SOCAY

HF RoHS

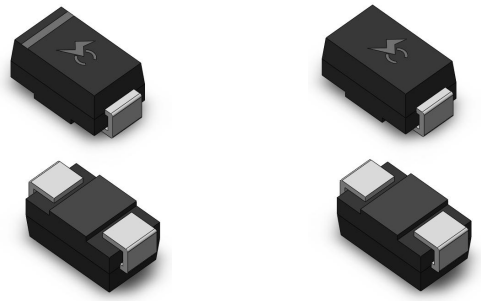
Surface Mount Transient Voltage Suppressors (TVS)

TPSMAJ Series | **5.0V to 85 V** | **400W** | **SMA/DO-214AC**

Features

- Glass passivated chip.
- 400W peak pulse power capability with a 10/1000 μs 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.

Uni-directional Bi-directional



SMA/DO-214AC

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℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000μs waveform(1)	P_{PP}	400	W
Peak pulse current wih a 10/1000μs waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at T_L = 75℃	P_D	1.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only(2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A for unidirectional only(3)	V_F	3.5/5.0	V
Operating junction and storage temperature range	T_J , T_{STG}	-55 to +150	℃

Notes:

(1)Non-repetitive current pulse per Fig.5 and derated above T_A= 25℃ 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<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V.

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TPSMAJ Series 5.0V to 85 V 400W SMA/DO-214AC

Electrical Characteristics (T_A=25℃ 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} (μA)
Uni	Bi	Uni	Bi		MIN	MAX				
TPSMAJ5.0A	TPSMAJ5.0CA	AEA	WEA	5.0	6.40	7.00	10	9.2	43.5	120
TPSMAJ6.0A	TPSMAJ6.0CA	AGA	WGA	6.0	6.67	7.37	10	10.3	38.8	120
TPSMAJ6.5A	TPSMAJ6.5CA	AKA	WKA	6.5	7.22	7.98	10	11.2	35.7	80
TPSMAJ7.0A	TPSMAJ7.0CA	AMA	WMA	7.0	7.78	8.60	10	12.0	33.3	50
TPSMAJ7.5A	TPSMAJ7.5CA	APA	WPA	7.5	8.33	9.21	1	12.9	31.0	50
TPSMAJ8.0A	TPSMAJ8.0CA	ARA	WRA	8.0	8.89	9.83	1	13.6	29.4	20
TPSMAJ8.5A	TPSMAJ8.5CA	ATA	WTA	8.5	9.44	10.40	1	14.4	27.8	10
TPSMAJ9.0A	TPSMAJ9.0CA	AVA	WVA	9.0	10.00	11.10	1	15.4	26.0	5
TPSMAJ10A	TPSMAJ10CA	AXA	WXA	10.0	11.10	12.30	1	17.0	23.53	5
TPSMAJ11A	TPSMAJ11CA	AZA	WZA	11.0	12.20	13.50	1	18.2	21.98	1
TPSMAJ12A	TPSMAJ12CA	BEA	XEA	12.0	13.30	14.70	1	19.9	20.10	1
TPSMAJ13A	TPSMAJ13CA	BGA	XGA	13.0	14.40	15.90	1	21.5	18.60	1
TPSMAJ14A	TPSMAJ14CA	BKA	XKA	14.0	15.60	17.20	1	23.2	17.24	1
TPSMAJ15A	TPSMAJ15CA	BMA	XMA	15.0	16.70	18.50	1	24.4	16.39	1
TPSMAJ16A	TPSMAJ16CA	BPA	XPA	16.0	17.80	19.70	1	26.0	15.38	1
TPSMAJ17A	TPSMAJ17CA	BRA	XRA	17.0	18.90	20.90	1	27.6	14.49	1
TPSMAJ18A	TPSMAJ18CA	BTA	XTA	18.0	20.00	22.10	1	29.2	13.70	1
TPSMAJ19A	TPSMAJ19CA	BBA	XBA	19.0	21.10	23.30	1	30.8	13.00	1
TPSMAJ20A	TPSMAJ20CA	BVA	XVA	20.0	22.20	24.50	1	32.4	12.35	1
TPSMAJ22A	TPSMAJ22CA	BXA	XXA	22.0	24.40	26.90	1	35.5	11.27	1
TPSMAJ24A	TPSMAJ24CA	BZA	XZA	24.0	26.70	29.50	1	38.9	10.28	1
TPSMAJ26A	TPSMAJ26CA	CEA	YEA	26.0	28.90	31.90	1	42.1	9.50	1
TPSMAJ28A	TPSMAJ28CA	CGA	YGA	28.0	31.10	34.40	1	45.4	8.81	1
TPSMAJ30A	TPSMAJ30CA	CKA	YKA	30.0	33.30	36.80	1	48.4	8.26	1
TPSMAJ33A	TPSMAJ33CA	CMA	YMA	33.0	36.70	40.60	1	53.3	7.50	1
TPSMAJ36A	TPSMAJ36CA	CPA	YPA	36.0	40.00	44.20	1	58.1	6.88	1
TPSMAJ40A	TPSMAJ40CA	CRA	YRA	40.0	44.40	49.10	1	64.5	6.20	1
TPSMAJ43A	TPSMAJ43CA	CTA	YTA	43.0	47.80	52.80	1	69.4	5.76	1
TPSMAJ45A	TPSMAJ45CA	CVA	YVA	45.0	50.00	55.30	1	72.7	5.50	1
TPSMAJ48A	TPSMAJ48CA	CXA	YXA	48.0	53.30	58.90	1	77.4	5.17	1
TPSMAJ51A	TPSMAJ51CA	CZA	YZA	51.0	56.70	62.70	1	82.4	4.85	1
TPSMAJ54A	TPSMAJ54CA	REA	ZEA	54.0	60.00	66.30	1	87.1	4.59	1
TPSMAJ58A	TPSMAJ58CA	RGA	ZGA	58.0	64.40	71.20	1	93.6	4.27	1
TPSMAJ60A	TPSMAJ60CA	RKA	ZKA	60.0	66.70	73.70	1	96.8	4.13	1

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TPSMAJ Series 5.0V to 85 V 400W SMA/DO-214AC

Electrical Characteristics (T_A=25℃ unless otherwise noted) (Continue)

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} (μA)
Uni	Bi	Uni	Bi		MIN	MAX				
TPSMAJ64A	TPSMAJ64CA	RMA	ZMA	64.0	71.10	78.60	1	103.0	3.88	1
TPSMAJ70A	TPSMAJ70CA	RPA	ZPA	70.0	77.80	86.00	1	113.0	3.54	1
TPSMAJ75A	TPSMAJ75CA	RRA	ZRA	75.0	83.30	92.10	1	121.0	3.31	1
TPSMAJ78A	TPSMAJ78CA	RTA	ZTA	78.0	86.70	95.80	1	126.0	3.17	1
TPSMAJ80A	TPSMAJ80CA	RBA	ZBA	80.0	88.80	97.60	1	129.6	3.09	1
TPSMAJ85A	TPSMAJ85CA	RVA	ZVA	85.0	94.40	104.00	1	137.0	2.92	1

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.

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 1 - Pulse Derating Curve

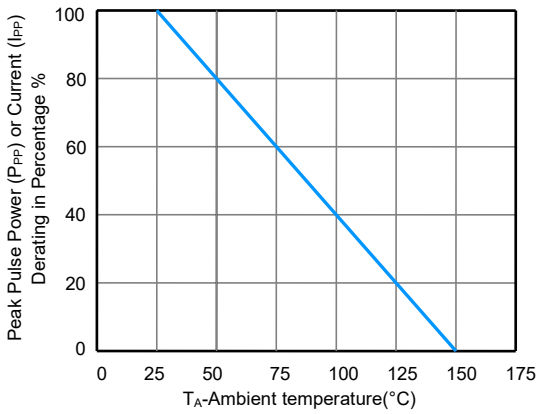

Figure 2 - Maximum Non-Repetitive Surge Current

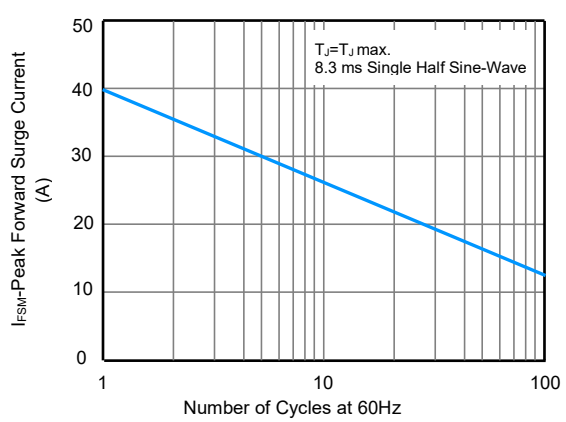

Figure 3 - Steady State Power Derating Curve

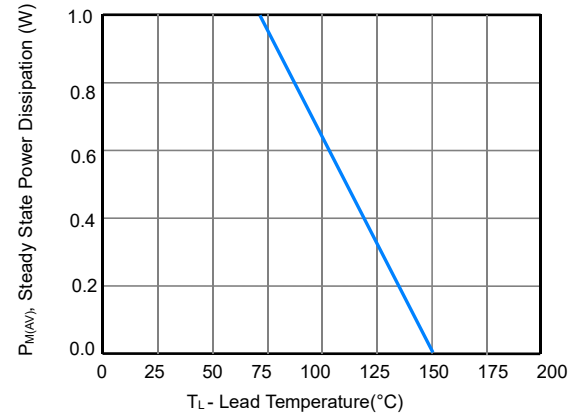

Figure 4 - Peak Pulse Power Rating Curve

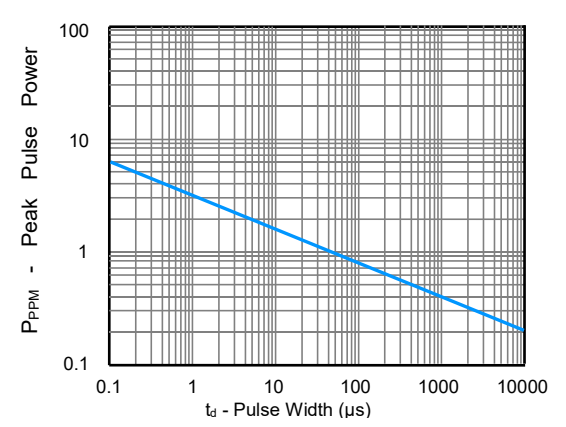

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Figure 5 - Pulse Waveform

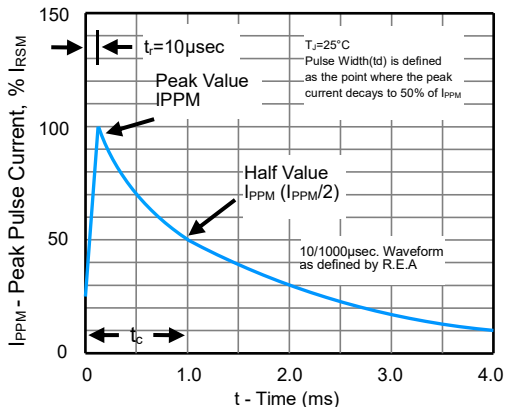
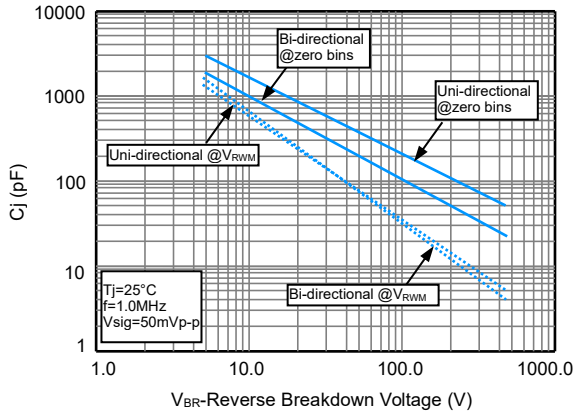
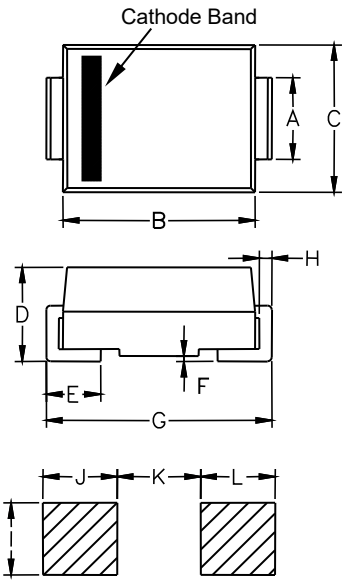


Figure 6 - Typical Junction Capacitance



Dimensions

DO-214AC (SMA)



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.053	0.065	1.35	1.65
B	0.167	0.183	4.25	4.65
C	0.098	0.114	2.50	2.90
D	0.078	0.095	1.98	2.41
E	0.030	0.060	0.76	1.52
F	0.002	0.008	0.051	0.203
G	0.194	0.208	4.93	5.28
H	0.006	0.012	0.15	0.31
I	0.067	-	1.70	-
J	0.082	-	2.10	-
K	-	0.090	-	2.30
L	0.082	-	2.10	-

Packaging

Part Number	Component Package	Quantity
TPSMAJ Series	SMA/DO-214AC	5000 pcs