Surface Mount Transient Voltage Suppressor Rectifiers

Reverse Voltage 5.0 ~ 550 V

1500 Watt Peak Pulse Power

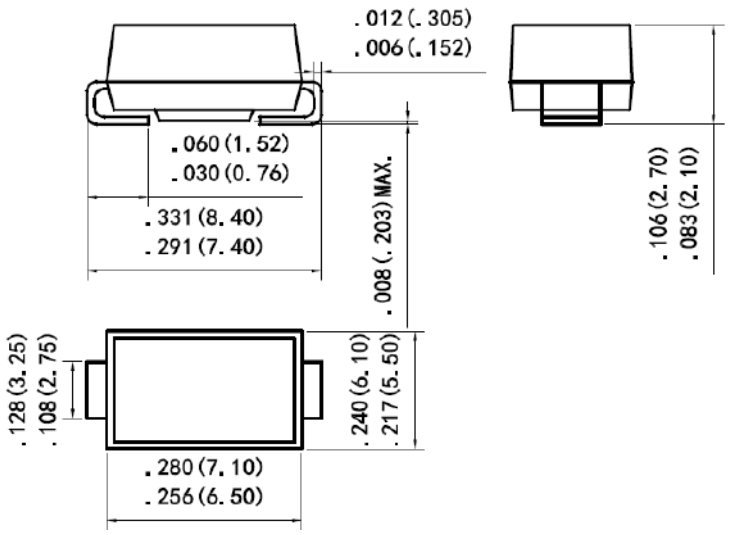
Features

- Glass passivated chip
- 1500 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

Mechanical Data

- Case: DO-214AB/(SMC) Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- System: Accreditation through IATF16949 System
- High reliability grade (AEC Q101 qualified)
- Mounting position: Any

DO-214AB/(SMC)



Unit: inch (mm)

Maximum Ratings & Characteristics Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform(1)	P_{PP}	1500	W
Peak pulse current wih a 10/1000 us waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	P_D	5.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only(2)	I_{FSM}	200	A
Maximum instantaneous forward voltage at 100 A for unidirectional only(3)	V_F	3.5/6.5	V
Operating junction and storage temperature range	T_J , T_{STG}	-55 to +150	℃

Note:

1)Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1 ;

2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

3)VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR>201V。

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Max. Clamping Voltage @ I_{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V_{RWM}
UNI-POLAR	BI-POLAR	UNI	BI	V_{RWM}(V)	Min.(V)	Max.(V)	I_T(mA)	$V_{C\ MAX.}$(V)	I_{PP}(A)	I_R(uA)
TSMCJ5.0A	TSMCJ5.0CA	GDE	BDE	5.0	6.40	7.00	10	9.2	163.0	800
TSMCJ6.0A	TSMCJ6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.6	800
TSMCJ6.5A	TSMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	133.9	500
TSMCJ7.0A	TSMCJ7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200
TSMCJ7.5A	TSMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
TSMCJ8.0A	TSMCJ8.0CA	GDR	BDR	8.0	8.89	9.83	1	13.6	110.3	50
TSMCJ8.5A	TSMCJ8.5CA	GDT	BDT	8.5	9.44	10.40	1	14.4	104.2	20
TSMCJ9.0A	TSMCJ9.0CA	GDV	BDV	9.0	10.00	11.10	1	15.4	97.40	10
TSMCJ10A	TSMCJ10CA	GDX	BDX	10.0	11.10	12.30	1	17.0	88.24	5
TSMCJ11A	TSMCJ11CA	GDZ	BDZ	11.0	12.20	13.50	1	18.2	82.42	1
TSMCJ12A	TSMCJ12CA	GEE	BEE	12.0	13.30	14.70	1	19.9	75.38	1
TSMCJ13A	TSMCJ13CA	GEG	BEG	13.0	14.40	15.90	1	21.5	69.77	1
TSMCJ14A	TSMCJ14CA	GEK	BEK	14.0	15.60	17.20	1	23.2	64.66	1
TSMCJ15A	TSMCJ15CA	GEM	BEM	15.0	16.70	18.50	1	24.4	61.48	1
TSMCJ16A	TSMCJ16CA	GEP	BEP	16.0	17.80	19.70	1	26.0	57.69	1
TSMCJ17A	TSMCJ17CA	GER	BER	17.0	18.90	20.90	1	27.6	54.35	1
TSMCJ18A	TSMCJ18CA	GET	BET	18.0	20.00	22.10	1	29.2	51.37	1
TSMCJ20A	TSMCJ20CA	GEV	BEV	20.0	22.20	24.50	1	32.4	46.30	1
TSMCJ22A	TSMCJ22CA	GEX	BEX	22.0	24.40	26.90	1	35.5	42.25	1
TSMCJ24A	TSMCJ24CA	GEZ	BEZ	24.0	26.70	29.50	1	38.9	38.56	1
TSMCJ26A	TSMCJ26CA	GFE	BFE	26.0	28.90	31.90	1	42.1	35.63	1
TSMCJ28A	TSMCJ28CA	GFG	BFG	28.0	31.10	34.40	1	45.4	33.04	1
TSMCJ30A	TSMCJ30CA	GFK	BFK	30.0	33.50	36.80	1	48.4	30.99	1
TSMCJ33A	TSMCJ33CA	GFM	BFM	33.0	36.70	40.60	1	53.3	28.14	1
TSMCJ36A	TSMCJ36CA	GFP	BFP	36.0	40.00	44.20	1	58.1	25.82	1
TSMCJ40A	TSMCJ40CA	GFR	BFR	40.0	44.40	49.10	1	64.5	23.26	1
TSMCJ43A	TSMCJ43CA	GFT	BFT	43.0	47.80	52.80	1	69.4	21.61	1
TSMCJ45A	TSMCJ45CA	GFV	BFV	45.0	50.00	55.30	1	72.7	20.63	1
TSMCJ48A	TSMCJ48CA	GFX	BFX	48.0	53.30	58.90	1	77.4	19.38	1
TSMCJ51A	TSMCJ51CA	GFZ	BFZ	51.0	56.70	62.70	1	82.4	18.20	1
TSMCJ54A	TSMCJ54CA	GGE	BGE	54.0	60.00	66.30	1	87.1	17.22	1
TSMCJ58A	TSMCJ58CA	GGG	BGG	58.0	64.40	71.20	1	93.6	16.03	1
TSMCJ60A	TSMCJ60CA	GGK	BGK	60.0	66.70	73.70	1	96.8	15.50	1
TSMCJ64A	TSMCJ64CA	GGM	BGM	64.0	71.10	78.60	1	103.0	14.56	1
TSMCJ70A	TSMCJ70CA	GGP	BGP	70.0	77.80	86.00	1	113.0	13.27	1
TSMCJ75A	TSMCJ75CA	GGR	BGR	75.0	83.30	92.10	1	121.0	12.40	1
TSMCJ78A	TSMCJ78CA	GGT	BGT	78.0	86.70	95.80	1	126.0	11.90	1
TSMCJ85A	TSMCJ85CA	GGV	BGV	85.0	94.4	104.0	1	137.0	10.95	1
TSMCJ90A	TSMCJ90CA	GGX	BGX	90.0	100.0	111.0	1	146.0	10.27	1
TSMCJ100A	TSMCJ100CA	GGZ	BGZ	100.0	111.0	123.0	1	162.0	9.26	1
TSMCJ110A	TSMCJ110CA	GHE	BHE	110.0	122.0	135.0	1	177.0	8.47	1
TSMCJ120A	TSMCJ120CA	GHG	BHG	120.0	133.0	147.0	1	193.0	7.77	1
TSMCJ130A	TSMCJ130CA	GHK	BHK	130.0	144.0	159.0	1	209.0	7.18	1
TSMCJ150A	TSMCJ150CA	GHM	BHM	150.0	167.0	185.0	1	243.0	6.17	1
TSMCJ160A	TSMCJ160CA	GHP	BHP	160.0	178.0	197.0	1	259.0	5.79	1
TSMCJ170A	TSMCJ170CA	GHR	BHR	170.0	189.0	209.0	1	275.0	5.45	1
TSMCJ180A	TSMCJ180CA	GHT	BHT	180.0	201.0	222.0	1	292.0	5.14	1
TSMCJ190A	TSMCJ190CA	GHU	BHU	190.0	209.0	243.0	1	308.0	4.87	1
TSMCJ200A	TSMCJ200CA	GHV	BHV	200.0	224.0	247.0	1	324.0	4.63	1
TSMCJ210A	TSMCJ210CA	GHW	BHW	210.0	231.0	268.0	1	340.0	4.41	1
TSMCJ220A	TSMCJ220CA	GHX	BHX	220.0	246.0	272.0	1	356.0	4.21	1
TSMCJ250A	TSMCJ250CA	GHZ	BHZ	250.0	279.0	309.0	1	405.0	3.70	1
TSMCJ300A	TSMCJ300CA	GJE	BJE	300.0	335.0	371.0	1	486.0	3.09	1
TSMCJ350A	TSMCJ350CA	GJG	BJG	350.0	391.0	432.0	1	567.0	2.65	1
TSMCJ400A	TSMCJ400CA	GJK	BJK	400.0	447.0	494.0	1	648.0	2.31	1
TSMCJ440A	TSMCJ440CA	GJM	BJM	440.0	492.0	543.0	1	713.0	2.10	1
TSMCJ480A	TSMCJ480CA	GJP	BJP	480.0	536.0	593.0	1	750.0	2.00	1
TSMCJ510A	TSMCJ510CA	GJQ	BJQ	510.0	570.0	630.0	1	758.0	1.98	1
TSMCJ520A	TSMCJ520CA	GJR	BJR	520.0	578.0	640.0	1	762.0	1.97	1
TSMCJ550A	TSMCJ550CA	GJT	BJT	550.0	615.0	680.0	1	860.0	1.74	1

Ratings and Characteristics Curves (TA=25℃ unless otherwise noted)

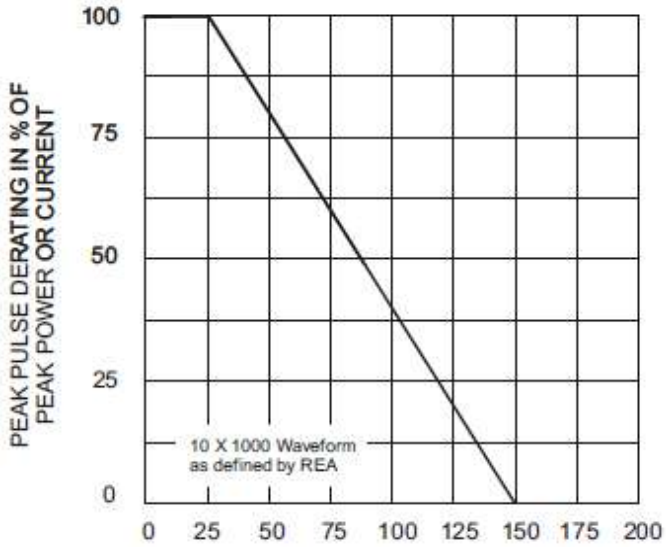


Fig. 1 - Pulse Derating Curve

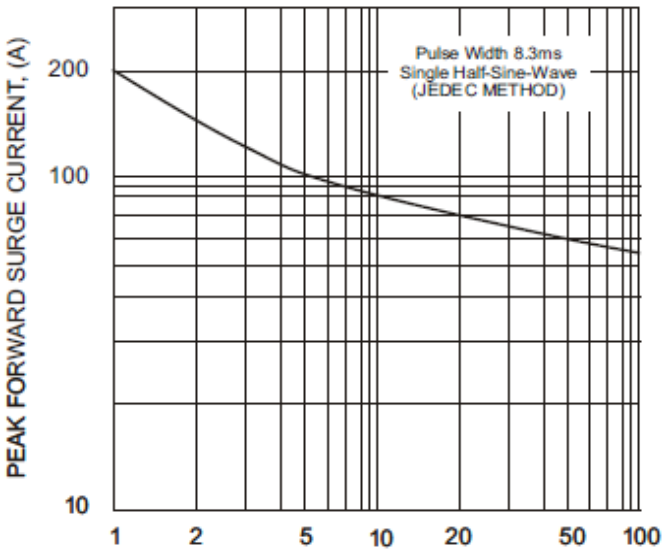


Fig. 2 - Maximum Non-Repetitive Surge Current

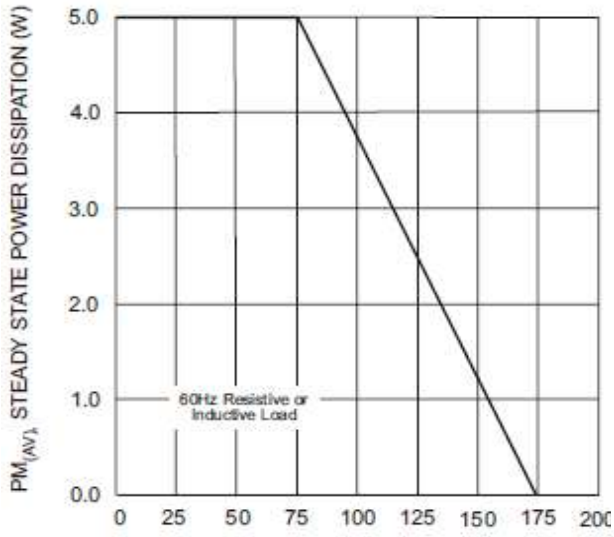


Fig. 3 - Steady State Power Derating Curve

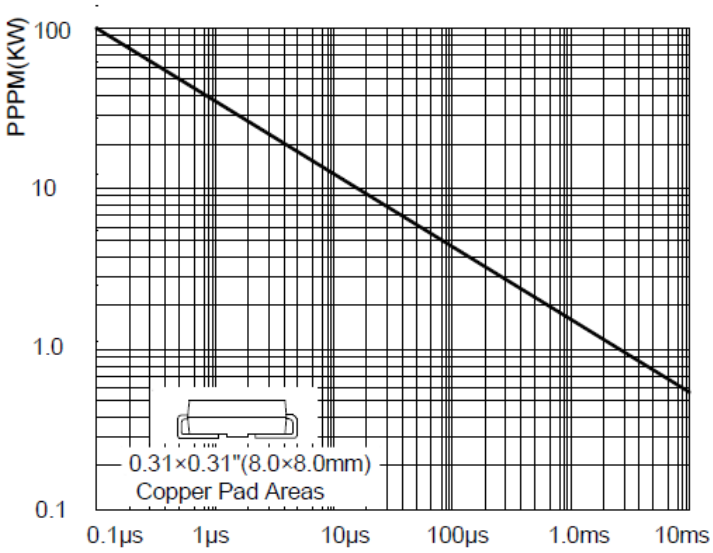


Fig. 4 - Peak Pulse Power Rating Curve

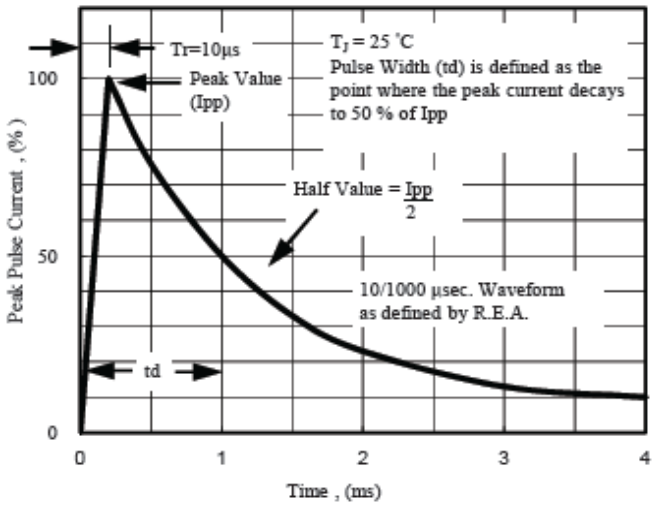


Fig. 5 - Pulse Waveform

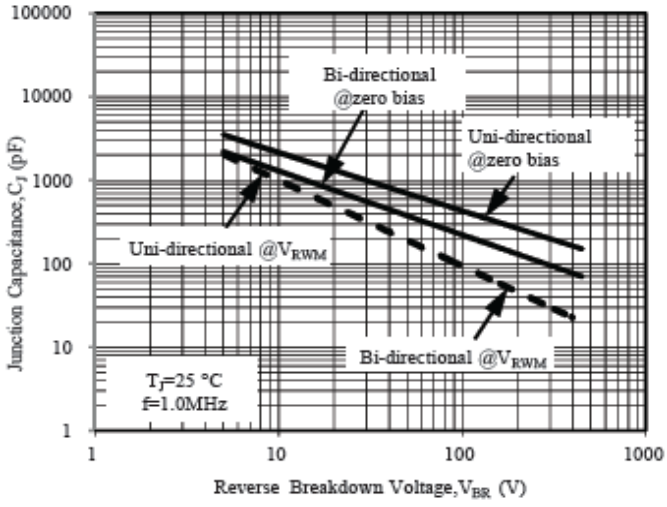


Fig. 6 - Typical Junction Capacitance