

Features

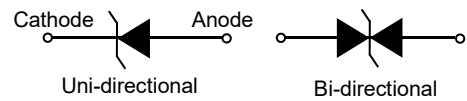
- Glass passivated chip.
- 600W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01%.
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- Range: SMBJ3.3A(CA) thru. SMBJ440A(CA)



DO-214AA

Mechanical Characteristics

- Case: DO-214AA/SMB molded plastic.
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar.
- Mounting position: Any.
- Weight: 0.092 gram (approx.)
- RoHS Compliant



Circuit Diagram

Absolute Maximum Ratings (TA=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating junction and storage temperature range	T _J /T _{STG}	-55 to +150	°C
Steady state power dissipation at T _L =75°C	P _{M(AV)}	5.0	W
Peak pulse power dissipation on 10/1000 μ s waveform	P _{PP}	600	W
Maximum instantaneous forward voltage at 50A for unidirectional	V _F	5.0	V
Peak forward surge current, 8.3ms single half sine wave (Note 3)	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

Notes: Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

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

Part Number		Reverse Stand off Voltage V_{RWM} (Volts)	Breakdown Voltage $V_{BR}(\text{Volts})@I_T$		Test Current I_T (mA)	Maximum Clamping Voltage $V_c@I_{PP}$ (Volts)	Maximum PeakPulse Current I_{pp} (Amps)	Maximum Reverse Leakage $I_R@V_{RWM}$ (μA)
			MIN	MAX				
SMBJ3.3A	SMBJ3.3CA	3.3	4.20	6.55	1	8.7	69.1	850
SMBJ5.0A	SMBJ5.0CA	5.0	6.40	7.07	10	9.2	65.2	800
SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.37	10	10.3	58.3	800
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.60	10	12.0	50.0	200
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	12.9	46.5	100
SMBJ8.0A	SMBJ8.0CA	8.0	8.89	9.83	1	13.6	44.1	50
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.40	1	14.4	41.7	20
SMBJ9.0A	SMBJ9.0CA	9.0	10.00	11.10	1	15.4	39.0	10
SMBJ10A	SMBJ10CA	10	11.10	12.30	1	17.0	35.3	5
SMBJ11A	SMBJ11CA	11	12.20	13.50	1	18.2	33.0	5
SMBJ12A	SMBJ12CA	12	13.30	14.7	1	19.9	30.2	5
SMBJ13A	SMBJ13CA	13	14.40	15.90	1	21.5	27.9	5
SMBJ14A	SMBJ14CA	14	15.60	17.20	1	23.2	25.9	5
SMBJ15A	SMBJ15CA	15	16.70	18.50	1	24.4	24.6	5
SMBJ16A	SMBJ16CA	16	17.80	19.70	1	26.0	23.1	5
SMBJ17A	SMBJ17CA	17	18.90	20.90	1	27.6	21.7	5
SMBJ18A	SMBJ18CA	18	20.00	22.10	1	29.2	20.5	5
SMBJ20A	SMBJ20CA	20	22.20	24.50	1	32.4	18.5	5
SMBJ22A	SMBJ22CA	22	24.40	26.90	1	35.5	16.9	5
SMBJ24A	SMBJ24CA	24	26.70	29.50	1	38.9	15.4	5
SMBJ26A	SMBJ26CA	26	28.90	31.90	1	42.1	14.3	5
SMBJ28A	SMBJ28CA	28	31.10	34.40	1	45.4	13.2	5
SMBJ30A	SMBJ30CA	30	33.30	36.80	1	48.4	12.4	5
SMBJ33A	SMBJ33CA	33	36.70	40.60	1	53.3	11.3	5
SMBJ36A	SMBJ36CA	36	40.00	44.20	1	58.1	10.3	5
SMBJ40A	SMBJ40CA	40	44.40	49.10	1	64.5	9.3	5
SMBJ43A	SMBJ43CA	43	47.80	52.80	1	69.4	8.6	5

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

Part Number		Reverse Stand off Voltage V _{RWM} (Volts)	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current I _T (mA)	Maximum Clamping Voltage V _C @I _{PP} (Volts)	Maximum PeakPuls e Current I _{PP} (Amps)	Maximum Reverse Leakage I _R @V _{RWM} (μA)
UNI-POLAR	BI-POLAR		MIN	MAX				
SMBJ45A	SMBJ45CA	45	50.00	55.30	1	72.7	8.3	5
SMBJ48A	SMBJ48CA	48	53.30	58.90	1	77.4	7.8	5
SMBJ51A	SMBJ51CA	51	56.70	62.70	1	82.4	7.3	5
SMBJ54A	SMBJ54CA	54	60.00	66.30	1	87.1	6.9	5
SMBJ58A	SMBJ58CA	58	64.40	71.20	1	93.6	6.4	5
SMBJ60A	SMBJ60CA	60	66.70	73.70	1	96.8	6.2	5
SMBJ64A	SMBJ64CA	64	71.10	78.60	1	103	5.8	5
SMBJ70A	SMBJ70CA	70	77.80	86.00	1	113	5.3	5
SMBJ75A	SMBJ75CA	75	83.30	92.10	1	121	5.0	5
SMBJ78A	SMBJ78CA	78	86.70	95.80	1	126	4.8	5
SMCJ85A	SMCJ85CA	85	94.40	104	1	137	4.4	5
SMBJ90A	SMBJ90CA	90	100	111	1	146	4.1	5
SMBJ100A	SMBJ100CA	100	111	123	1	162	3.7	5
SMBJ110A	SMBJ110CA	110	122	135	1	177	3.4	5
SMBJ120A	SMBJ120CA	120	133	147	1	193	3.1	5
SMBJ130A	SMBJ130CA	130	144	159	1	209	2.9	5
SMBJ150A	SMBJ150CA	150	167	185	1	243	2.5	5
SMBJ160A	SMBJ160CA	160	178	197	1	259	2.3	5
SMBJ170A	SMBJ170CA	170	189	209	1	275	2.2	5
SMBJ180A	SMBJ180CA	180	201	222	1	292	2.1	5
SMBJ200A	SMBJ200CA	200	224	247	1	324	1.9	5
SMBJ220A	SMBJ220CA	220	246	272	1	356	1.7	5
SMBJ250A	SMBJ250CA	250	279	309	1	405	1.5	5
SMBJ300A	SMBJ300CA	300	335	371	1	486	1.3	5
SMBJ350A	SMBJ350CA	350	391	432	1	567	1.1	5
SMBJ400A	SMBJ400CA	400	447	494	1	648	0.9	5
SMBJ440A	SMBJ440CA	440	492	543	1	713	0.9	5

Typical Characteristics

Fig.1 - Peak Pulse Power Rating Curve

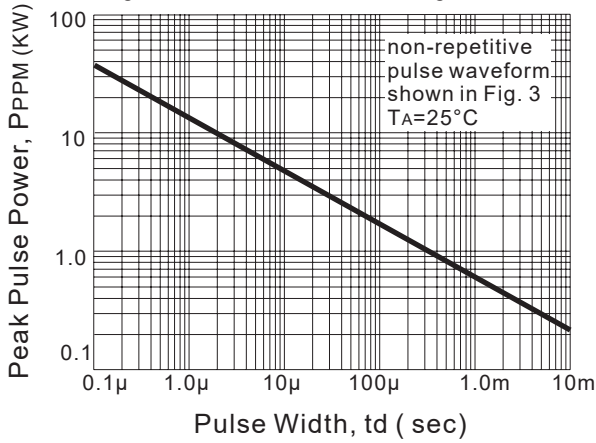


Fig.2 - Pulse Derating Curve

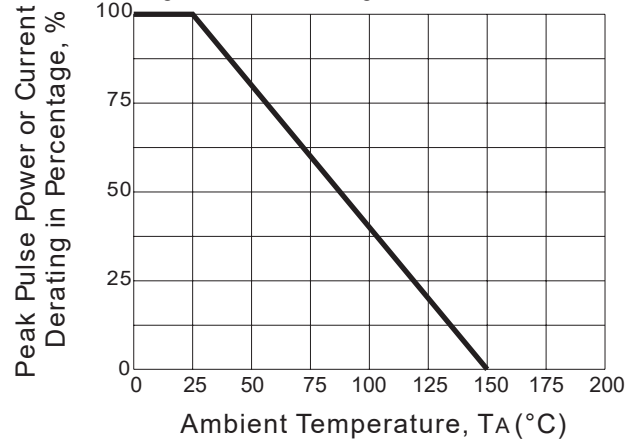


Fig.3 - Pulse Waveform

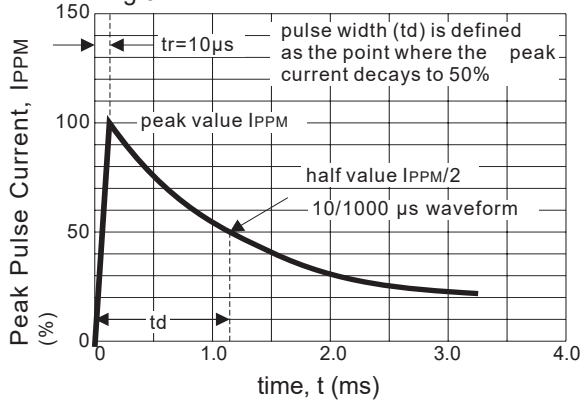


Fig.4 - Typical Junction Capacitance

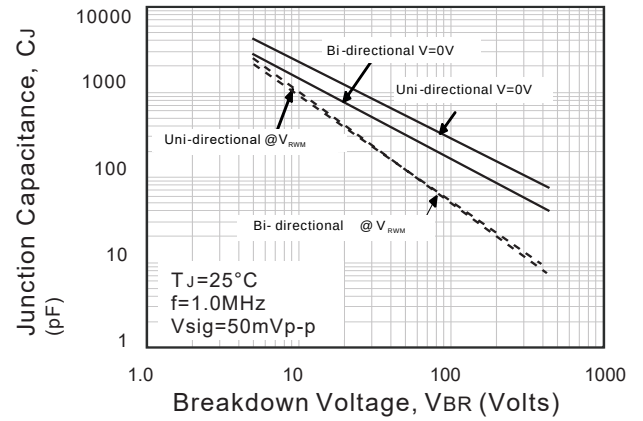


Fig.5 - Steady State Power Derating Curve

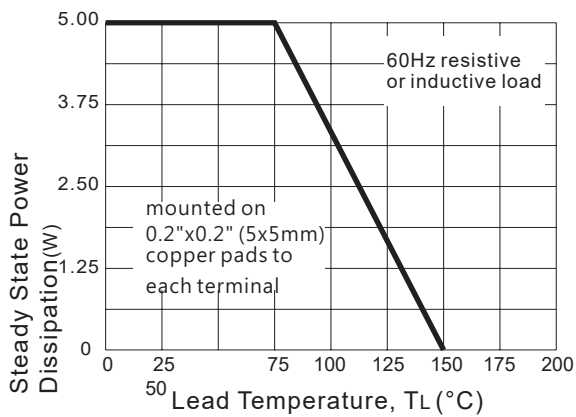
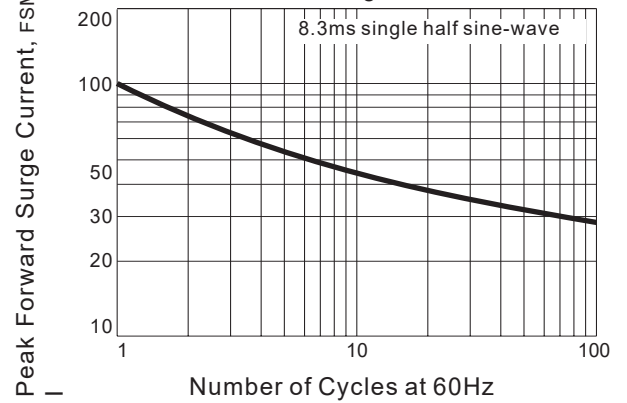
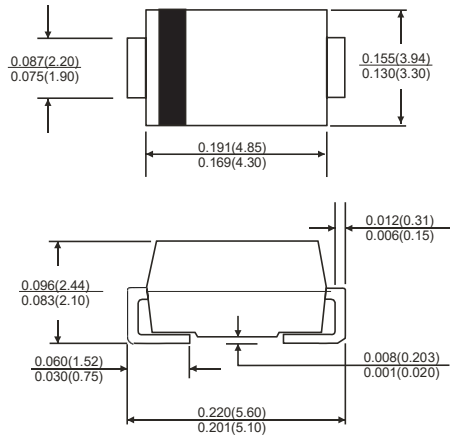
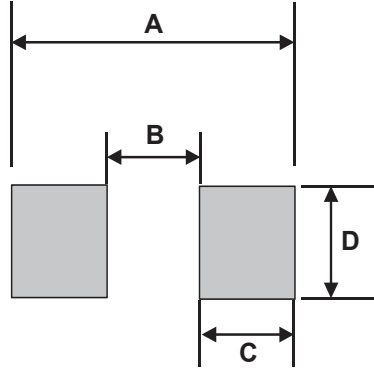


Fig.6 - Maximum Non-Repetitive Forward Surge Current



Dimensions in inches and (millimeter)

Suggested PAD Layout

SIZE	DO-214AA(SMB)		
	(mm)	(inch)	
A	5.60	0.220	
B	2.16 MAX	0.085 MAX	
C	1.52 MIN	0.060 MIN	
D	2.18 MIN	0.086 MIN	

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SMBJ Series	DO-214AA (SMB)	3000	13	Tape and reel