

Features

- Peak power dissipation
600W@10 x 1000 us Pluse
- Low incremental surge resistance
- Excellent clamping capability
- Fast response time
- Low leakage current
- Halogen free and RoHS compliant

Applications

- Personal digital assistants (PDA)
- Cellular handsets & Accessories
- Handhelds and notebooks
- Portable instrumentation

Mechanical Characteristics

- DO-214AA(SMB) surface mount package

Dimensions and Pin Configuration



DO-214AA(SMB)



Pin Configuration

Maximum Ratings& Thermal Characteristics

(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power (tp=10/1000μs waveform)	P _{PPM}	600	W
Steady state power dissipation at T _A =50°C	P _{M(AV)}	5.0	W
Peak Pulse Current of on 10/1000us Waveform	I _{PPM}	See Table	A
Typical thermal resistance junction to ambient	R _{θJA}	100	°C/W
Storage & operating temperature range	T _{STG} ,T _J	-55~+150	°C

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

Part Number		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP}
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
TPSMBJ5.0A	TPSMBJ5.0CA	5.0	120	6.40	7.00	10	9.2	65.2
TPSMBJ6.0A	TPSMBJ6.0CA	6.0	120	6.67	7.37	10	10.3	58.3
TPSMBJ6.5A	TPSMBJ6.5CA	6.5	120	7.22	7.98	10	11.2	53.6
TPSMBJ7.0A	TPSMBJ7.0CA	7.0	50	7.78	8.60	10	12.0	50.0
TPSMBJ7.5A	TPSMBJ7.5CA	7.5	50	8.33	9.21	1	12.9	46.5
TPSMBJ8.0A	TPSMBJ8.0CA	8.0	20	8.89	9.83	1	13.6	44.1
TPSMBJ8.5A	TPSMBJ8.5CA	8.5	10	9.44	10.40	1	14.4	41.7
TPSMBJ9.0A	TPSMBJ9.0CA	9.0	5	10.00	11.10	1	15.4	39.0
TPSMBJ10A	TPSMBJ10CA	10	2	11.10	12.30	1	17.0	35.3
TPSMBJ11A	TPSMBJ11CA	11	1	12.20	13.50	1	18.2	33.0
TPSMBJ12A	TPSMBJ12CA	12	1	13.30	14.70	1	19.9	30.2
TPSMBJ13A	TPSMBJ13CA	13	1	14.40	15.90	1	21.5	27.9
TPSMBJ14A	TPSMBJ14CA	14	1	15.60	17.20	1	23.2	25.9
TPSMBJ15A	TPSMBJ15CA	15	1	16.70	18.50	1	24.4	24.6
TPSMBJ16A	TPSMBJ16CA	16	1	17.80	19.70	1	26.0	23.1
TPSMBJ17A	TPSMBJ17CA	17	1	18.90	20.90	1	27.6	21.8
TPSMBJ18A	TPSMBJ18CA	18	1	20.00	22.10	1	29.2	20.6
TPSMBJ20A	TPSMBJ20CA	20	1	22.20	24.50	1	32.4	18.6
TPSMBJ22A	TPSMBJ22CA	22	1	24.40	26.90	1	35.5	16.9
TPSMBJ24A	TPSMBJ24CA	24	1	26.70	29.50	1	38.9	15.4
TPSMBJ26A	TPSMBJ26CA	26	1	28.90	31.90	1	42.1	14.3
TPSMBJ28A	TPSMBJ28CA	28	1	31.10	34.40	1	45.4	13.2
TPSMBJ30A	TPSMBJ30CA	30	1	33.30	36.80	1	48.4	12.4
TPSMBJ33A	TPSMBJ33CA	33	1	36.70	40.60	1	53.3	11.3
TPSMBJ36A	TPSMBJ36CA	36	1	40.00	44.20	1	58.1	10.4
TPSMBJ40A	TPSMBJ40CA	40	1	44.40	49.10	1	64.5	9.3
TPSMBJ43A	TPSMBJ43CA	43	1	47.80	52.80	1	69.4	8.7
TPSMBJ45A	TPSMBJ45CA	45	1	50.00	55.30	1	72.7	8.3
TPSMBJ48A	TPSMBJ48CA	48	1	53.30	58.90	1	77.4	7.8

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

Part Number		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP}
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
TPSMBJ51A	TPSMBJ51CA	51	1	56.70	62.70	1	82.4	7.3
TPSMBJ54A	TPSMBJ54CA	54	1	60.00	66.30	1	87.1	6.9
TPSMBJ58A	TPSMBJ58CA	58	1	64.40	71.20	1	93.6	6.4
TPSMBJ60A	TPSMBJ60CA	60	1	66.70	73.70	1	96.8	6.2
TPSMBJ64A	TPSMBJ64CA	64	1	71.10	78.60	1	103.0	5.8
TPSMBJ70A	TPSMBJ70CA	70	1	77.80	86.00	1	113.0	5.3
TPSMBJ75A	TPSMBJ75CA	75	1	83.30	92.10	1	121.0	5.0
TPSMBJ78A	TPSMBJ78CA	78	1	86.70	95.80	1	126.0	4.8
TPSMBJ85A	TPSMBJ85CA	85	1	94.40	104.0	1	137.0	4.4
TPSMBJ90A	TPSMBJ90CA	90	1	100.0	111.0	1	146.0	4.1
TPSMBJ100A	TPSMBJ100CA	100	1	111.0	123.0	1	162.0	3.7
TPSMBJ110A	TPSMBJ110CA	110	1	122.0	135.0	1	177.0	3.4
TPSMBJ120A	TPSMBJ120CA	120	1	133.0	147.0	1	193.0	3.1
TPSMBJ130A	TPSMBJ130CA	130	1	144.0	159.0	1	209.0	2.9
TPSMBJ150A	TPSMBJ150CA	150	1	167.0	185.0	1	243.0	2.5
TPSMBJ160A	TPSMBJ160CA	160	1	178.0	197.0	1	259.0	2.3
TPSMBJ170A	TPSMBJ170CA	170	1	189.0	209.0	1	275.0	2.2
TPSMBJ180A	TPSMBJ180CA	180	1	201.0	222.0	1	292.0	2.1
TPSMBJ190A	TPSMBJ190CA	190	1	211.0	234.0	1	307.0	2.0
TPSMBJ200A	TPSMBJ200CA	200	1	224.0	247.0	1	324.0	1.9
TPSMBJ210A	TPSMBJ210CA	210	1	233.0	258.0	1	337.0	1.8
TPSMBJ220A	TPSMBJ220CA	220	1	246.0	272.0	1	356.0	1.7
TPSMBJ250A	TPSMBJ250CA	250	1	279.0	309.0	1	405.0	1.5
TPSMBJ300A	TPSMBJ300CA	300	1	335.0	371.0	1	486.0	1.3
TPSMBJ350A	TPSMBJ350CA	350	1	391.0	432.0	1	567.0	1.1
TPSMBJ400A	TPSMBJ400CA	400	1	447.0	494.0	1	648.0	0.9
TPSMBJ440A	TPSMBJ440CA	440	1	492.0	543.0	1	713.0	0.8

For bi-directional type having V_{VRM} of 10 Volts and less, the I_R limit is double.

For parts without A, the V_{BR} is +10%.

Typical Characteristics Curves

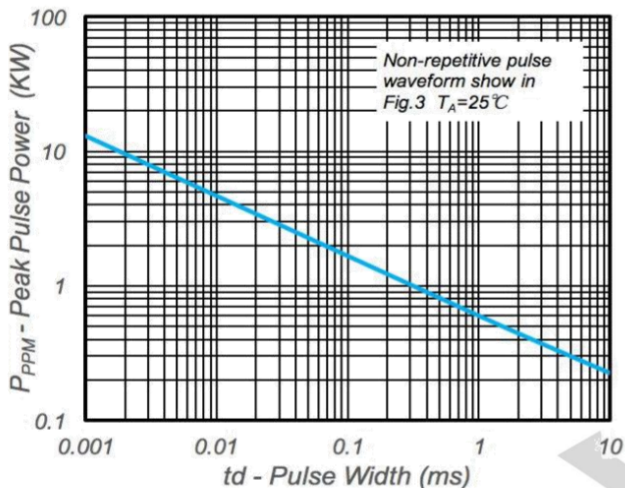


Fig.1 - Peak Pulse Power Rating

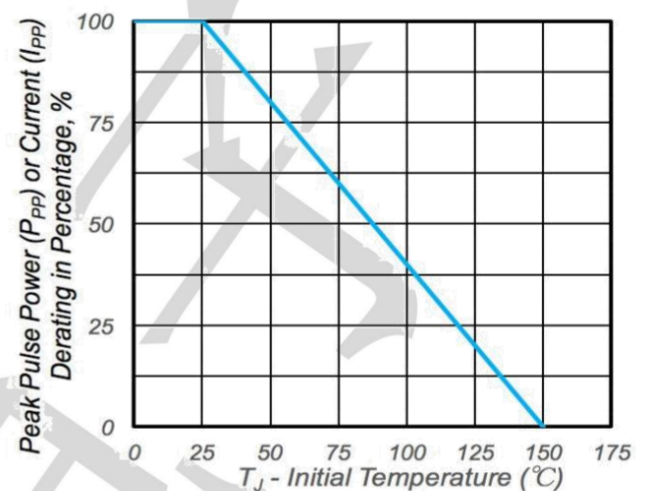


Fig.2 - Pulse Derating Curve

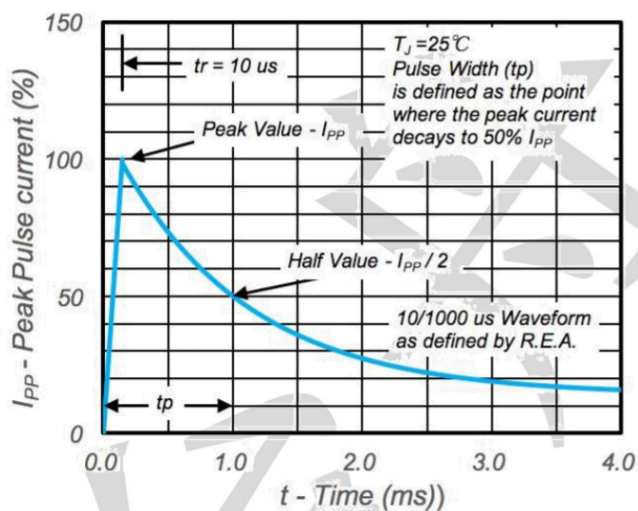


Fig.3 - Pulse Waveform

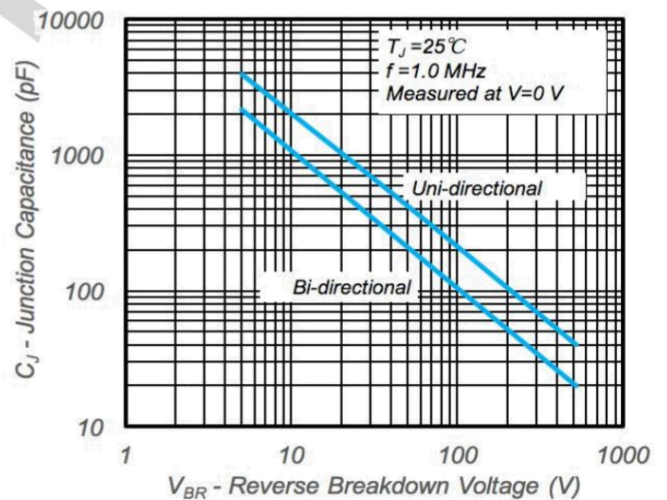
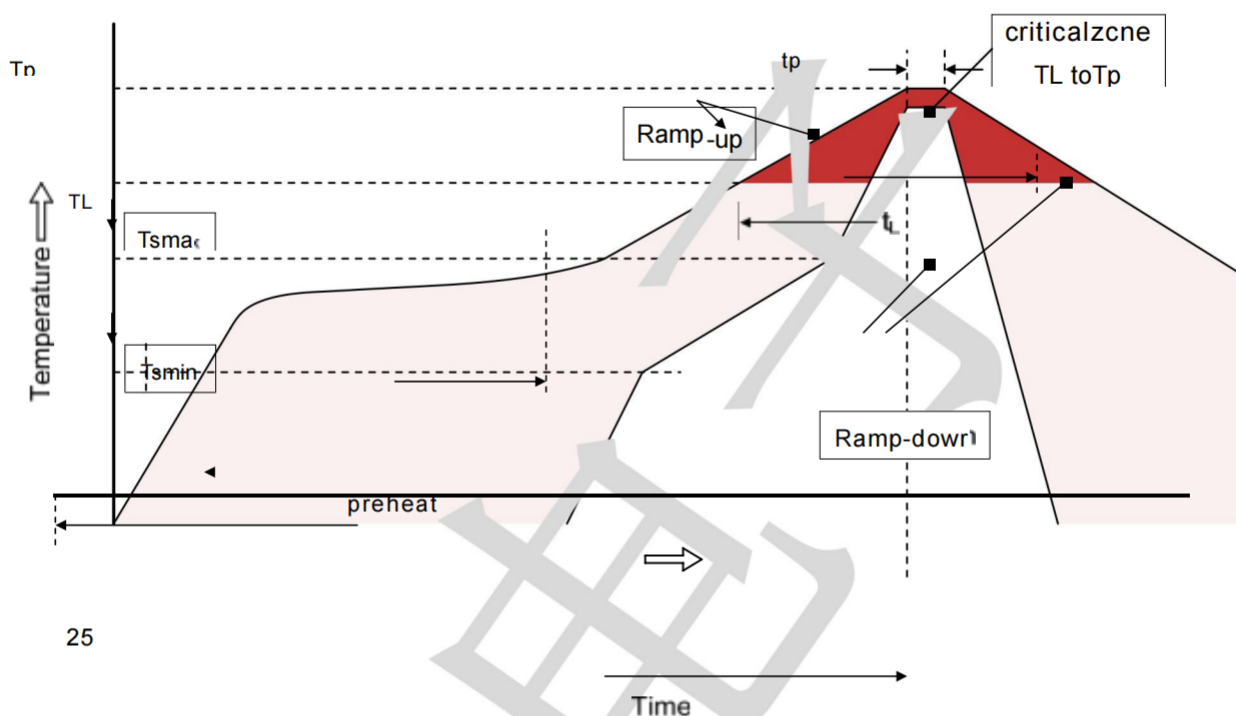


Fig.4 - Typical Junction Capacitance

Recommended Soldering Conditions

Reflow Soldering

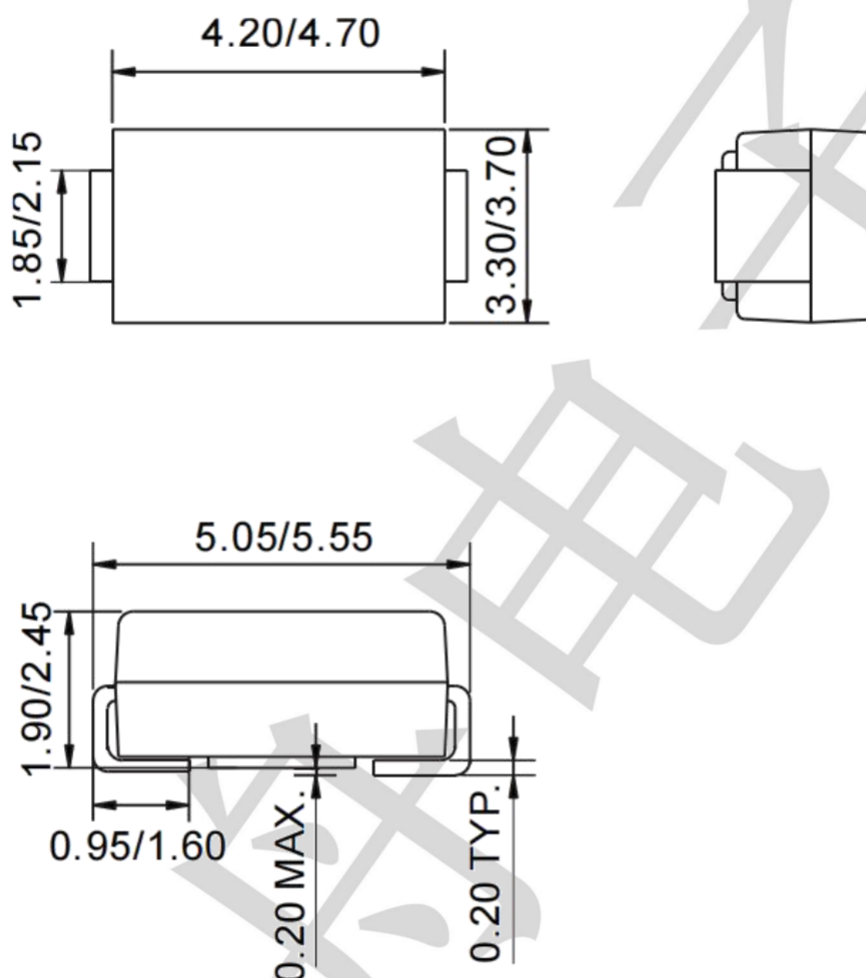


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min (T_{Smin})	150°C
-Temperature Max (T_{Smax})	200°C
-Time (min to max) (ts)	60-180 seconds
T_{Smax} to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Package Outline Dimensions (unit: mm)

SMB



Mounting Pad Layout (unit: mm)

