1)050AS | 2.0 | 12.3 | 4.95 | 700 |
| 120.0 | B | 20, 10 | T198B127(1)050AS | 4.0 | 22.5 | 2.49 | 1200 |
| 270.0 | C | 20, 10 | T198C277(1)050AS | 8.0 | 37.0 | 1.82 | 1450 |
| 330.0 | D | 20, 10 | T198D337(1)050AS | 9.0 | 38.0 | 1.53 | 1900 |

(1) To complete KEMET part number, insert capacitance tolerance: K = ±10%, M = ±20% and J = ±5%.

T198 High Temperature Ratings & Part Number Reference

| Cap μ F | Case Size | Cap Tol. | KEMET Part Number | Max. D.C Leakage μ A +25°C | Max. D.F. @ 25°C 120 Hz | Max. ESR Ohms at +25°C 120 Hz | Max. Ripple Current mArms at 85°C 40 kHz |
|---|--------------|-------------|----------------------|--------------------------------------|-------------------------------|--|---|
| 60 Volt Rating at +85°C (30 Volt Rating at +200°C) | | | | | | | |
| 12.0 | A | 20, 10 | T198A126(1)060AS | 3.0 | 7.0 | 7.74 | 700 |
| 15.0 | A | 20, 10 | T198A156(1)060AS | 3.0 | 8.0 | 7.10 | 700 |
| 27.0 | A | 20, 10 | T198A276(1)060AS | 3.0 | 10.2 | 5.00 | 700 |
| 47.0 | B | 20, 10 | T198B476(1)060AS | 4.0 | 13.0 | 3.67 | 1150 |
| 56.0 | B | 20, 10 | T198B566(1)060AS | 4.0 | 18.0 | 4.26 | 1150 |
| 82.0 | B | 20, 10 | T198B826(1)060AS | 4.0 | 22.0 | 3.56 | 1150 |
| 100.0 | B | 20, 10 | T198B107(1)060AS | 4.0 | 19.0 | 2.52 | 1100 |
| 120.0 | C | 20, 10 | T198C127(1)060AS | 8.0 | 20.0 | 2.21 | 1420 |
| 220.0 | C | 20, 10 | T198C227(1)060AS | 8.0 | 37.0 | 2.23 | 1400 |
| 270.0 | D | 20, 10 | T198D277(1)060AS | 9.0 | 27.0 | 1.33 | 1850 |
| 330.0 | D | 20, 10 | T198D337(1)060AS | 10.0 | 32.0 | 1.29 | 1850 |
| 75 Volt Rating at +85°C (37.5 Volt Rating at +200°C) | | | | | | | |
| 8.2 | A | 20, 10 | T198A825(1)075AS | 3.0 | 6.0 | 9.70 | 610 |
| 22.0 | A | 20, 10 | T198A226(1)075AS | 3.0 | 8.5 | 5.13 | 600 |
| 47.0 | B | 20, 10 | T198B476(1)075AS | 4.0 | 15.0 | 4.23 | 1050 |
| 68.0 | B | 20, 10 | T198B686(1)075AS | 4.0 | 21.0 | 4.10 | 1050 |
| 82.0 | B | 20, 10 | T198B826(1)075AS | 4.0 | 15.2 | 2.46 | 1000 |
| 100.0 | C | 20, 10 | T198C107(1)075AS | 8.0 | 19.0 | 2.52 | 1335 |
| 110.0 | B | 20, 10 | T198B117(1)075AS | 2.0 | 11.0 | 1.33 | 1650 |
| 150.0 | C | 20, 10 | T198C157(1)075AS | 9.0 | 25.0 | 2.21 | 1335 |
| 180.0 | C | 20, 10 | T198C187(1)075AS | 9.0 | 28.0 | 2.06 | 1300 |
| 220.0 | D | 20, 10 | T198D227(1)075AS | 10.0 | 37.0 | 2.23 | 1800 |
| 100 Volt Rating at +85°C (50 Volt Rating at +200°C) | | | | | | | |
| 5.6 | A | 20, 10 | T198A565(1)100AS | 2.0 | 6.0 | 14.21 | 530 |
| 10.0 | A | 20, 10 | T198A106(1)100AS | 3.0 | 4.5 | 5.97 | 800 |
| 33.0 | B | 20, 10 | T198B336(1)100AS | 3.0 | 14.0 | 5.63 | 1065 |
| 39.0 | B | 20, 10 | T198B396(1)100AS | 5.0 | 10.4 | 3.54 | 1300 |
| 47.0 | C | 20, 10 | T198C476(1)100AS | 4.0 | 9.0 | 2.54 | 1335 |
| 56.0 | C | 20, 10 | T198C566(1)100AS | 8.0 | 11.0 | 2.21 | 1600 |
| 68.0 | C | 20, 10 | T198C686(1)100AS | 10.0 | 15.0 | 2.93 | 1600 |
| 120.0 | D | 20, 10 | T198D127(1)100AS | 12.0 | 25.0 | 2.76 | 2000 |
| 220.0 | D | 20, 10 | T198D227(1)100AS | 12.0 | 30.0 | 1.81 | 2000 |
| 125 Volt Rating at +85°C (62.5 Volt Rating at 200°C) | | | | | | | |
| 5.6 | A | 20, 10 | T198A565(1)125AS | 3.0 | 6.0 | 14.21 | 530 |
| 6.8 | A | 20, 10 | T198A685(1)125AS | 3.0 | 6.0 | 11.71 | 700 |
| 18.0 | B | 20, 10 | T198B186(1)125AS | 3.0 | 8.0 | 5.89 | 1065 |
| 27.0 | B | 20, 10 | T198B276(1)125AS | 5.0 | 7.2 | 3.54 | 1200 |
| 39.0 | C | 20, 10 | T198C396(1)125AS | 8.0 | 8.0 | 2.72 | 1280 |
| 47.0 | C | 20, 10 | T198C476(1)125AS | 10.0 | 9.0 | 2.54 | 1500 |
| 68.0 | D | 20, 10 | T198D686(1)125AS | 12.0 | 8.0 | 1.56 | 1860 |
| 82.0 | D | 20, 10 | T198D826(1)125AS | 12.0 | 17.4 | 2.82 | 1900 |

(1) To complete KEMET part number, insert capacitance tolerance: K = \pm 10%, M = \pm 20% and J = \pm 5%.

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