GSE5.0SMDJ Series

Surface Mount Transient Voltage Suppressor

Product Description

Peak Pulse Power Dissipation : 5000W
Working Voltage: 11 to 440V

Features

- Glass passivated chip
- 5000W peak pulse power capability with a 10/1000μs waveform repetitive rate(duty cycle):0.01%
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- Halogen-free parts.

Mechanical Data

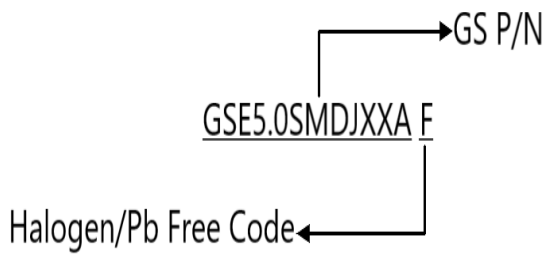
Case : Molded plastic
Epoxy : UL94V-0 rate flame retardant
Lead : Solderable per MIL-STD-750,Method 2026
Polarity : Color band denotes cathode end except Bipolar
Mounting position : Any

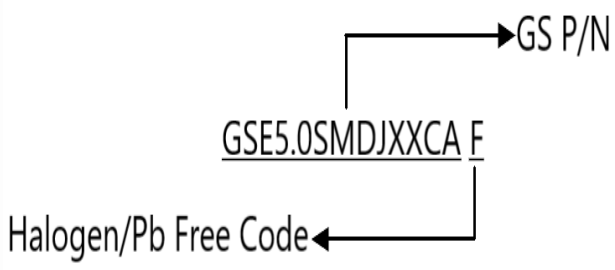
Packages

SMC

Ordering Information

Part Number	Package	Quantity Reel
GSE5.0SMDJXXAF/CAF	SMC	3000 PCS





Absolute Maximum Ratings

Rating at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Symbol	Conditions	Values	Unit
P_{PP}	Peak power dissipation with a 10/1000μs waveform(1)	5000	W
I_{PP}	Peak pulse current with a 10/1000μs waveform(1)	See Next Table	A
P_D	Power dissipation on infinite heatsink at TL = 50 °C	6.5	W
I_{FSM}	Peak Forward Surge Current 8.3ms Single Half Sine-Wave unidirectional only(2)	300	A
V_F	Maximum instantaneous forward voltage at 100 A for unidirectional only(3)	3.5/5.0	V
T_J	Operating temperature range	-55 to +150	°C
T_{STG}	Storage temperature range	-55 to +150	°C

Note (1): Non-repetitive current pulse per Fig.5 and derated above TA=25℃per Fig.1.
Note (2): Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
Note (3): VF< 3.5V for devices of VBR< 200V and VF< 5.0V for devices of VBR> 201V

Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.

Part Number (Uni-Polar)	Part Number (Bi-Polar)	Marking Code		Breakdown Voltage V_{BR}@I_T			V_{RWM} (V)	V_C@I_{PP} (V)	I_{PP} (A)	I_R@ V_{RWM} (μA)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
GSE5.0SMDJ11A	GSE5.0SMDJ11CA	5PDX	5BDX	12.2	13.5	10	11	18.2	274.7	800
GSE5.0SMDJ12A	GSE5.0SMDJ12CA	5PDZ	5BDZ	13.3	14.7	10	12	19.9	251.3	800
GSE5.0SMDJ13A	GSE5.0SMDJ13CA	5PEE	5BEE	14.4	15.9	10	13	21.5	232.6	500
GSE5.0SMDJ14A	GSE5.0SMDJ14CA	5PEG	5BEG	15.6	17.2	10	14	23.2	215.5	200
GSE5.0SMDJ15A	GSE5.0SMDJ15CA	5PEK	5BEK	16.7	18.5	1	15	24.4	204.9	100
GSE5.0SMDJ16A	GSE5.0SMDJ16CA	5PEM	5BEM	17.8	19.7	1	16	26.0	192.3	50
GSE5.0SMDJ17A	GSE5.0SMDJ17CA	5PEP	5BEP	18.9	20.9	1	17	27.6	181.2	20
GSE5.0SMDJ18A	GSE5.0SMDJ18CA	5PER	5BER	20.0	22.1	1	18	29.2	171.2	10
GSE5.0SMDJ19A	GSE5.0SMDJ19CA	5PET	5BET	21.1	23.3	1	19	30.8	162.4	10
GSE5.0SMDJ20A	GSE5.0SMDJ20CA	5PEV	5BEV	22.2	24.5	1	20	32.4	154.3	5
GSE5.0SMDJ22A	GSE5.0SMDJ22CA	5PEX	5BEX	24.4	26.9	1	22	35.5	140.8	5
GSE5.0SMDJ24A	GSE5.0SMDJ24CA	5PEZ	5BEZ	26.7	29.5	1	24	38.9	128.5	5
GSE5.0SMDJ26A	GSE5.0SMDJ26CA	5PFE	5BFE	28.9	31.9	1	26	42.1	118.8	5
GSE5.0SMDJ28A	GSE5.0SMDJ28CA	5PFG	5BFG	31.1	34.4	1	28	45.4	110.1	5
GSE5.0SMDJ30A	GSE5.0SMDJ30CA	5PFK	5BFK	33.3	36.8	1	30	48.4	103.3	5
GSE5.0SMDJ33A	GSE5.0SMDJ33CA	5PFM	5BFM	36.7	40.6	1	33	53.3	93.8	5
GSE5.0SMDJ36A	GSE5.0SMDJ36CA	5PFP	5BFP	40.0	44.2	1	36	58.1	86.1	5
GSE5.0SMDJ40A	GSE5.0SMDJ40CA	5PFR	5BFR	44.4	49.1	1	40	64.5	77.5	5
GSE5.0SMDJ43A	GSE5.0SMDJ43CA	5PFT	5BFT	47.8	52.8	1	43	69.4	72.0	5
GSE5.0SMDJ45A	GSE5.0SMDJ45CA	5PFV	5BFV	50.0	55.3	1	45	72.7	68.8	5
GSE5.0SMDJ48A	GSE5.0SMDJ48CA	5PFX	5BFX	53.3	58.9	1	48	77.4	64.6	5

Electrical Characteristics(Continue)

Part Number (Uni-Polar)	Part Number (Bi-Polar)	Marking Code		Breakdown Voltage V_{BR}@I_T			V_{RWM} (V)	V_C@I_{PP} (V)	I_{PP} (A)	I_R@ V_{RWM} (μA)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
GSE5.0SMDJ51A	GSE5.0SMDJ51CA	5PFZ	5BFZ	56.7	62.7	1	51	82.4	60.7	5
GSE5.0SMDJ54A	GSE5.0SMDJ54CA	5PGE	5BGE	60.0	66.3	1	54	87.1	57.4	5
GSE5.0SMDJ58A	GSE5.0SMDJ58CA	5PGG	5BGG	64.4	71.2	1	58	93.6	53.4	5
GSE5.0SMDJ60A	GSE5.0SMDJ60CA	5PGK	5BGK	66.7	73.7	1	60	96.8	51.7	5
GSE5.0SMDJ64A	GSE5.0SMDJ64CA	5PGM	5BGM	71.1	78.6	1	64	103	48.5	5
GSE5.0SMDJ70A	GSE5.0SMDJ70CA	5PGP	5BGP	77.8	86	1	70	113	44.2	5
GSE5.0SMDJ75A	GSE5.0SMDJ75CA	5PGR	5BGR	83.3	92.1	1	75	121	41.3	5
GSE5.0SMDJ78A	GSE5.0SMDJ78CA	5PGT	5BGT	86.7	95.8	1	78	126	39.7	5
GSE5.0SMDJ80A	GSE5.0SMDJ80CA	5PGB	5BGB	88.8	97.6	1	80	129.6	38.6	5
GSE5.0SMDJ85A	GSE5.0SMDJ85CA	5PGV	5BGV	94.4	104	1	85	137	36.5	5
GSE5.0SMDJ90A	GSE5.0SMDJ90CA	5PGX	5BGX	100	111	1	90	146	34.2	5
GSE5.0SMDJ100A	GSE5.0SMDJ100CA	5PGZ	5BGZ	111	123	1	100	162	30.9	5
GSE5.0SMDJ110A	GSE5.0SMDJ110CA	5PHE	5BHE	122	135	1	110	177.7	28.2	5
GSE5.0SMDJ120A	GSE5.0SMDJ120CA	5PHG	5BHG	133	147	1	120	193	25.9	5
GSE5.0SMDJ130A	GSE5.0SMDJ130CA	5PHK	5BHK	144	159	1	130	209	23.9	5
GSE5.0SMDJ140A	GSE5.0SMDJ140CA	5PHB	5BHB	155	171	1	140	226.8	22.0	5
GSE5.0SMDJ150A	GSE5.0SMDJ150CA	5PHM	5BHM	167	185	1	150	243	20.6	5
GSE5.0SMDJ160A	GSE5.0SMDJ160CA	5PHP	5BHP	178	197	1	160	259	19.3	5
GSE5.0SMDJ170A	GSE5.0SMDJ170CA	5PHR	5BHR	189	209	1	170	275	18.2	5
GSE5.0SMDJ180A	GSE5.0SMDJ180CA	5PHT	5BHT	200	220	1	180	291.6	17.1	5
GSE5.0SMDJ190A	GSE5.0SMDJ190CA	5PHV	5BHV	211	232	1	190	307.8	16.2	5
GSE5.0SMDJ200A	GSE5.0SMDJ200CA	5PHW	5BHW	224	247	1	200	324	15.4	5
GSE5.0SMDJ220A	GSE5.0SMDJ220CA	5PHX	5BHX	246	272	1	220	356	14.0	5
GSE5.0SMDJ250A	GSE5.0SMDJ250CA	5PHZ	5BHZ	279	309	1	250	405	12.3	5
GSE5.0SMDJ300A	GSE5.0SMDJ300CA	5PJE	5BJE	335	371	1	300	486	10.3	5
GSE5.0SMDJ350A	GSE5.0SMDJ350CA	5PJG	5BJG	391	432	1	350	567	8.8	5
GSE5.0SMDJ400A	GSE5.0SMDJ400CA	5PJK	5BJK	447	494	1	400	648	7.7	5
GSE5.0SMDJ440A	GSES5.0MDJ440CA	5PJM	5BJM	492	543	1	440	713	7.0	5

Note :

1. Suffix 'A' denotes 5% tolerance device.
2. Suffix 'CA' after part number to specify Bi-directional devices.
3. For Bi-Directional devices having VR of 10 volts and less, the IR limit is double.

Typical Characteristics

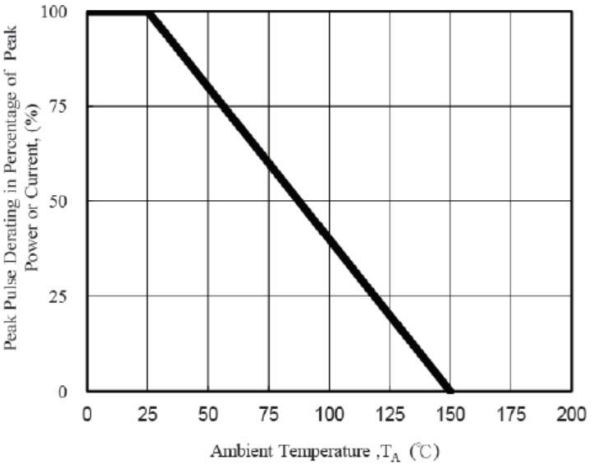


Fig. 1 - Pulse Derating Curve

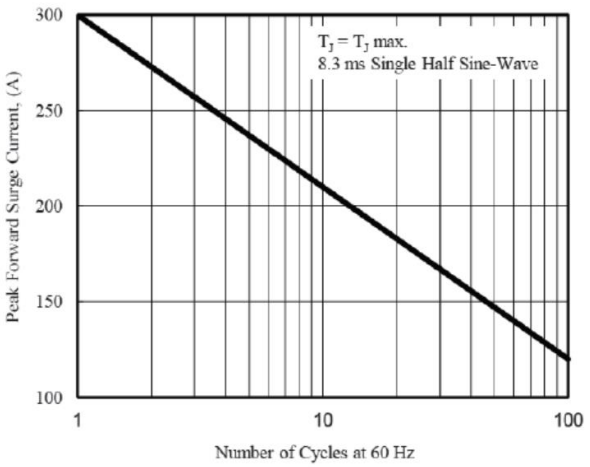


Fig. 2 - Maximum Non-Repetitive Surge Current

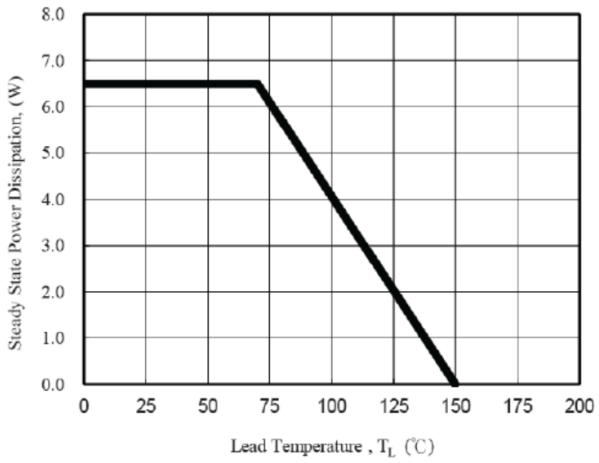


Fig. 3 - Steady State Power Derating Curve

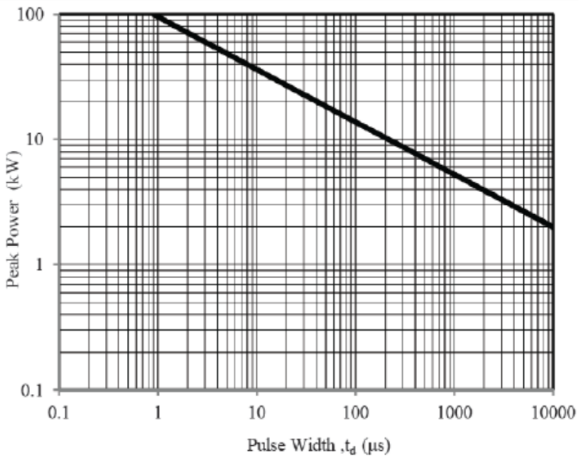


Fig. 4 - Peak Pulse Power Rating Curve

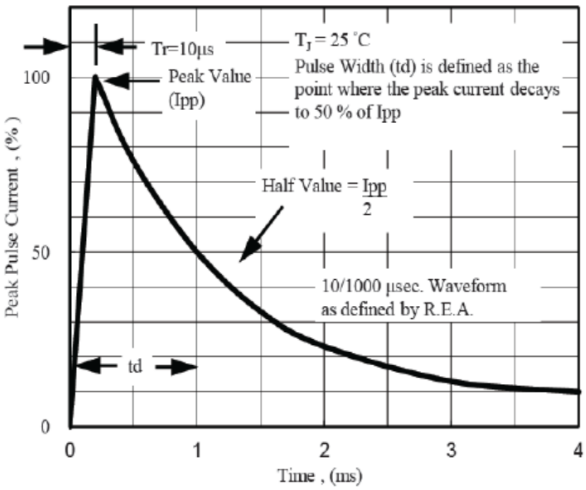


Fig. 5 - Pulse Waveform

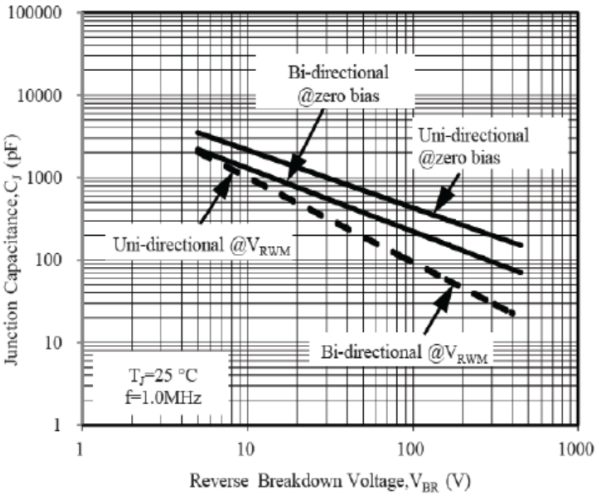
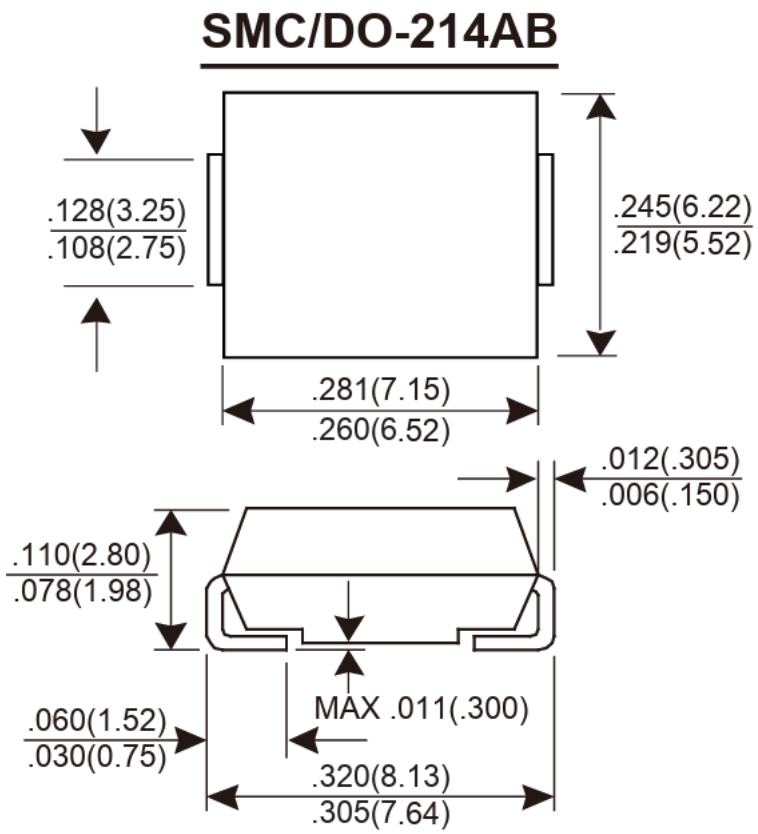


Fig. 6 - Typical Junction Capacitance

Package Dimension



Dimensions in inches and (millimeters)

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