

## Surface Mount Transient Voltage Suppressors(TVS)

**TPSMDJ Series      10 to 43 V      3000W**

### Features

- ◆ Glass passivated chip.
- ◆ 3000W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle): 0.01 %.
- ◆ High reliability application and automotive grade AEC Q101 qualified.
- ◆ Low leakage.
- ◆ Uni and Bidirectional unit.
- ◆ Excellent clamping capability.
- ◆ Very fast response time.
- ◆ RoHS compliant.

### Mechanical Data

- ◆ Case: Molded plastic.
- ◆ Epoxy: UL 94V-0 rate flame retardant.
- ◆ Lead: Solderable per MIL-STD-750, method 2026.
- ◆ Polarity: Color band denotes cathode end except Bipolar.
- ◆ Mounting position: Any.



### Maximum Ratings( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	3000	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	6.5	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only <sup>(2)</sup>	$I_{FSM}$	300	A
Maximum instantaneous forward voltage at 100 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/5.0	V
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

#### Notes:

(1) Non-repetitive current pulse per Fig.5 and derated above  $T_A = 25^\circ\text{C}$  per Fig.1.

(2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

(3)  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

## Surface Mount Transient Voltage Suppressors(TVS)

**TPSMDJ Series      10 to 43 V      3000W**

**Electrical Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

Part Number		Marking		Working Peak Reverse Voltage $V_{RWM}(V)$	Breakdown Voltage $V_{BR}(V)$ @ $I_T$		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )
Uni	Bi	Uni	Bi		MIN	MAX				
TPSMDJ10A	TPSMDJ10CA	PDXA	DDXA	10.0	11.10	12.30	5	17.0	176.47	15
TPSMDJ11A	TPSMDJ11CA	PDZA	DDZA	11.0	12.20	13.50	5	18.2	164.84	2
TPSMDJ12A	TPSMDJ12CA	PEEA	DEEA	12.0	13.30	14.70	5	19.9	150.75	2
TPSMDJ13A	TPSMDJ13CA	PEGA	DEGA	13.0	14.40	15.90	5	21.5	139.53	2
TPSMDJ14A	TPSMDJ14CA	PEKA	DEKA	14.0	15.60	17.20	5	23.2	129.31	2
TPSMDJ15A	TPSMDJ15CA	PEMA	DEMA	15.0	16.70	18.50	5	24.4	122.95	2
TPSMDJ16A	TPSMDJ16CA	PEPA	DEPA	16.0	17.80	19.70	5	26.0	115.38	2
TPSMDJ17A	TPSMDJ17CA	PERA	DERA	17.0	18.90	20.90	5	27.6	108.70	2
TPSMDJ18A	TPSMDJ18CA	PETA	DETA	18.0	20.00	22.10	5	29.2	102.74	2
TPSMDJ19A	TPSMDJ19CA	PEBA	DEBA	19.0	21.10	23.30	5	30.8	97.47	2
TPSMDJ20A	TPSMDJ20CA	PEVA	DEVA	20.0	22.20	24.50	5	32.4	92.59	2
TPSMDJ22A	TPSMDJ22CA	PEXA	DEXA	22.0	24.40	26.90	5	35.5	84.51	2
TPSMDJ24A	TPSMDJ24CA	PEZA	DEZA	24.0	26.70	29.50	5	38.9	77.12	2
TPSMDJ26A	TPSMDJ26CA	PFEA	DFEA	26.0	28.90	31.90	5	42.1	71.26	2
TPSMDJ28A	TPSMDJ28CA	PFGA	DFGA	28.0	31.10	34.40	5	45.4	66.08	2
TPSMDJ30A	TPSMDJ30CA	PFKA	DFKA	30.0	33.30	36.80	5	48.4	61.98	2
TPSMDJ33A	TPSMDJ33CA	PFMA	DFMA	33.0	36.70	40.60	5	53.3	56.29	2
TPSMDJ36A	TPSMDJ36CA	PFPA	DFPA	36.0	40.00	44.20	5	58.1	51.64	2
TPSMDJ40A	TPSMDJ40CA	PFRA	DFRA	40.0	44.40	49.10	5	64.5	46.51	2
TPSMDJ43A	TPSMDJ43CA	PFTA	DFTA	43.0	47.80	52.80	5	69.4	43.23	2

**Note:**

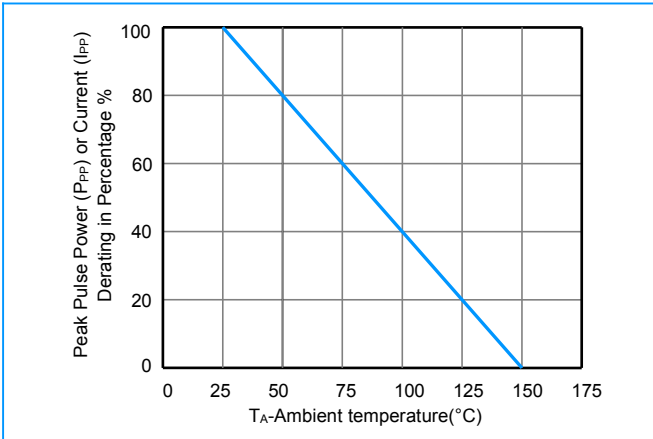
1. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
2. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double.

# Surface Mount Transient Voltage Suppressors(TVS)

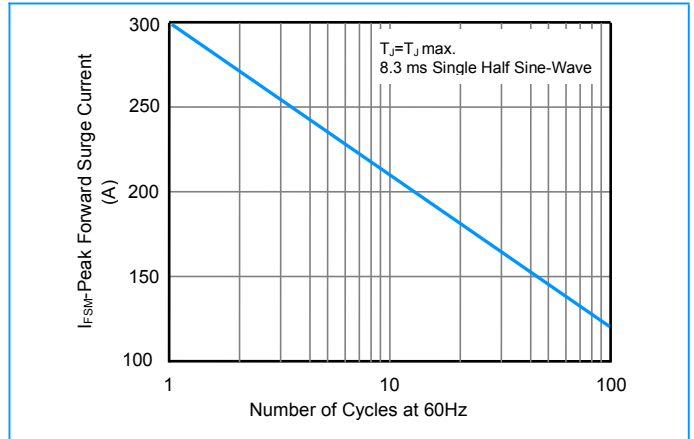
**TPSMDJ Series      10 to 43 V      3000W**

**Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

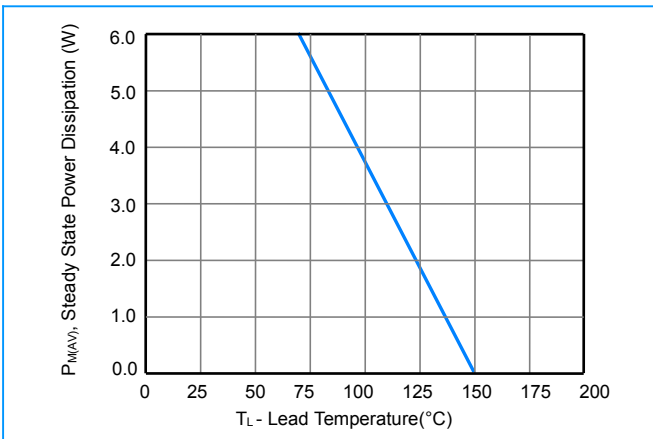
**Figure 1 - Pulse Derating Curve**



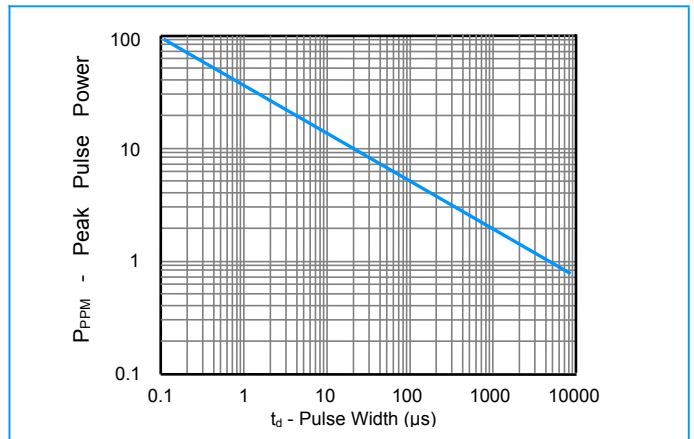
**Figure 2 - Maximum Non-Repetitive Surge Current**



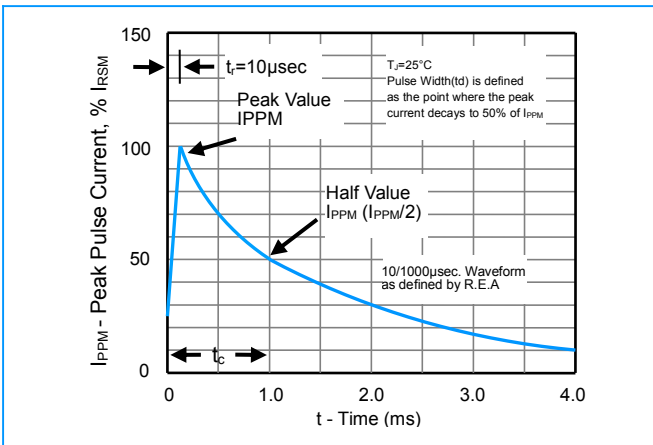
**Figure 3 - Steady State Power Derating Curve**



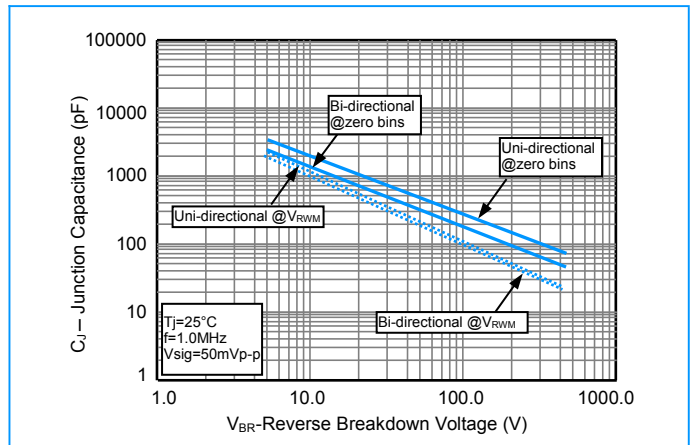
**Figure 4 - Peak Pulse Power Rating Curve**



**Figure 5 - Pulse Waveform**



**Figure 6 - Typical Junction Capacitance**

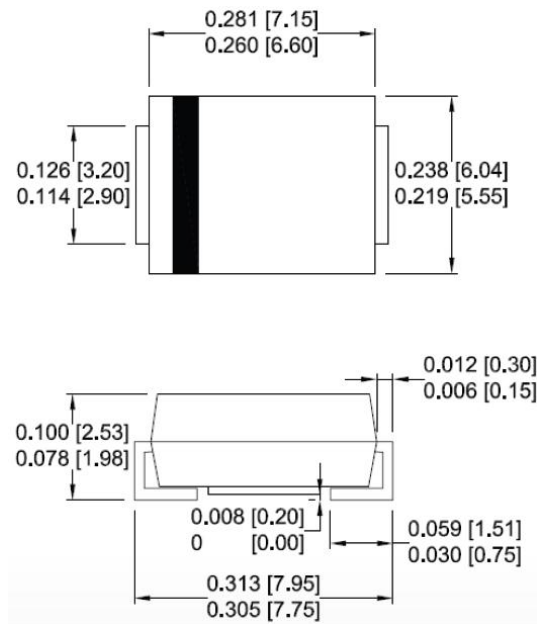


## Surface Mount Transient Voltage Suppressors(TVS)

TPSMDJ Series      10 to 43 V      3000W

### Dimensions

SMC/DO-214AB



Dimensions : inch [ mm ]

### Packaging

Part Number	Component Package	Quantity
TPSMDJ Series	SMC/DO-214AB	500 pcs