

Surface Mount Transient Voltage Suppressor

Stand-Off Voltage - 6.0 to 60 Volts

2000 Watt Peak Pulse Power

Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition Rate (duty cycle):0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to V(BR) for unidirectional types
- Typical IR less than 2μA above 10V
- High Temperature soldering: 260°C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-O
- Pb-free plated



Mechanical Data

- **Case:** JEDEC DO-214AB. Molded plastic over glass passivated junction
- **Terminals:** Solderable per MIL-STD-750, Method 2026
- **Polarity:** Color band denoted positive end (cathode) except Bidirectional
- **Standard Packaging:** 16mm tape (EIA STD RS-481)
- **Weight:** 0.007ounce, 0.21gram

Devices For Bipolar Application

- For Bidirectional use C or CA Suffix for types TECD6.0 thru types TECD60 (e.g. TECD6.0C , TECD60CA)
- Electrical characteristics apply in both directions

Maximum Ratings And Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

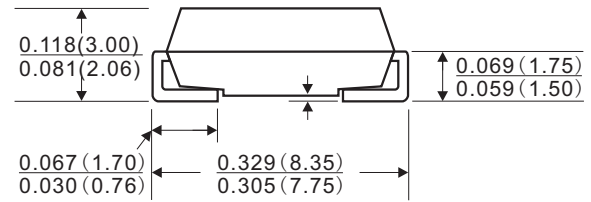
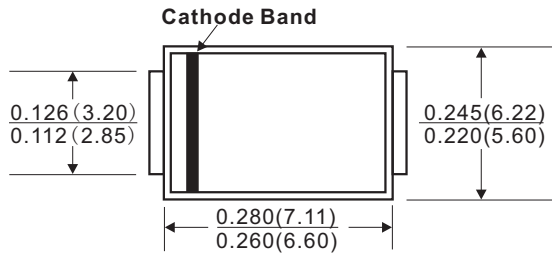
RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1,2 ,FIG.1)	P _{PPM}	Minimum 2000	Watts
Peak Pulse Current of on 10/1000μs waveform (Note 1,FIG.3)	I _{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note2,3)	I _{FSM}	300	Amps
Operating junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Notes :

- 1.Non-repetitive current pulse , per Fig. 3 and derated above TA = 25°C per Fig. 2 .
- 2.Mounted on 8.0mm x 8.0mm Copper Pads to each terminal
- 3.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

Dimensions (DO-214AB)

DO-214AB(SMC J-Bend)



Dimensions in inches and(millimeters)

Electrical Characteristics

TABLE 1

TECD Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @IT		Test Current	Maximum Clamping Voltage @Ipp	Peak Pulse Current	Reverse Leakage @VRWM
UNI-Polar	BI-Polar	UNI	BI	VRWM(V)	VBR(V)Min.	VBR(V)Max.	IT(mA)	Vc(V)	Ipp(A)	IR(μA)
TECD6.0A	TECD6.0CA	6K	6L	6.0	6.67	7.37	10	10.3	349.5	200
TECD8.0A	TECD8.0CA	8K	8L	8.0	8.89	9.83	1	13.6	264.7	50
TECD12A	TECD12CA	12K	12L	12.0	13.30	14.70	1	19.9	180.9	1
TECD15A	TECD15CA	15K	15L	15.0	16.70	18.50	1	24.4	147.5	1
TECD16A	TECD16CA	16K	16L	16.0	17.80	19.70	1	26.0	138.5	1
TECD20A	TECD20CA	20K	20L	20.0	22.20	24.50	1	32.4	111.1	1
TECD22A	TECD22CA	22K	22L	22.0	24.40	26.90	1	35.5	101.4	1
TECD26A	TECD26CA	26K	26L	26.0	28.90	31.90	1	42.1	85.5	1
TECD28A	TECD28CA	28K	28L	28.0	31.10	34.40	1	45.4	79.3	1
TECD30A	TECD30CA	30K	30L	30.0	33.30	36.80	1	48.4	74.4	1
TECD33A	TECD33CA	33K	33L	33.0	36.70	40.60	1	53.3	67.5	1
TECD36A	TECD36CA	36K	36L	36.0	40.00	44.20	1	58.1	62.0	1
TECD40A	TECD40CA	40K	40L	40.0	44.40	49.10	1	64.5	55.7	1
TECD58A	TECD58CA	58K	58L	58.0	64.40	71.20	1	93.6	38.5	1
TECD60A	TECD60CA	60K	60L	60.0	66.70	73.70	1	96.8	37.2	1

For bidirectional type having VRWM of 10 volts and less, the IR limit is double.
For parts with A, the VBR is ±5%

Characteristic Curves (TA=25 °C unless otherwise noted)

Fig.1 Peak Pulse Power Rating

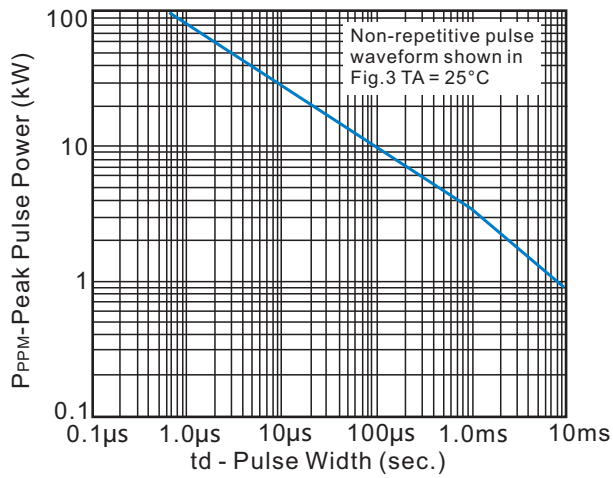


Fig.2 Pulse Derating Curve

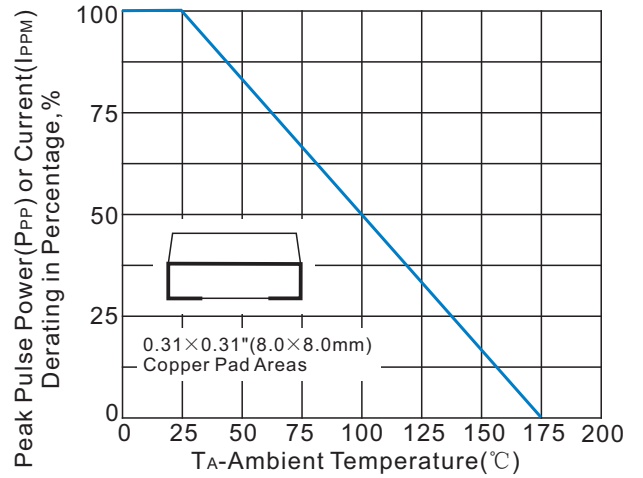


Fig.3 Pulse Waveform

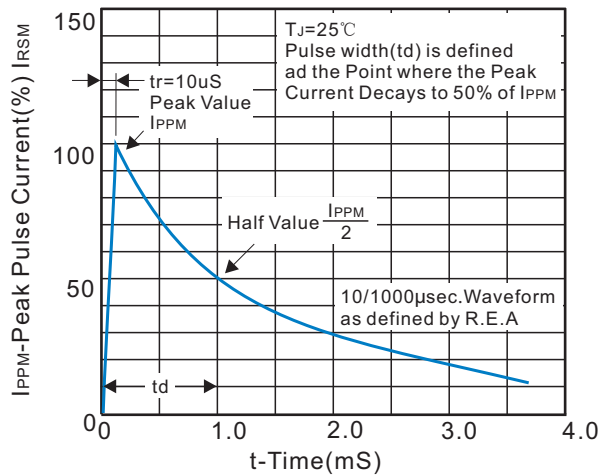


Fig.4 Typical Junction Capacitance

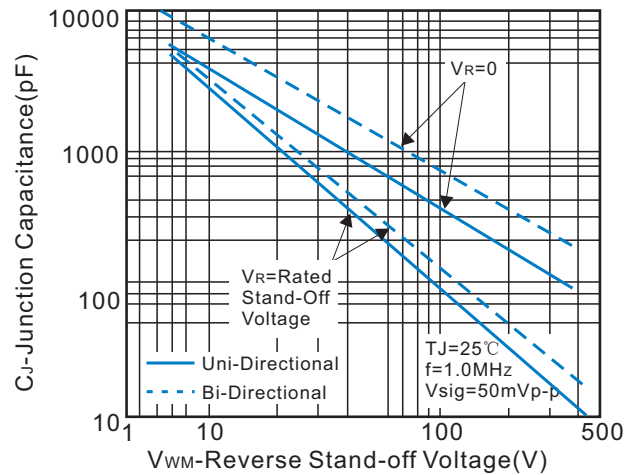


Fig.5 Typ. Transient Thermal Impedance

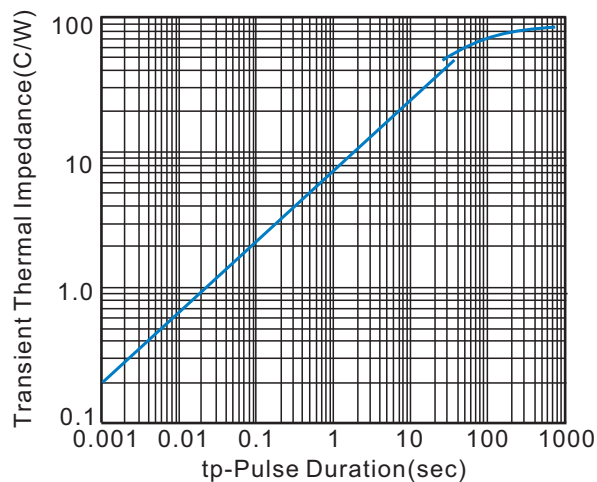
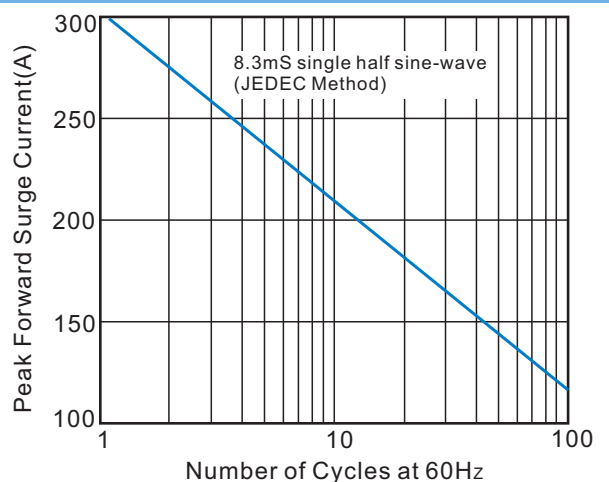


Fig.6 Maximum Non-Repetitive Forward Surge Current

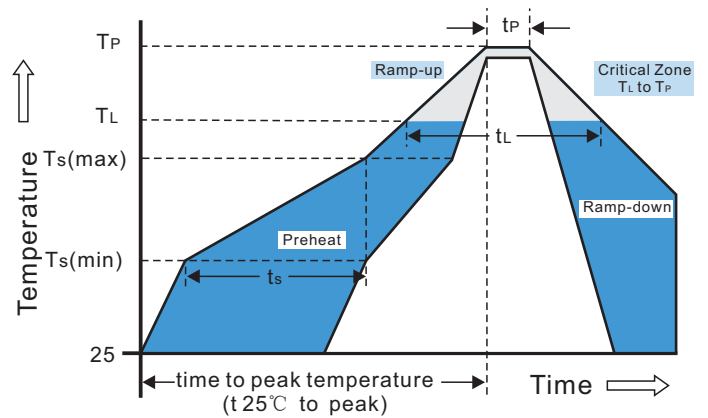


Recommended Soldering Conditions

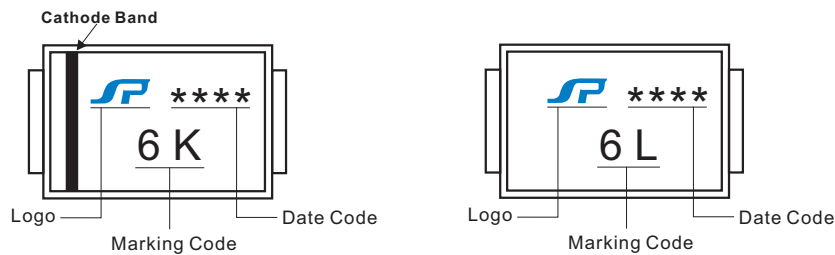
Recommended Conditions

Reflow Condition		Pb-Free assembly (see Fig.1)
Pre Heat	-Temperature Min($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time(Min to Max)(t _s)	60-180secs
Average ramp up rate (Liquidus Temp(T_L) to peak)		3°C/sec.Max.
$T_{s(max)}$ to T_L -Ramp-up Rate		3°C/sec.Max.
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150secs
Peak Temp(T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp(t_P)		30 secs.Max.
Ramp-down Rate		6°C/sec.Max.
Time 25°C to Peak Temp(T_P)		8 min.Max.
Do not exceed		+260°C

Reflow Soldering



Marking Code



Tape And Reel Specification

Symbol	Ea Per Reel	REEL DIA (mm)	Industry Standard
TECD***	500	178	EIARS-481

