

Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 1000W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260°C/10s at terminals
- Meets MSL level 1
- Component in accordance to RoHS



DO-214AA(SMB)

Mechanical Data

- Package: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
- Polarity: For uni-directional types the band denotes athode end, no marking on bi-directional types

Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

Maximum Ratings and Electrical Characteristics

(T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Max. Peak Power Dissipation, with a 10/1000us Waveform (Fig.1) ^{1,2}	P _{PPM}	1000	W
Max. Power Dissipation, on Infinite Heat Sink at T _L =75°C	P _D	5.0	W
Max. Peak Forward Surge Current, 8.3ms Single Half Sine-Wave, Uni-directional Only ²	I _{FSM}	100	A
Typical Thermal Resistance, Junction to Lead	R _{θJL}	20	°C/W
Typical Thermal Resistance, Junction to Ambient	R _{θJA}	100	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C
Maximum Instantaneous Forward Voltage at 50A for Uni-directional Only	V _F	3.5	V

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

Part Number (Uni)	Part Number (Bi)	Marking Code (Uni)	Marking Code (Bi)	Breakdown Voltage V _{BR} @ I _T			Maximum Reverse Leakage I _R @ V _{RWM} (μA) ⁵	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} (A) ⁴	Maximum Clamping Voltage V _c @ I _{PP} (V)
				Min (V)	Max (V)	I _T (mA) ³				
GSMB10J5.0A	GSMB10J5.0CA	105.0A	105.0C	6.4	7.07	10	1000	5	108.70	9.2
GSMB10J6.0A	GSMB10J6.0CA	106.0A	106.0C	6.67	7.37	10	1000	6	97.09	10.3
GSMB10J6.5A	GSMB10J6.5CA	106.5A	106.5C	7.22	7.98	10	500	6.5	89.29	11.2
GSMB10J7.0A	GSMB10J7.0CA	107.0A	107.0C	7.78	8.6	10	200	7	83.33	12
GSMB10J7.5A	GSMB10J7.5CA	107.5A	107.5C	8.33	9.21	1	100	7.5	77.52	12.9
GSMB10J8.0A	GSMB10J8.0CA	108.0A	108.0C	8.89	9.83	1	50	8	73.53	13.6
GSMB10J8.5A	GSMB10J8.5CA	108.5A	108.5C	9.44	10.4	1	20	8.5	69.44	14.4
GSMB10J9.0A	GSMB10J9.0CA	109.0A	109.0C	10	11.1	1	10	9	64.94	15.4
GSMB10J10A	GSMB10J10CA	1010A	1010C	11.1	12.3	1	5	10	58.82	17
GSMB10J11A	GSMB10J11CA	1011A	1011C	12.2	13.5	1	5	11	54.95	18.2
GSMB10J12A	GSMB10J12CA	1012A	1012C	13.3	14.7	1	5	12	50.25	19.9
GSMB10J13A	GSMB10J13CA	1013A	1013C	14.4	15.9	1	1	13	46.51	21.5
GSMB10J14A	GSMB10J14CA	1014A	1014C	15.6	17.2	1	1	14	43.10	23.2
GSMB10J15A	GSMB10J15CA	1015A	1015C	16.7	18.5	1	1	15	40.98	24.4
GSMB10J16A	GSMB10J16CA	1016A	1016C	17.8	19.7	1	1	16	38.46	26
GSMB10J17A	GSMB10J17CA	1017A	1017C	18.9	20.9	1	1	17	36.23	27.6
GSMB10J18A	GSMB10J18CA	1018A	1018C	20	22.1	1	1	18	34.25	29.2
GSMB10J19A	GSMB10J19CA	1019A	1019C	21.1	23.3	1	1	19	32.47	30.8
GSMB10J20A	GSMB10J20CA	1020A	1020C	22.2	24.5	1	1	20	30.86	32.4
GSMB10J22A	GSMB10J22CA	1022A	1022C	24.4	26.9	1	1	22	28.17	35.5
GSMB10J24A	GSMB10J24CA	1024A	1024C	26.7	29.5	1	1	24	25.71	38.9
GSMB10J26A	GSMB10J26CA	1026A	1026C	28.9	31.9	1	1	26	23.75	42.1
GSMB10J28A	GSMB10J28CA	1028A	1028C	31.1	34.4	1	1	28	22.03	45.4
GSMB10J30A	GSMB10J30CA	1030A	1030C	33.3	36.8	1	1	30	20.66	48.4
GSMB10J33A	GSMB10J33CA	1033A	1033C	36.7	40.6	1	1	33	18.76	53.3
GSMB10J36A	GSMB10J36CA	1036A	1036C	40	44.2	1	1	36	17.21	58.1
GSMB10J40A	GSMB10J40CA	1040A	1040C	44.4	49.1	1	1	40	15.50	64.5
GSMB10J43A	GSMB10J43CA	1043A	1043C	47.8	52.8	1	1	43	14.41	69.4

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

Part Number (Uni)	Part Number (Bi)	Marking Code (Uni)	Marking Code (Bi)	Breakdown Voltage V _{BR} @ I _T			Maximum Reverse Leakage I _R @ V _{RWM} (μA) ⁵	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} (A) ⁴	Maximum Clamping Voltage V _c @ I _{PP} (V)
				Min (V)	Max (V)	I _T (mA) ³				
GSMB10J45A	GSMB10J45CA	1045A	1045C	50	55.3	1	1	45	13.76	72.7
GSMB10J48A	GSMB10J48CA	1048A	1048C	53.3	58.9	1	1	48	12.92	77.4
GSMB10J51A	GSMB10J51CA	1051A	1051C	56.7	62.7	1	1	51	12.14	82.4
GSMB10J54A	GSMB10J54CA	1054A	1054C	60	66.3	1	1	54	11.48	87.1
GSMB10J58A	GSMB10J58CA	1058A	1058C	64.4	71.2	1	1	58	10.68	93.6
GSMB10J60A	GSMB10J60CA	1060A	1060C	66.7	73.7	1	1	60	10.33	96.8
GSMB10J64A	GSMB10J64CA	1064A	1064C	71.1	78.6	1	1	64	9.71	103
GSMB10J70A	GSMB10J70CA	1070A	1070C	77.8	86	1	1	70	8.85	113
GSMB10J75A	GSMB10J75CA	1075A	1075C	83.3	92.1	1	1	75	8.26	121
GSMB10J78A	GSMB10J78CA	1078A	1078C	86.7	95.8	1	1	78	7.94	126
GSMB10J80A	GSMB10J80CA	1080A	1080C	88.8	97.6	1	1	80	7.72	129.6
GSMB10J85A	GSMB10J85CA	1085A	1085C	94.4	104	1	1	85	7.30	137

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.
2. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.
3. Pulse test: t_p ≤50ms.
4. Surge current waveform per Fig.3 and derated per Fig.2.
5. For bi-directional types having V_{RWM} of 10V and less, the I_R limit is doubled.

Ratings and Characteristic Curves

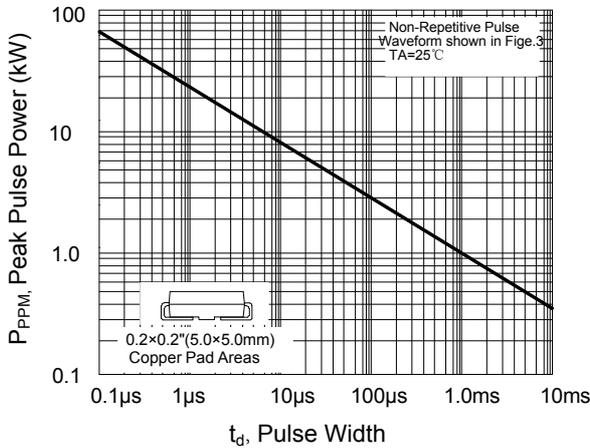


Figure 1. Peak Pulse Power Rating Curve

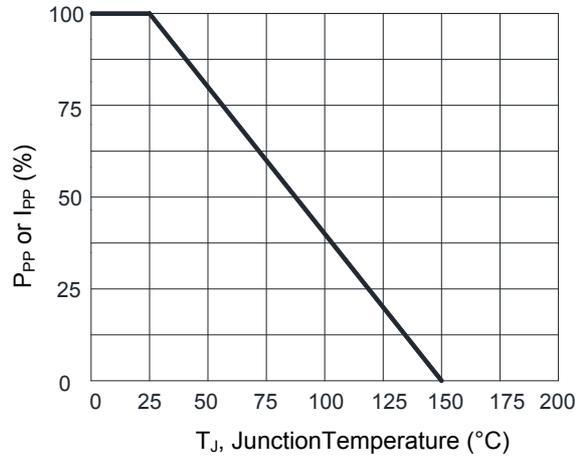


Figure 2. Pulse Power or Current vs. T_J

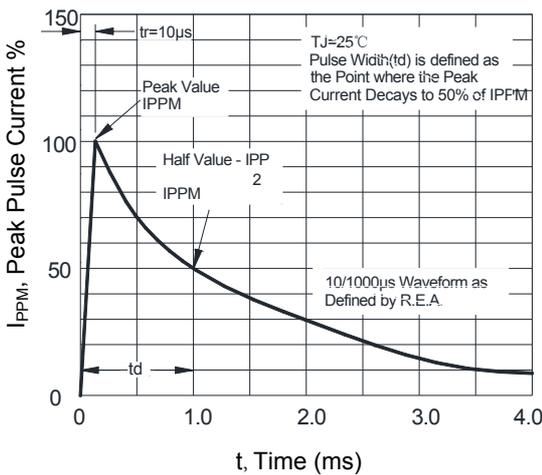


Figure 3. Pulse Waveform

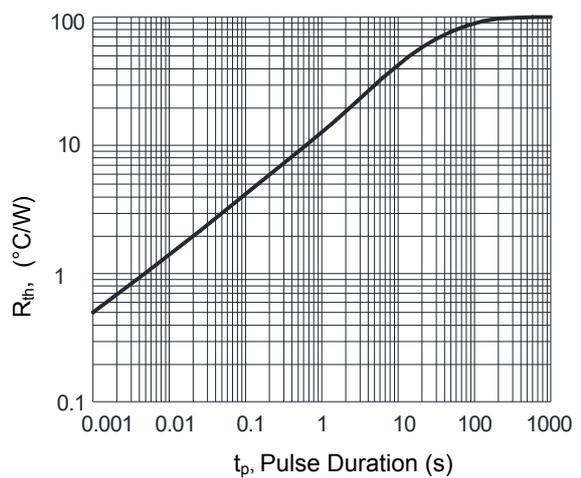


Figure 4. Typical Transient Thermal Impedance

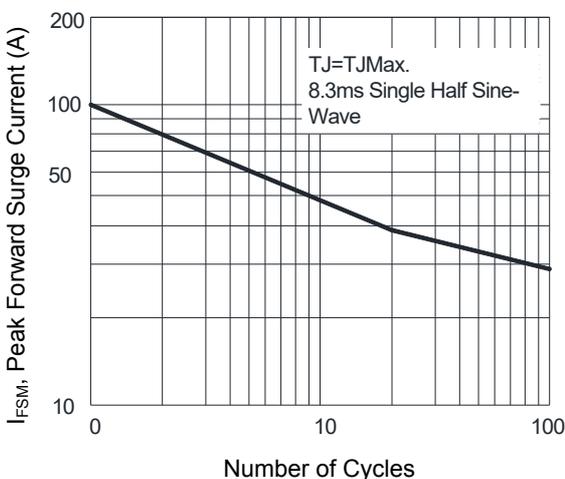


Figure 5. Maximum Non-Repetitive Surge Current

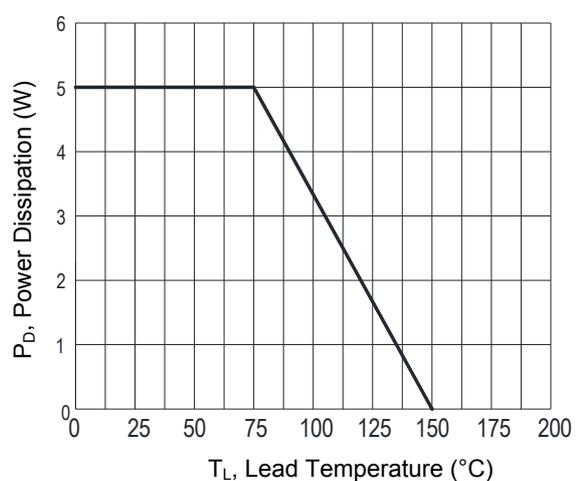
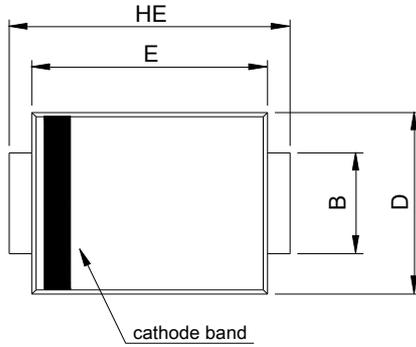
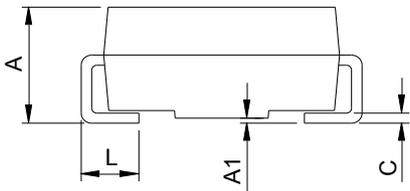


Figure 6. Steady State Power Dissipation

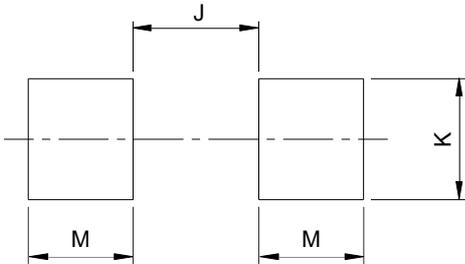
Package Outline Dimensions DO-214AA(SMB)



SMB (DO-214AA)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.00	0.20	0.000	0.008
B	1.95	2.20	0.077	0.087
C	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	4.06	4.60	0.160	0.181
HE	5.10	5.60	0.201	0.220
L	0.76	1.60	0.030	0.063



Recommended Pad Layout



Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.60	-	0.102
K	2.20	-	0.087	-
M	1.80	-	0.071	-

Order Information

Device	Package	Reel size	Carrier	Quantity
GSMB10Jx	DO-214AA(SMB)	13 Inches	Tape & Reel	3,000 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com