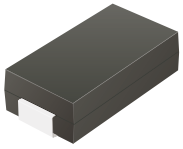
3.0SMBJ18CA-HF Thru. 3.0SMBJ75CA-HF

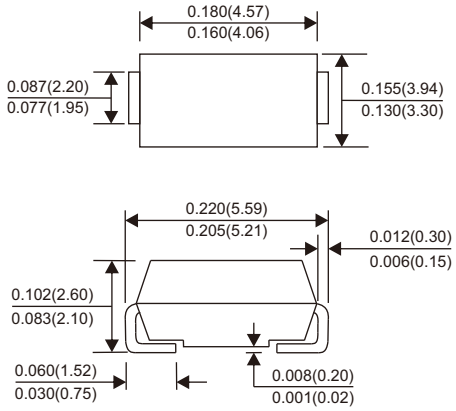
Working Peak Reverse Voltage: 18 to 75 V
Peak Pulse Power: 3000 W
RoHS Device
Halogen Free



Features

- Glass passivated chip.
- 3000W peak pulse power capability with a 10/1000μs waveform, repetition rate (duty cycles): 0.01%.
- Built-in strain relief.
- Low inductance.
- Low leakage.
- Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- Typical maximum temperature coefficient △V_{BR}=0.1%xV_{BR}@25°C x△T
- IEC-61000-4-2 ESD 30kV (Air), 30kV (Contact).
- High temperature soldering: 260°C/40 seconds at terminals.
- Matte tin lead-free plated.

SMB/DO-214AA



Dimensions in inches and (millimeter)

Mechanical Data

- Case: SMB/DO-214AA, molded plastic over glass passivated junction.
- Epoxy: UL 94V-0 rated flame retardant.
- Terminal: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

Circuit Diagram

Bi-directional

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

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000μs waveform (Note 1)	P_{PP}	3000	W
Peak pulse current with a 10/1000μs waveform (Note 1)	I_{PP}	See next table	A
Power dissipation on infinite heatsink at T_L=50°C	P_D	6.5	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Notes: 1. Non-repetitive current pulse per Fig.5 and derated above T_A=25°C per Fig.1.
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

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

Part No.	Breakdown voltage V_{BR} @ I_T			Max. reverse leakage I_R @ V_{RWM}	Working peak reverse voltage	Max. reverse surge current	Max. clamping voltage V_C @ I_{PP}	Marking code
	Min (V)	Max (V)	I_T (mA)	I_R (μA)	V_{RWM} (V)	I_{PP} (A)	VC (V)	BI
3.0SMBJ18CA-HF	20.0	22.1	1	10	18	102.7	29.2	18CA
3.0SMBJ22CA-HF	24.4	26.9	1	1	22	84.5	35.5	22CA
3.0SMBJ24CA-HF	26.7	29.5	1	1	24	77.1	38.9	24CA
3.0SMBJ28CA-HF	31.1	34.4	1	1	28	66.1	45.4	28CA
3.0SMBJ30CA-HF	33.3	36.8	1	1	30	62.0	48.4	30CA
3.0SMBJ33CA-HF	36.7	40.6	1	1	33	56.3	53.3	33CA
3.0SMBJ36CA-HF	40.0	44.2	1	1	36	51.6	58.1	36CA
3.0SMBJ48CA-HF	53.3	58.9	1	1	48	38.8	77.4	48CA
3.0SMBJ51CA-HF	56.7	62.7	1	1	51	36.4	82.4	51CA
3.0SMBJ54CA-HF	60.0	66.3	1	1	54	34.4	87.1	54CA
3.0SMBJ58CA-HF	64.4	71.2	1	1	58	32.1	93.6	58CA
3.0SMBJ64CA-HF	71.1	78.6	1	1	64	29.1	103	64CA
3.0SMBJ70CA-HF	77.8	86.0	1	1	70	26.6	113	70CA
3.0SMBJ75CA-HF	83.3	92.1	1	1	75	24.8	121	75CA

Typical Rating and Characteristic Curves (3.0SMBJ-HF Series)

Fig.1 - Pulse Derating Curve

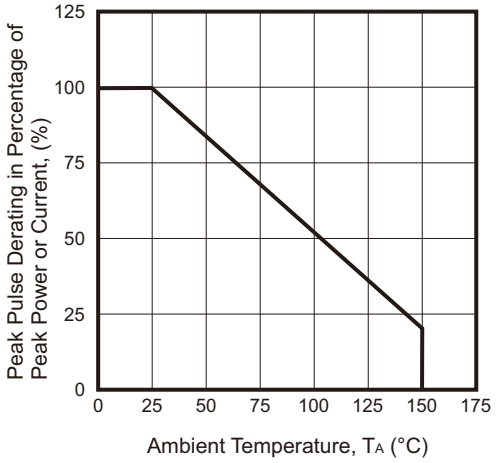


Fig.2 - Maximum Non-Repetitive Surge Current

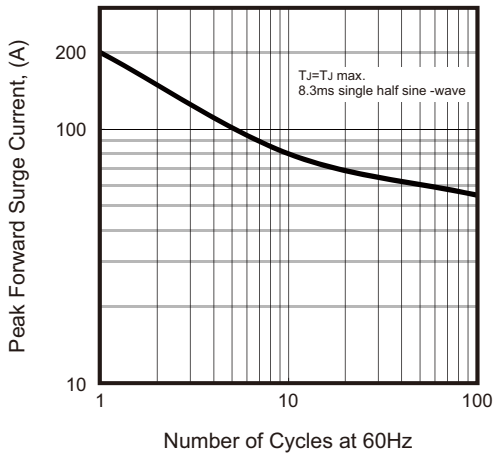


Fig.3 - Pulse Waveform

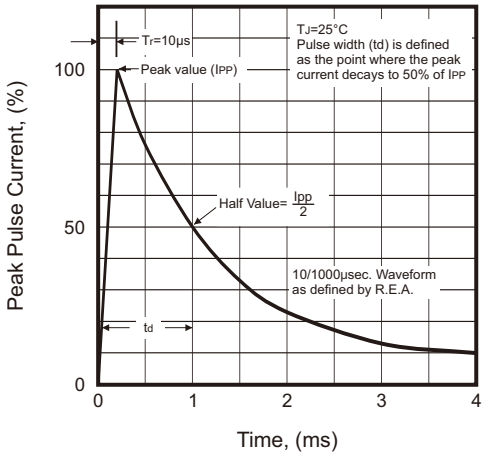


Fig.4 - Peak Pulse Power Rating Curve

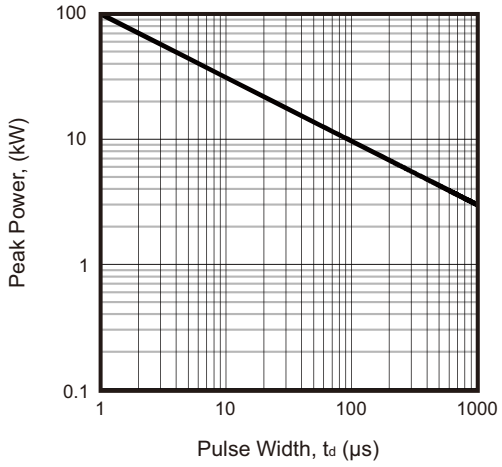
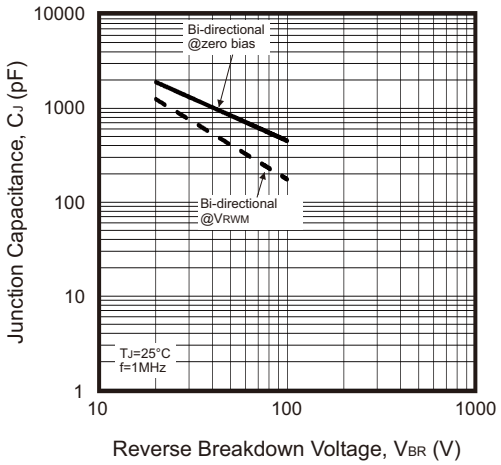
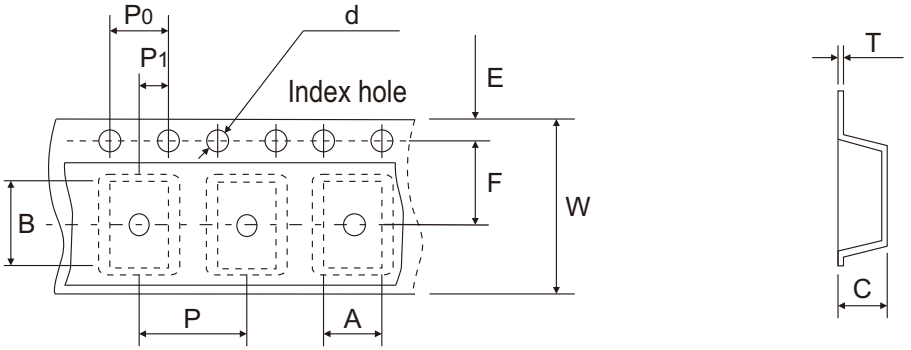
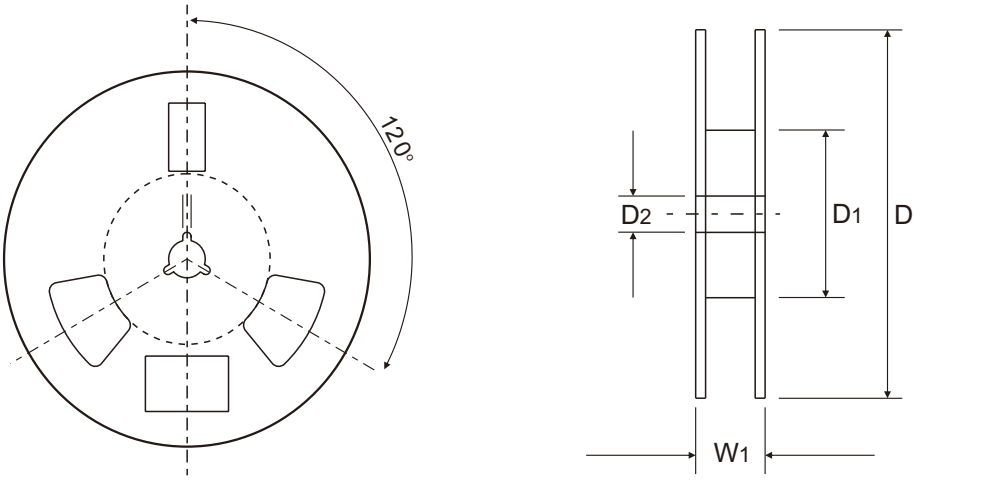


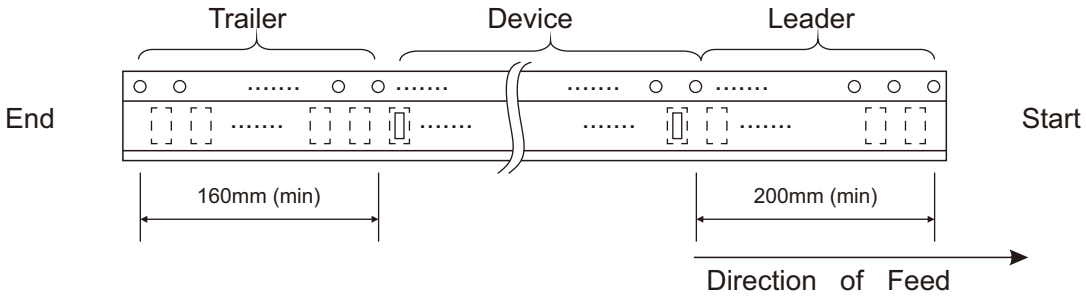
Fig.5 - Typical Junction Capacitance



Reel Taping Specification







	SYMBOL	A	B	C	d	D	D1	D2
DO-214AA (SMB)	(mm)	3.80 ± 0.15	5.70 ± 0.10	2.55 ± 0.10	1.55 ± 0.10	330.00 ± 1.00	75.00 ± 1.00	14.00 ± 1.00
	(inch)	0.150 ± 0.006	0.224 ± 0.004	0.100 ± 0.004	0.061 ± 0.004	12.992 ± 0.039	2.953 ± 0.039	0.551 ± 0.039

	SYMBOL	E	F	P	P0	P1	T	W	W1
DO-214AA (SMB)	(mm)	1.75 ± 0.10	5.50 ± 0.10	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.30 ± 0.10	12.00 ± 0.30	17.00 Min
	(inch)	0.069 ± 0.004	0.217 ± 0.004	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.012 ± 0.004	0.472 ± 0.012	0.669 Min

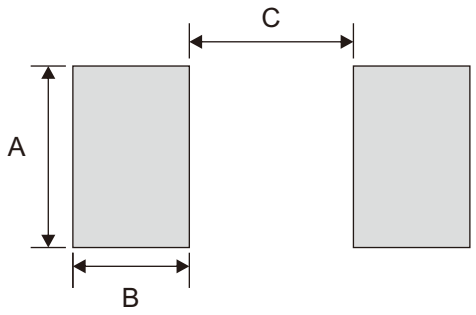
Marking Code

Part Number	Marking Code
3.0SMBJ-HF Series	See Page.2

XXXX = Marking code (see Page.2)

Suggested P.C.B. PAD Layout

SIZE	SMB/DO-214AA	
	(mm)	(inch)
A	2.40 Min	0.094 Min
B	1.54 Min	0.061 Min
C	2.17 Max	0.085 Max



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DO-214AA (SMB)	3,000	13