600W, 6.8 - 440V Transient Voltage Suppressors

Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Available in unidirectional and bidirectional
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21definition
- 600 W peak pulse power capability with a 10/1000 μs waveform

RoHS COMPLIANT



SMB (DO-214AA)

Applications

- SMPS
- Adapters
- Monitor

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Peak power dissipation with a 10/1000us waveform	P_{PPM}	600	W
Peak pulse current with a 10/1000us waveform	I_{PPM}	See Next Table	A
Power dissipation, on infinite heat sink at T_L=75℃	P_D	3.75	W
Peak forward surge current, 8.3ms single half-sine wave	I_{FSM}	100	A
Typical Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	85	℃/W
Typical Thermal Resistance , Junction to Case	$R_{\theta JC}$	15	℃/W
Typical Thermal Resistance , Junction to Lead	$R_{\theta JL}$	20	℃/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	℃

Note：

1. Mounted on copper pad area of 0.2x0.2” (5.0 x 5.0mm) to each terminal.

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		UNI	BI	Min	Max					
P6SMB6.8A	P6SMB6.8CA	6V8A	6V8C	6.45	7.14	10	5.80	1000	57.1	10.5
P6SMB7.5A	P6SMB7.5CA	7V5A	7V5C	7.13	7.88	10	6.40	500	53.1	11.3
P6SMB8.2A	P6SMB8.2CA	8V2A	8V2C	7.79	8.61	10	7.02	200	49.6	12.1
P6SMB9.1A	P6SMB9.C1A	9V1A	9V1C	8.65	9.55	1.0	7.78	50	44.8	13.4
P6SMB10A	P6SMB10CA	10A	10C	9.5	10.5	1.0	8.55	10	41.4	14.5
P6SMB11A	P6SMB11CA	11A	11C	10.5	11.6	1.0	9.40	5.0	38.5	15.6
P6SMB12A	P6SMB12CA	12A	12C	11.4	12.6	1.0	10.2	5.0	35.9	16.7
P6SMB13A	P6SMB13CA	13A	13C	12.4	13.7	1.0	11.1	5.0	33.0	18.2
P6SMB15A	P6SMB15CA	15A	15C	14.3	15.8	1.0	12.8	1.0	28.3	21.2
P6SMB16A	P6SMB16CA	16A	16C	15.2	16.8	1.0	13.6	1.0	26.7	22.5
P6SMB18A	P6SMB18CA	18A	18C	17.1	18.9	1.0	15.3	1.0	23.8	25.2
P6SMB20A	P6SMB20CA	20A	20C	19.0	21.0	1.0	17.1	1.0	21.7	27.7
P6SMB22A	P6SMB22CA	22A	22C	20.9	23.1	1.0	18.8	1.0	19.6	30.6
P6SMB24A	P6SMB24CA	24A	24C	22.8	25.2	1.0	20.5	1.0	18.1	33.2
P6SMB27A	P6SMB27CA	27A	27C	25.7	28.4	1.0	23.1	1.0	16.0	37.5
P6SMB30A	P6SMB30CA	30A	30C	28.5	31.5	1.0	25.6	1.0	14.5	41.4
P6SMB33A	P6SMB33CA	33A	33C	31.4	34.7	1.0	28.2	1.0	13.1	45.7
P6SMB36A	P6SMB36CA	36A	36C	34.2	37.8	1.0	30.8	1.0	12.0	49.9
P6SMB39A	P6SMB39CA	39A	39C	37.1	41.0	1.0	33.3	1.0	11.1	53.9
P6SMB43A	P6SMB43CA	43A	43C	40.9	45.2	1.0	36.8	1.0	10.1	59.3
P6SMB47A	P6SMB47CA	47A	47C	44.7	49.4	1.0	40.2	1.0	9.3	64.8
P6SMB51A	P6SMB51CA	51A	51C	48.5	53.6	1.0	43.6	1.0	8.6	70.1
P6SMB56A	P6SMB56CA	56A	56C	53.2	58.8	1.0	47.8	1.0	7.8	77.0
P6SMB62A	P6SMB62CA	62A	62C	58.9	65.1	1.0	53.0	1.0	7.1	85.0
P6SMB68A	P6SMB68CA	68A	68C	64.6	71.4	1.0	58.1	1.0	6.5	92.0
P6SMB75A	P6SMB75CA	75A	75C	71.3	78.8	1.0	64.1	1.0	5.8	103
P6SMB82A	P6SMB82CA	82A	82C	77.9	86.1	1.0	70.1	1.0	5.3	113
P6SMB91A	P6SMB91CA	91A	91C	86.5	95.5	1.0	77.8	1.0	4.8	125
P6SMB100A	P6SMB100CA	100A	100C	95	105	1.0	85.5	1.0	4.4	137
P6SMB110A	P6SMB110CA	110A	110C	105	116	1.0	94.0	1.0	3.9	152
P6SMB120A	P6SMB120CA	120A	120C	114	126	1.0	102	1.0	3.6	165
P6SMB130A	P6SMB130CA	130A	130C	124	137	1.0	111	1.0	3.4	179
P6SMB150A	P6SMB150CA	150A	150C	143	158	1.0	128	1.0	2.9	207
P6SMB160A	P6SMB160CA	160A	160C	152	168	1.0	136	1.0	2.7	219
P6SMB170A	P6SMB170CA	170A	170C	162	179	1.0	145	1.0	2.6	234
P6SMB180A	P6SMB180CA	180A	180C	171	189	1.0	154	1.0	2.4	246

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		UNI	BI	Min	Max					
P6SMB200A	P6SMB200CA	200A	200C	190	210	1.0	171	1.0	2.2	274
P6SMB220A	P6SMB220CA	220A	220C	209	231	1.0	185	1.0	1.9	328
P6SMB250A	P6SMB250CA	250A	250C	237	263	1.0	214	1.0	1.8	344
P6SMB300A	P6SMB300CA	300A	300C	285	315	1.0	256	1.0	1.4	414
P6SMB350A	P6SMB350CA	350A	350C	332	368	1.0	300	1.0	1.2	482
P6SMB400A	P6SMB400CA	400A	400C	380	420	1.0	342	1.0	1.1	548
P6SMB440A	P6SMB440CA	440A	440C	418	462	1.0	376	1.0	1.0	602

Note：

1. Mounted on copper pad area of 0.2x0.2” (5.0 x 5.0mm) to each terminal.

Ratings and Characteristics Curves

(T_A = 25℃ unless otherwise noted)

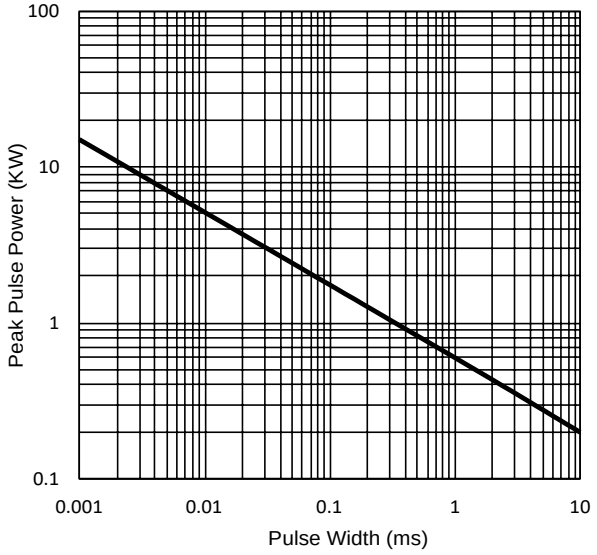


Fig.1 –Peak Pulse Power Derating Curve

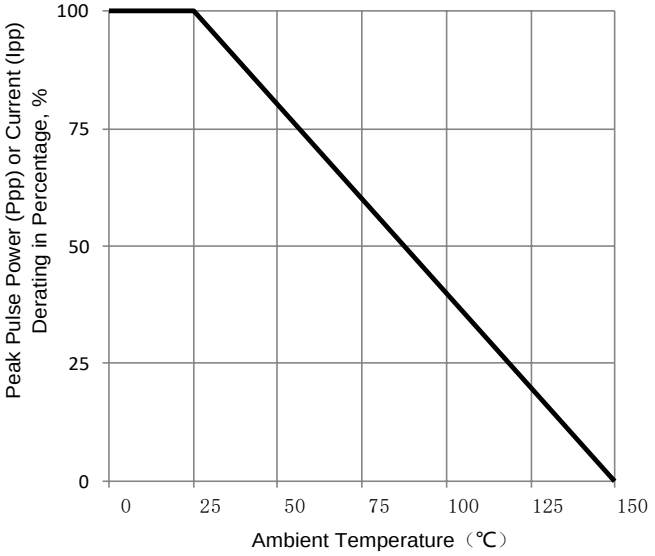


Fig.2 – Maximum Non-Repetitive Surge Current

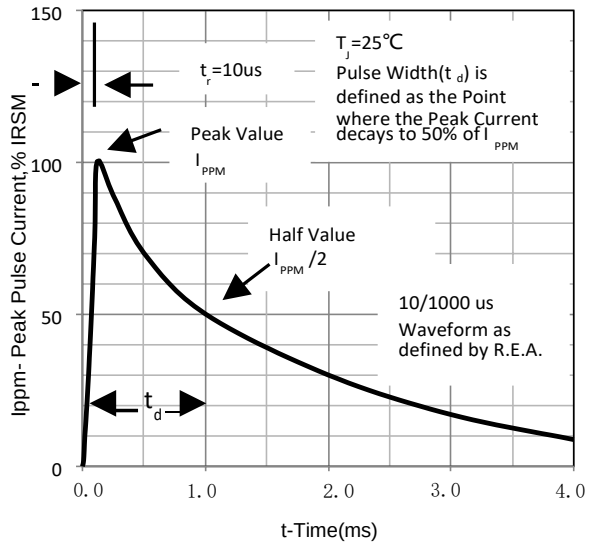


Fig.3 – Typical Forward Voltage Characteristics

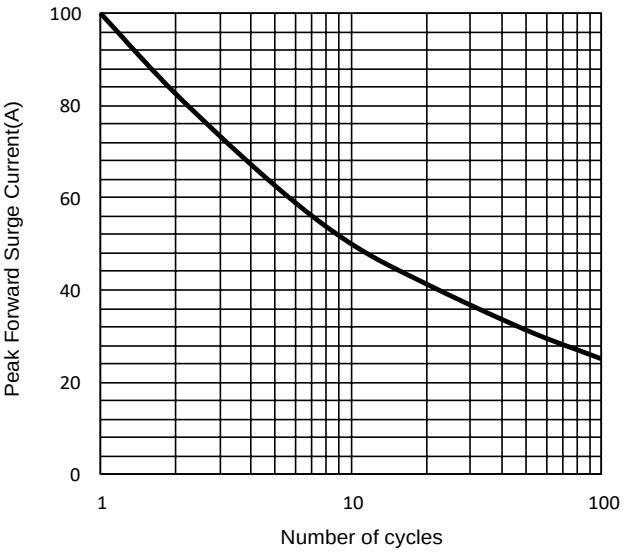
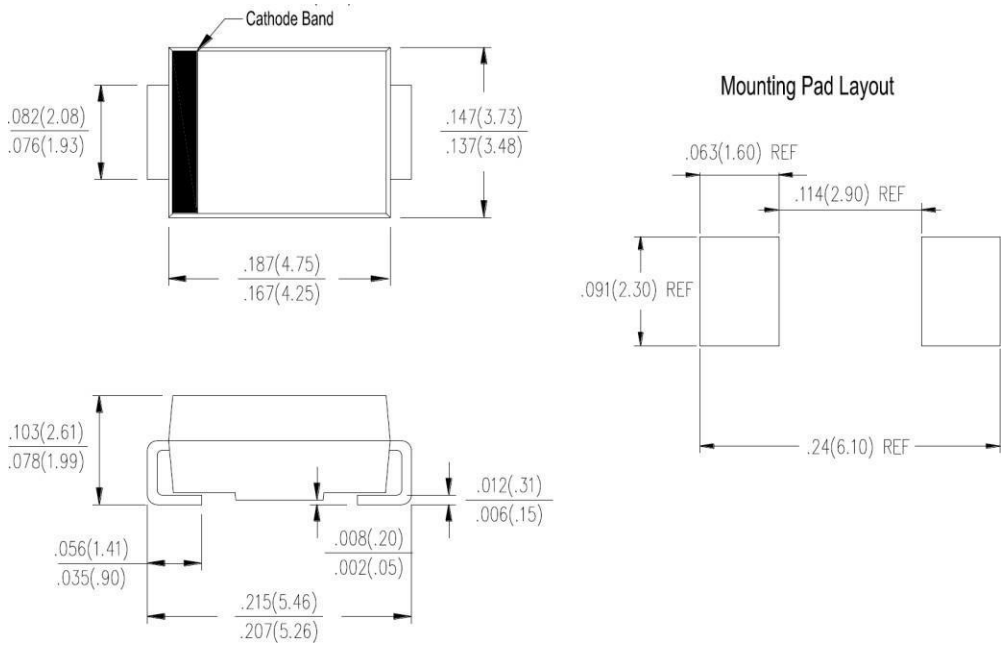


Fig.4 – Typical Reverse Current Characteristics

Package Outline Dimensions

in inches (millimeters)

SMB (DO-214AA)



Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.15	Released Datasheet
Rev.B	2023.10.20	Modify document format
Rev.C	2023.12.18	Update product range
Rev.D	2026.07.20	Update product range
Rev.E	2026.08.24	Update product range

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