

Inductors

Military, MIL-C-15305 Qualified, Type LT
and Commercial, Molded, Shielded



FEATURES

- Wide inductance range in small package.
- Flame retardant coating.
- Electromagnetic shield-finest shield available.
- Epoxy molded construction provides superior moisture protection.
- Precision performance, excellent reliability, sturdy construction.

ELECTRICAL SPECIFICATIONS

Inductance Tolerance: ± 10% standard.
± 5% available.

Insulation Resistance: 1000 Megohm minimum per MIL-STD-202, Method 302, Test Condition B.

Dielectric Withstanding Voltage: 1000 VAC per MIL-STD-202, Method 301 (sea level).

Percent Coupling: 3% maximum per MIL-C-15305.

Operating Temperature Range: - 55°C to + 105°C.

MECHANICAL SPECIFICATIONS

Terminal Strength: 5 pounds pull per MIL-STD-202, Method 211, Test Condition A.

Weight: IMS-5 = 0.85 grams maximum.

MATERIAL SPECIFICATIONS

Encapsulant: Epoxy.

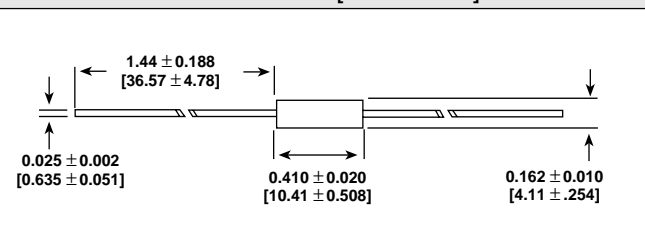
Standard Terminal: #22 AWG tinned copper.

| INDUCTANCE RANGE AND MILITARY STANDARD | | | | | | |
|--|-----------|----------------|-------|------------|------------|-------------------|
| INDUCTANCE RANGE | | CLASSIFICATION | | MATERIAL | | MILITARY STANDARD |
| FROM | TO | GRADE | CLASS | CORE | SHIELD | |
| .10µH | .82µH | 1 | A | Phenolic | Powd. Iron | MS75087 |
| 1.0µH | 12.0µH | 1 | A | Powd. Iron | Powd. Iron | MS75088 |
| 15.0µH | 100,000µH | 1 | A | Ferrite | Ferrite | MS75089* |

*Not QPL'd.

| ENVIRONMENTAL PERFORMANCE | | |
|------------------------------|--------------------|-------------------------|
| TEST | CONDITIONS | SPECIFICATIONS |
| Barometric Pressure | Test Condition C | MIL-STD-202, Method 105 |
| Thermal Shock | Test Condition A-1 | MIL-STD-202, Method 107 |
| Flammability | — | MIL-STD-202, Method 111 |
| Overload | — | MIL-C-15305 |
| Low Temperature Storage | — | MIL-C-15305 |
| Resistance to Soldering Heat | Test Condition A | MIL-STD-202, Method 210 |
| Resistance to Solvents | — | MIL-STD-202, Method 215 |

DIMENSIONS in inches [millimeters]



| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | | | | |
|------------------------------------|-------|-------------------|---------------|--------|------------------------|----------------------------------|------------------------|--------------------------|------------------------------|
| IND. (µH) | TOL. | MILITARY STANDARD | MILITARY TYPE | Q MIN. | TEST FREQ. L & Q (MHz) | SELF-RESONANT * FREQ. MIN. (MHz) | DCR @ 25°C MAX. (Ohms) | RATED DC ** CURRENT (mA) | INCREMENTAL *** CURRENT (mA) |
| 0.10 | ± 10% | MS75087 | LT10K | 50 | 25.0 | 250.0 | 0.025 | 1790 | — |
| 0.12 | ± 10% | | 191 | 51 | 25.0 | 250.0 | 0.034 | 1530 | — |
| 0.15 | ± 10% | | 193 | 51 | 25.0 | 250.0 | 0.037 | 1470 | — |
| 0.18 | ± 10% | | 194 | 50 | 25.0 | 250.0 | 0.047 | 1300 | — |
| 0.22 | ± 10% | | 195 | 49 | 25.0 | 250.0 | 0.067 | 1100 | — |
| 0.27 | ± 10% | | 196 | 47 | 25.0 | 250.0 | 0.11 | 855 | — |
| 0.33 | ± 10% | | 197 | 46 | 25.0 | 250.0 | 0.13 | 780 | — |
| 0.39 | ± 10% | | 198 | 44 | 25.0 | 250.0 | 0.18 | 670 | — |
| 0.47 | ± 10% | | 199 | 44 | 25.0 | 235.0 | 0.25 | 565 | — |
| 0.56 | ± 10% | | 200 | 43 | 25.0 | 210.0 | 0.33 | 490 | — |
| 0.68 | ± 10% | | 201 | 42 | 25.0 | 190.0 | 0.45 | 420 | — |
| 0.82 | ± 10% | | 202 | 40 | 25.0 | 180.0 | 0.59 | 370 | — |
| 1.0 | ± 10% | MS75088 | LT10K | 44 | 25.0 | 140.0 | 0.07 | 1070 | — |
| 1.2 | ± 10% | | 203 204 | 44 | 7.9 | 130.0 | 0.10 | 895 | — |

*Measured with full length lead. **Rated DC Current: Based on maximum temperature rise not to exceed 15°C at + 90°C ambient.

***Incremental Current: The minimum typical current at which the inductance will be decreased by 5% from its initial zero DC value.

NOTE: Listing of Military Standard does not imply qualification. Contact factory for latest government QPL information.



| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | | | | |
|------------------------------------|-------|---------------------|---------------|--------|------------------------|---------------------------------|------------------------|-------------------------|-----------------------------|
| IND. (μH) | TOL. | MILITARY STANDARD | MILITARY TYPE | Q MIN. | TEST FREQ. L & Q (MHz) | SELF-RESONANT* FREQ. MIN. (MHz) | DCR @ 25°C MAX. (Ohms) | RATED DC** CURRENT (mA) | INCREMENTAL*** CURRENT (mA) |
| 1.5 | ± 10% | -3 | 205 | 44 | 7.9 | 115.0 | 0.12 | 815 | — |
| 1.8 | ± 10% | -4 | 206 | 44 | 7.9 | 105.0 | 0.14 | 775 | — |
| 2.2 | ± 10% | -5 | 207 | 44 | 7.9 | 100.0 | 0.19 | 650 | — |
| 2.7 | ± 10% | -6 | 208 | 44 | 7.9 | 92.0 | 0.28 | 535 | — |
| 3.3 | ± 10% | -7 | 209 | 44 | 7.9 | 85.0 | 0.35 | 480 | — |
| 3.9 | ± 10% | -8 | 210 | 44 | 7.9 | 75.0 | 0.40 | 450 | — |
| 4.7 | ± 10% | -9 | 211 | 44 | 7.9 | 70.0 | 0.55 | 380 | — |
| 5.6 | ± 10% | -10 | 212 | 44 | 7.9 | 65.0 | 0.72 | 335 | — |
| 6.8 | ± 10% | -11 | 213 | 50 | 7.9 | 55.0 | 1.02 | 280 | — |
| 8.2 | ± 10% | -12 | 214 | 50 | 7.9 | 50.0 | 1.32 | 250 | — |
| 10.0 | ± 10% | -13 | 215 | 50 | 7.9 | 46.0 | 1.62 | 220 | — |
| 12.0 | ± 10% | -14 | 216 | 55 | 2.5 | 44.0 | 2.0 | 200 | — |
| | | MS75089 (Not QPL'd) | LT10K | | | | | | |
| 15.0 | ± 10% | -1 | 217 | 45 | 2.5 | 49.0 | 0.80 | 315 | 250.0 |
| 18.0 | ± 10% | -2 | 218 | 45 | 2.5 | 45.0 | 0.89 | 300 | 235.0 |
| 22.0 | ± 10% | -3 | 219 | 45 | 2.5 | 41.0 | 0.96 | 290 | 220.0 |
| 27.0 | ± 10% | -4 | 220 | 45 | 2.5 | 38.0 | 1.19 | 260 | 200.0 |
| 33.0 | ± 10% | -5 | 221 | 45 | 2.5 | 34.0 | 1.37 | 240 | 190.0 |
| 39.0 | ± 10% | -6 | 222 | 50 | 2.5 | 29.0 | 1.93 | 205 | 180.0 |
| 47.0 | ± 10% | -7 | 223 | 50 | 2.5 | 27.0 | 2.11 | 195 | 175.0 |
| 56.0 | ± 10% | -8 | 224 | 50 | 2.5 | 25.0 | 2.23 | 190 | 160.0 |
| 68.0 | ± 10% | -9 | 225 | 50 | 2.5 | 21.0 | 2.70 | 170 | 150.0 |
| 82.0 | ± 10% | -10 | 226 | 50 | 2.5 | 10.5 | 2.44 | 180 | 140.0 |
| 100.0 | ± 10% | -11 | 227 | 50 | 2.5 | 10.0 | 3.12 | 160 | 120.0 |
| 120.0 | ± 10% | -12 | 228 | 55 | 0.79 | 9.7 | 3.6 | 150 | 95.0 |
| 150.0 | ± 10% | -13 | 229 | 55 | 0.79 | 8.5 | 4.1 | 140 | 90.0 |
| 180.0 | ± 10% | -14 | 230 | 55 | 0.79 | 8.0 | 4.4 | 135 | 85.0 |
| 220.0 | ± 10% | -15 | 231 | 55 | 0.79 | 7.5 | 5.0 | 125 | 80.0 |
| 270.0 | ± 10% | -16 | 232 | 55 | 0.79 | 7.0 | 5.8 | 115 | 70.0 |
| 330.0 | ± 10% | -17 | 233 | 55 | 0.79 | 6.5 | 6.4 | 110 | 65.0 |
| 390.0 | ± 10% | -18 | 234 | 60 | 0.79 | 6.2 | 7.4 | 105 | 60.0 |
| 470.0 | ± 10% | -19 | 235 | 60 | 0.79 | 5.7 | 9.5 | 92 | 58.0 |
| 560.0 | ± 10% | -20 | 236 | 60 | 0.79 | 4.7 | 10.5 | 90 | 55.0 |
| 680.0 | ± 10% | -21 | 237 | 60 | 0.79 | 4.5 | 11.8 | 80 | 50.0 |
| 820.0 | ± 10% | -22 | 238 | 60 | 0.79 | 4.2 | 13.0 | 80 | 45.0 |
| | | MS75089 (Not QPL'd) | LT10K | | | | | | |
| 1000.0 | ± 10% | -23 | 239 | 60 | 0.79 | 3.8 | 17.5 | 70 | 40.0 |
| 1200.0 | ± 10% | -24 | 240 | 45 | 0.25 | 1.5 | 22.1 | 60 | 35.0 |
| 1500.0 | ± 10% | -25 | 241 | 45 | 0.25 | 1.2 | 26.5 | 55 | 33.0 |
| 1800.0 | ± 10% | -26 | 242 | 45 | 0.25 | 1.0 | 29.9 | 50 | 30.0 |
| 2200.0 | ± 10% | -27 | 243 | 45 | 0.25 | 0.97 | 33.8 | 50 | 27.0 |
| 2700.0 | ± 10% | -28 | 244 | 45 | 0.25 | 0.92 | 47.3 | 40 | 25.0 |
| 3300.0 | ± 10% | -29 | 245 | 45 | 0.25 | 0.84 | 53.0 | 40 | 22.0 |
| 3900.0 | ± 10% | -30 | 246 | 45 | 0.25 | 0.80 | 73.8 | 35 | 20.0 |
| 4700.0 | ± 10% | -31 | 247 | 45 | 0.25 | 0.74 | 81.6 | 31 | 19.0 |
| 5600.0 | ± 10% | -32 | 248 | 44 | 0.25 | 0.73 | 98.9 | 28 | 17.0 |
| 6800.0 | ± 10% | -33 | 249 | 40 | 0.25 | 0.66 | 111.0 | 27 | 16.0 |
| 8200.0 | ± 10% | -34 | 250 | 40 | 0.25 | 0.54 | 119.0 | 26 | 15.0 |
| 10000.0 | ± 10% | -35 | 251 | 40 | 0.25 | 0.47 | 137.0 | 24 | 14.0 |
| 12000.0 | ± 10% | -36 | 252 | 30 | 0.079 | 0.33 | 143.0 | 23 | 13.0 |
| 15000.0 | ± 10% | -37 | 253 | 30 | 0.079 | 0.29 | 157.0 | 22 | 12.0 |
| 18000.0 | ± 10% | -38 | 254 | 30 | 0.079 | 0.28 | 175.0 | 21 | 10.0 |
| 22000.0 | ± 10% | -39 | 255 | 27 | 0.079 | 0.25 | 274.0 | 17 | 9.0 |
| 27000.0 | ± 10% | -40 | 256 | 27 | 0.079 | 0.21 | 308.0 | 16 | 8.0 |
| 33000.0 | ± 10% | -41 | 257 | 27 | 0.079 | 0.19 | 343.0 | 15 | 7.5 |
| 39000.0 | ± 10% | -42 | 258 | 27 | 0.079 | 0.17 | 376.0 | 15 | 6.0 |
| 47000.0 | ± 10% | -43 | 259 | 23 | 0.079 | 0.16 | 473.0 | 13 | 5.5 |
| 56000.0 | ± 10% | -44 | 260 | 23 | 0.079 | 0.14 | 512.0 | 13 | 5.0 |
| 68000.0 | ± 10% | -45 | 261 | 23 | 0.079 | 0.13 | 580.0 | 12 | 4.0 |
| 82000.0 | ± 10% | -46 | 262 | 21 | 0.079 | 0.12 | 618.0 | 11 | 3.5 |
| 100000.0 | ± 10% | -47 | 263 | 18 | 0.079 | 0.11 | 678.0 | 11 | 3.0 |

*Measured with full length lead. **Rated DC Current: Based on maximum temperature rise not to exceed 15°C at + 90°C ambient.
***Incremental Current: The minimum typical current at which the inductance will be decreased by 5% from its initial zero DC value.

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| ORDERING INFORMATION | | |
|----------------------|------------------|----------------------|
| IMS-5 | 10μH | ± 10% |
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE |

| ORDERING INFORMATION - MILITARY PART NUMBER | | | | | | | |
|---|------------------|----|------|-----------------|--------|-----------|--|
| MS75088 | -13 | OR | LT | 10 | K | 215 | |
| MILITARY STANDARD | INDUCTANCE VALUE | | TYPE | GRADE AND CLASS | FAMILY | ID NUMBER | |