



E480232

Features

- AEC-Q101 Qualified
- For Surface Mount Applications
- Excellent Clamping Capability
- Fast Response Time: Typical Less Than 1ps From 0V to V_{BR} min
- High Temp Soldering: 260°C / 10 Seconds at Terminals
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, $\pm 30\text{kV}$ (Air), $\pm 30\text{kV}$ (Contact)

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000 μs Waveform (Note 3)	I_{PPM}	See Next Table	A
Peak Pulse Power Dissipation (Note 3)	P_{PPM}	600	W
Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$	P_D	5.0	W
Peak Forward Surge Current Unidirectional Only (Note 4)	I_{FSM}	100	A

Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig.4.
4. 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.

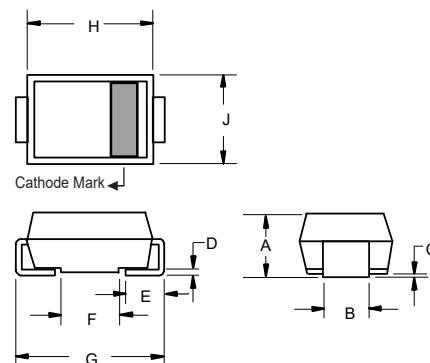
Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

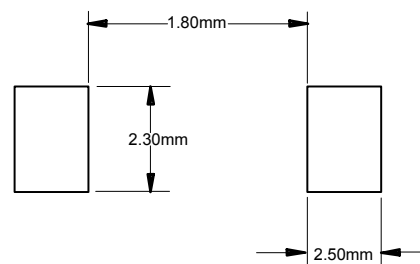
600Watt TVS
5.0 to 190
Volts

SMB (DO-214AA)
(LEAD FRAME)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.079	0.103	2.00	2.62	
B	0.075	0.087	1.91	2.21	
C	0.002	0.008	0.05	0.20	
D	0.006	0.012	0.15	0.31	
E	0.030	0.060	0.76	1.52	
F	0.065	0.091	1.65	2.32	
G	0.200	0.220	5.08	5.59	
H	0.160	0.191	4.06	4.85	
J	0.130	0.155	3.30	3.94	

Suggested Solder Pad Layout



Thermal Characteristics

Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	°C/W
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	25	°C/W

Note:

5. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC Part Number		Working Peak Reverse Voltage	Breakdown Voltage V_{BR} @ I_T			Maximum Clamping Voltage @ I_{PP}	Maximum Reverse Surge Current	Maximum Reverse Leakage @ V_{RWM}	Device Marking Code	
(Uni)	(Bi)	$V_{RWM}(V)$	Min (V)	Max (V)	I_T (mA)	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	Uni	Bi
SMBJ5.0AHE3	SMBJ5.0CAHE3	5	6.40	7.07	10	9.2	65.2	800	KE	AE
SMBJ6.0AHE3	SMBJ6.0CAHE3	6	6.67	7.37	10	10.3	58.3	800	KG	AG
SMBJ6.5AHE3	SMBJ6.5CAHE3	6.5	7.22	7.98	10	11.2	53.6	500	KK	AK
SMBJ7.0AHE3	SMBJ7.0CAHE3	7	7.78	8.60	10	12.0	50.0	200	KM	AM
SMBJ7.5AHE3	SMBJ7.5CAHE3	7.5	8.33	9.21	1	12.9	46.5	100	KP	AP
SMBJ8.0AHE3	SMBJ8.0CAHE3	8	8.89	9.83	1	13.6	44.1	50	KR	AR
SMBJ8.5AHE3	SMBJ8.5CAHE3	8.5	9.44	10.40	1	14.4	41.7	10	KT	AT
SMBJ9.0AHE3	SMBJ9.0CAHE3	9	10.00	11.10	1	15.4	39.0	5	KV	AV
SMBJ10AHE3	SMBJ10CAHE3	10	11.10	12.30	1	17.0	35.3	1	KX	AX
SMBJ11AHE3	SMBJ11CAHE3	11	12.20	13.50	1	18.2	33.0	1	KZ	AZ
SMBJ12AHE3	SMBJ12CAHE3	12	13.30	14.70	1	19.9	30.2	1	LE	BE
SMBJ13AHE3	SMBJ13CAHE3	13	14.40	15.90	1	21.5	27.9	1	LG	BG
SMBJ14AHE3	SMBJ14CAHE3	14	15.60	17.20	1	23.2	25.8	1	LK	BK
SMBJ15AHE3	SMBJ15CAHE3	15	16.70	18.50	1	24.4	24.0	1	LM	BM
SMBJ16AHE3	SMBJ16CAHE3	16	17.80	19.70	1	26.0	23.1	1	LP	BP
SMBJ17AHE3	SMBJ17CAHE3	17	18.90	20.90	1	27.6	21.7	1	LR	BR
SMBJ18AHE3	SMBJ18CAHE3	18	20.00	22.10	1	29.2	20.5	1	LT	BT
SMBJ20AHE3	SMBJ20CAHE3	20	22.20	24.50	1	32.4	18.5	1	LV	BV
SMBJ22AHE3	SMBJ22CAHE3	22	24.40	26.90	1	35.5	16.9	1	Lx	Bx
SMBJ24AHE3	SMBJ24CAHE3	24	26.70	29.50	1	38.9	15.4	1	LZ	BZ
SMBJ26AHE3	SMBJ26CAHE3	26	28.90	31.90	1	42.1	14.2	1	ME	CE
SMBJ28AHE3	SMBJ28CAHE3	28	31.10	34.40	1	45.4	13.2	1	MG	CG
SMBJ30AHE3	SMBJ30CAHE3	30	33.30	36.80	1	48.4	12.4	1	MK	CK
SMBJ33AHE3	SMBJ33CAHE3	33	36.70	40.60	1	53.3	11.3	1	MM	CM
SMBJ36AHE3	SMBJ36CAHE3	36	40.00	44.20	1	58.1	10.3	1	MP	CP
SMBJ40AHE3	SMBJ40CAHE3	40	44.40	49.10	1	64.5	9.3	1	MR	CR
SMBJ43AHE3	SMBJ43CAHE3	43	47.80	52.80	1	69.4	8.6	1	MT	CT
SMBJ45AHE3	SMBJ45CAHE3	45	50.00	55.30	1	72.7	8.3	1	MV	CV
SMBJ48AHE3	SMBJ48CAHE3	48	53.30	58.90	1	77.4	7.7	1	Mx	Cx
SMBJ51AHE3	SMBJ51CAHE3	51	56.70	62.70	1	82.4	7.3	1	MZ	CZ
SMBJ54AHE3	SMBJ54CAHE3	54	60.00	66.30	1	87.1	6.9	1	NE	DE
SMBJ58AHE3	SMBJ58CAHE3	58	64.40	71.20	1	93.6	6.4	1	NG	DG
SMBJ60AHE3	SMBJ60CAHE3	60	66.70	73.70	1	96.8	6.2	1	NK	DK
SMBJ64AHE3	SMBJ64CAHE3	64	71.10	78.60	1	103.0	5.8	1	NM	DM
SMBJ70AHE3	SMBJ70CAHE3	70	77.80	86.00	1	113.0	5.3	1	NP	DP
SMBJ75AHE3	SMBJ75CAHE3	75	83.30	92.10	1	121.0	4.9	1	NR	DR
SMBJ78AHE3	SMBJ78CAHE3	78	86.70	95.80	1	126.0	4.7	1	NT	DT
SMBJ80AHE3	SMBJ80CAHE3	80	88.80	97.60	1	129.6	4.6	1	NU	DU
SMBJ85AHE3	SMBJ85CAHE3	85	94.40	104.00	1	137.0	4.4	1	NV	DV
SMBJ90AHE3	SMBJ90CAHE3	90	100.00	111.00	1	146.0	4.1	1	NX	DX
SMBJ100AHE3	SMBJ100CAHE3	100	111.00	123.00	1	162.0	3.7	1	NZ	DZ
SMBJ110AHE3	SMBJ110CAHE3	110	122.00	135.00	1	177.0	3.4	1	PE	EE
SMBJ120AHE3	SMBJ120CAHE3	120	133.00	147.00	1	193.0	3.1	1	PG	EG
SMBJ130AHE3	SMBJ130CAHE3	130	144.00	159.00	1	209.0	2.9	1	PK	EK
SMBJ140AHE3	SMBJ140CAHE3	140	155.00	171.00	1	226.8	2.6	1	PL	EL
SMBJ150AHE3	SMBJ150CAHE3	150	167.00	185.00	1	243.0	2.5	1	PM	EM
SMBJ160AHE3	SMBJ160CAHE3	160	178.00	197.00	1	259.0	2.3	1	PP	EP
SMBJ170AHE3	SMBJ170CAHE3	170	189.00	209.00	1	275.0	2.2	1	PR	ER
SMBJ180AHE3	SMBJ180CAHE3	180	201.00	222.00	1	292.0	2.1	1	PT	ET
SMBJ190AHE3	SMBJ190CAHE3	190	211.00	232.00	1	307.8	2.0	1	PU	EU

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

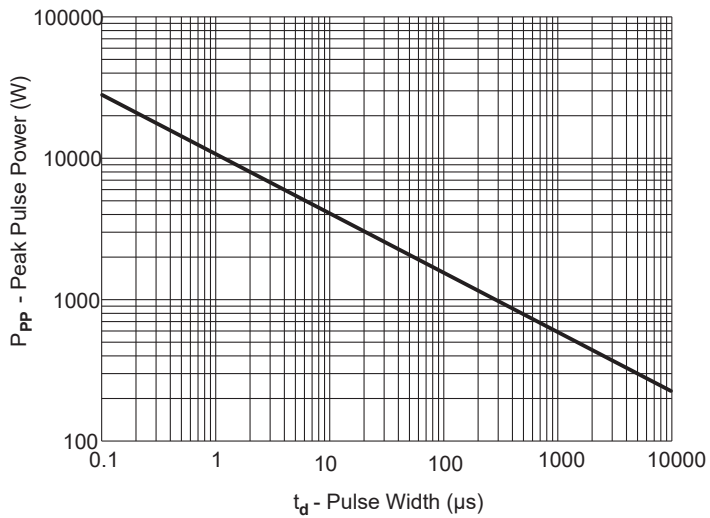


Fig. 2 - Typical Junction Capacitance

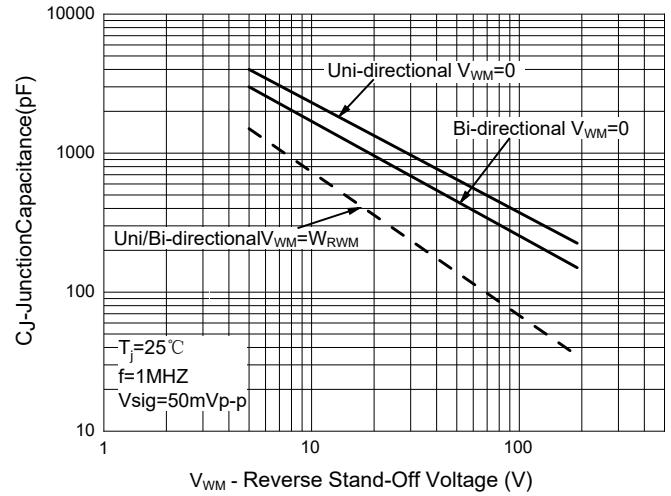


Fig. 3 - Pulse Waveform

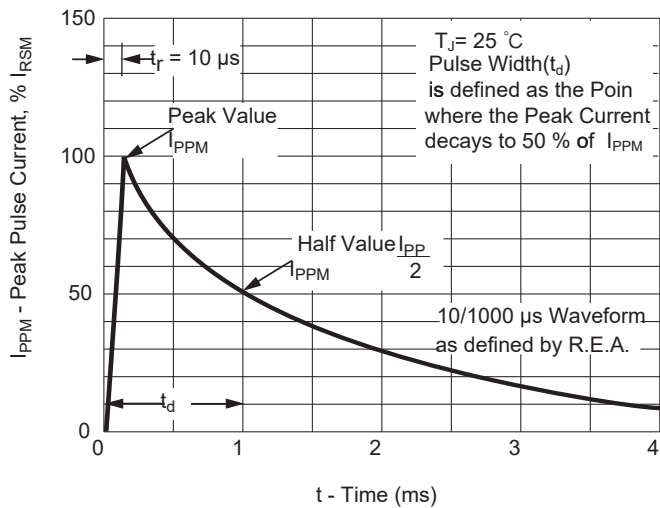
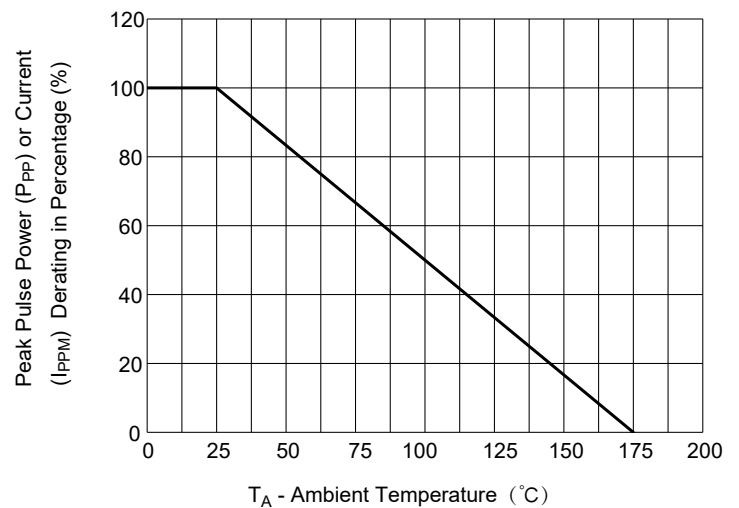


Fig. 4 - Pulse Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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