

5.0SMDG Series

Rating and Characteristic Curves 5.0SMDG Series

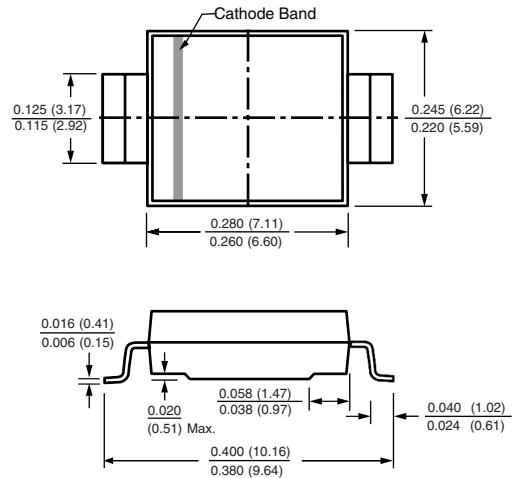
VOLTAGE-5.0 TO 170 Volts
5000 Watt Peak Pulse Power



Features

- ✧ For surface mounted applications in order to optimize board space
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Low inductance
- ✧ Excellent clamping capability
- ✧ Repetition rate (duty cycle):0.01%
- ✧ Fast response time: typically less than 1.0 ps from 0 volts to BV for unidirectional types
- ✧ Typical IR less than 1μA above 10V
- ✧ High temperature soldering: 250°C/10 seconds at terminals
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94 V-O

DO-215AB



Dimensions in inches and (millimeters)

Mechanical Data

- ✧ Case: JEDEC DO-215AB. Molded plastic over glass passivated junction
- ✧ Polarity: Color band denoted positive end (cathode) except Bidirectional
- ✧ Weight: 0.21 grams

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 μs waveform (NOTE 1, 2, Fig.1)	P_{PPM}	Minimum 5000	Watts
Peak Pulse Current of on 10/1000 μs waveform (Note 1, Fig 3)	I_{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method)(Note2, 3)	I_{FSM}	400	Amps
Operatings and Storage Temperature Range	T_J, T_{STG}	-55 +150	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_a=25\text{ }^\circ\text{C}$ per Fig.2.
2. Mounted on 8.0mm x 8.0mm Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pulses per minutes maximum.



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Fig. 1 - Peak Pulse Power Rating Curve

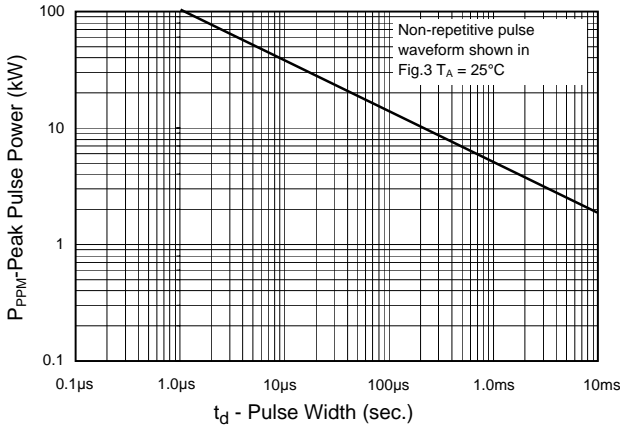


Fig.2 - Pulse Derating Curve

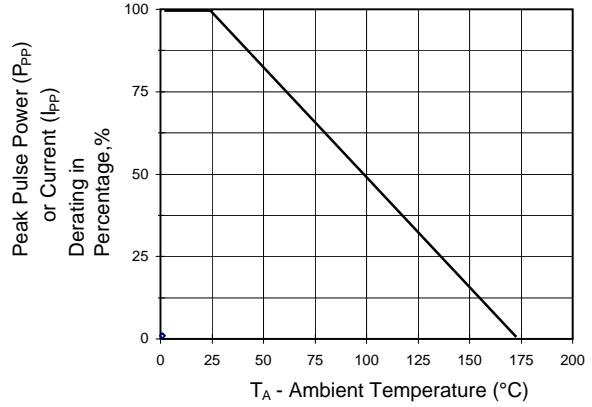


Fig.3 - Pulse Waveform

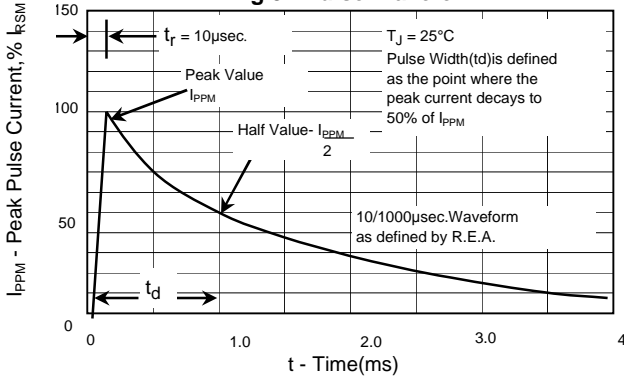


Fig. 4 - Typical Junction Capacitance

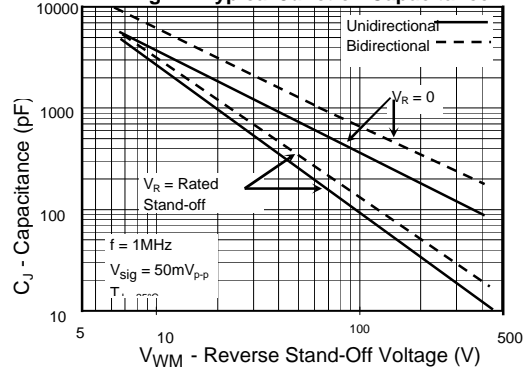


Fig. 5 - Steady State Power Derating Curve

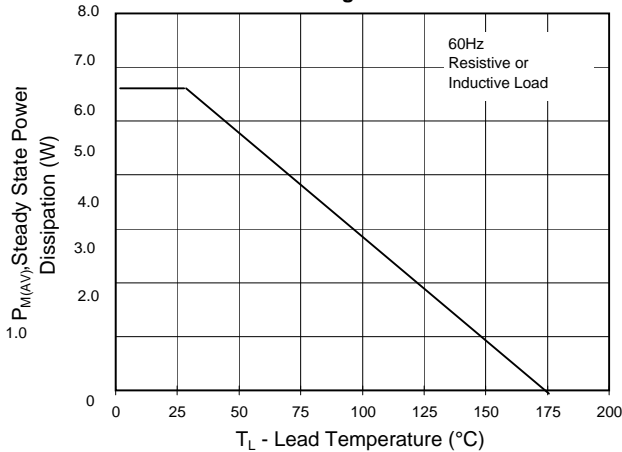
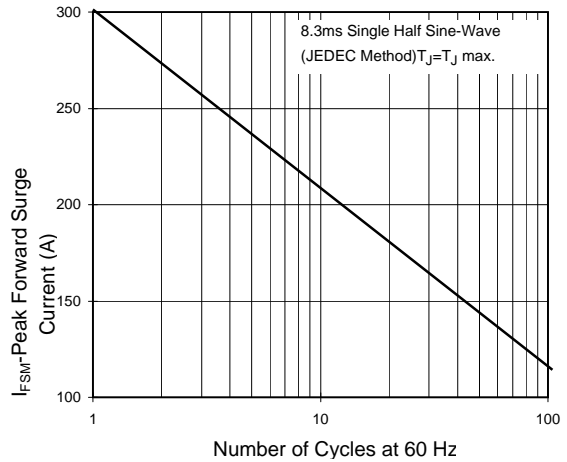


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only





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5000 Watt Surface Mount TVS

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STANDOFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE V_{BR} (V) MIN. @ I_T	BREAKDOWN VOLTAGE V_{BR} (V) MAX. @ I_T	TEST CURRENT (I_T) mA	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C (V)	PEAK PULSE CURRENT I_{PP} (A)	REVERSE LEAKAGE @ V_{RWM} I_R (μ A)
		UNI	BI							
5.0SMDG11A	5.0SMDG11CA	5PEN	5BEN	11.0	12.20	13.50	10	18.2	275.0	800
5.0SMDG12A	5.0SMDG12CA	5PEP	5BEP	12.0	13.30	14.70	10	19.9	252.0	800
5.0SMDG13A	5.0SMDG13CA	5PEQ	5BEQ	13.0	14.40	15.90	10	21.5	233.0	500
5.0SMDG14A	5.0SMDG14CA	5PER	5BER	14.0	15.60	17.20	10	23.2	216.0	200
5.0SMDG15A	5.0SMDG20CA	5PES	5BES	15.0	16.70	18.50	1	24.4	205.0	100
5.0SMDG16A	5.0SMDG20CA	5PET	5BET	16.0	17.80	19.70	1	26.0	193.0	50
5.0SMDG17A	5.0SMDG20CA	5PEU	5BEU	17.0	18.90	20.90	1	27.6	181.0	20
5.0SMDG18A	5.0SMDG20CA	5PEV	5BEV	18.0	20.00	22.10	1	29.2	172.0	10
5.0SMDG20A	5.0SMDG20CA	5PEW	5BEW	20.0	22.20	24.50	1	32.4	155.0	5
5.0SMDG22A	5.0SMDG22CA	5PEX	5BEX	22.0	24.40	26.90	1	35.5	141.0	5
5.0SMDG24A	5.0SMDG24CA	5PEZ	5BEZ	24.0	26.70	29.50	1	38.9	129.0	5
5.0SMDG26A	5.0SMDG26CA	5PFE	5BFE	26.0	28.90	31.90	1	42.1	119.0	5
5.0SMDG28A	5.0SMDG28CA	5PFG	5BFG	28.0	31.10	34.40	1	45.4	110.0	5
5.0SMDG30A	5.0SMDG30CA	5PFK	5BFK	30.0	33.30	36.80	1	48.4	103.0	5
5.0SMDG33A	5.0SMDG33CA	5PFM	5BFM	33.0	36.70	40.60	1	53.3	93.9	5
5.0SMDG36A	5.0SMDG36CA	5PFP	5BFP	36.0	40.00	44.20	1	58.1	86.1	5
5.0SMDG40A	5.0SMDG40CA	5PFR	5BFR	40.0	44.40	49.10	1	64.5	77.6	5
5.0SMDG43A	5.0SMDG43CA	5PFT	5BFT	43.0	47.80	52.80	1	69.4	72.1	5
5.0SMDG45A	5.0SMDG45CA	5PFV	5BFV	45.0	50.00	55.30	1	72.7	68.8	5
5.0SMDG48A		5PFX		48.0	53.30	58.90	1	77.4	64.7	5
5.0SMDG51A		5PFZ		51.0	56.70	62.70	1	82.4	60.7	5
5.0SMDG54A		5PGE		54.0	60.00	66.30	1	87.1	57.5	5
5.0SMDG58A		5PGG		58.0	64.40	71.20	1	93.6	53.5	5
5.0SMDG60A		5PGK		60.0	66.70	73.70	1	96.8	51.7	5
5.0SMDG64A		5PGM		64.0	71.10	78.60	1	103.0	48.6	5
5.0SMDG70A		5PGP		70.0	77.80	86.00	1	113.0	44.3	5
5.0SMDG75A		5PGR		75.0	83.30	92.10	1	121.0	41.4	5
5.0SMDG78A		5PGT		78.0	86.70	95.80	1	126.0	39.7	5
5.0SMDG85A		5PGV		85.0	94.40	104.00	1	137.0	36.5	5
5.0SMDG90A		5PGX		90.0	100.00	111.00	1	146.0	34.3	5
5.0SMDG100A		5PGZ		100.0	111.00	123.00	1	162.0	30.9	5
5.0SMDG110A		5PHE		110.0	122.00	135.00	1	177.0	28.3	5
5.0SMDG120A		5PHG		120.0	133.00	147.00	1	193.0	26.0	5
5.0SMDG130A		5PHK		130.0	144.00	159.00	1	209.0	24.0	5
5.0SMDG150A		5PHM		150.0	167.00	185.00	1	243.0	20.6	5
5.0SMDG160A		5PHP		160.0	178.00	197.00	1	259.0	19.3	5
5.0SMDG170A		5PHR		170.0	189.00	209.00	1	275.0	18.2	5

For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.

For parts without A, the V_{BR} is $\pm 10\%$

For Bidirectional use C or CA Suffix for types 5.0SMDG5.0 thru types 5.0SMDG170 (e.g. 5.0SMDG5.0C, 5.0SMDG70CA)

Electrical characteristics apply in both directions.