GSE8.0SMDJ Series

Transient Voltage Suppressors

Product Description

Peak Pulse Power Dissipation: 8000W
Working Voltage: 11 to 250V

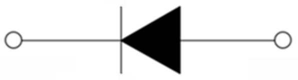
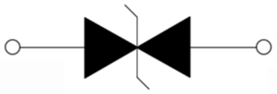
Features

- 8000W Peak Pulse Power Capability at 10/1000μs Waveform, Repetition Rate 0.01%
- Glass Passivated Chip

Mechanical Data

- SMC (DO-214AB) Package
- RoHS Compliant and Halogen Free

Package and Pin Assignment

SMC (DO-214AB)	Equivalent Circuit
Unidirectional	
	
Bidirectional	
	

Ordering and Marking Information

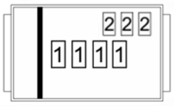
GS P/N	Type	Package	Marking	Quantity / Reel
GSE8.0SMDJ 1 1 1 AF	Unidirectional	SMC (DO-214AB)	□□□ □□□□	3,000 PCS
GSE8.0SMDJ 1 1 1 CAF	Bidirectional			

GSE8.0SMDJ 1 1 1 2 AF

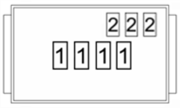
- **Product Code:**
  GSE8.0SMDJ
- **Voltage Code:**
  1 1 1 is V_{RWM} Voltage
- **Type Code:**
  2 for type of direction.
  Blank: Unidirectional
  C: Bidirectional
- **Tolerance Code:**
  A for 5% V_{BR} Voltage Tolerance
- **Green Level:**
  F for RoHS Compliant and Halogen Free

Marking Information

Unidirectional



Bidirectional



- **Product Code:**
  1 1 1 1
- **GS Code:**
  2 2 2 is blank or specific codes

- The Product Code for the selected parts can be checked from the Marking Code in the section of Electrical Characteristics
- The Band denotes Cathode End for Unidirectional Type only

Absolute Maximum Ratings (T_A=25ºC unless otherwise specified)

Symbol	Parameter	Rating	Unit
P_{PP}	Peak power dissipation with a 10/1000μs waveform(1),	8000	W
I_{PP}	Peak pulse current with a 10/1000μs waveform(1)	See Table	A
I_{FSM}	Peak Forward Surge Current 8.3ms single half sine-wave for unidirectional only (2)	300	A
P_D	Power Dissipation on Infinite Heatsink at T_L=75℃	8	W
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.3 and derated above T_A=25℃ per Fig.2.
2. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Electrical Characteristics (T$_A$=25ºC unless otherwise specified)

Part Number	Marking	V$_{RWM}$ (V)	Breakdown Voltage V$_{BR}$ @ I$_T$			V$_C$ @ I$_{PP}$ (V)	I$_{PP}$ (A)	I$_R$ @ V$_{RWM}$ (μA)
			Min (V)	Max (V)	I$_T$ (mA)			
GSE8.0SMDJ12AF	8PEP	12	13.3	14.7	10	19.9	402.1	800
GSE8.0SMDJ12CAF	8BEP							
GSE8.0SMDJ13AF	8PEQ	13	14.4	15.9	10	21.5	372.1	500
GSE8.0SMDJ13CAF	8BEQ							
GSE8.0SMDJ14AF	8PER	14	15.6	17.2	10	23.2	344.9	200
GSE8.0SMDJ14CAF	8BER							
GSE8.0SMDJ15AF	8PES	15	16.7	18.5	1	24.4	327.9	100
GSE8.0SMDJ15CAF	8BES							
GSE8.0SMDJ16AF	8PET	16	17.8	19.7	1	26.0	307.7	50
GSE8.0SMDJ16CAF	8BET							
GSE8.0SMDJ17AF	8PEU	17	18.9	20.9	1	27.6	290.0	20
GSE8.0SMDJ17CAF	8BEU							
GSE8.0SMDJ18AF	8PEV	18	20.0	22.1	1	29.2	274.0	10
GSE8.0SMDJ18CAF	8BEV							
GSE8.0SMDJ20AF	8PEW	20	22.2	24.5	1	32.4	247.0	5
GSE8.0SMDJ20CAF	8BEW							
GSE8.0SMDJ22AF	8PEX	22	24.4	26.9	1	35.5	225.4	5
GSE8.0SMDJ22CAF	8BEX							
GSE8.0SMDJ24AF	8PEZ	24	26.7	29.5	1	38.9	205.7	5
GSE8.0SMDJ24CAF	8BEZ							
GSE8.0SMDJ26AF	8PFE	26	28.9	31.9	1	42.1	190.1	5
GSE8.0SMDJ26CAF	8BFE							
GSE8.0SMDJ28AF	8PFG	28	31.1	34.4	1	45.4	176.2	5
GSE8.0SMDJ28CAF	8BFG							
GSE8.0SMDJ30AF	8PFK	30	33.3	36.8	1	48.4	165.3	5
GSE8.0SMDJ30CAF	8BFK							
GSE8.0SMDJ33AF	8PFM	33	36.7	40.6	1	53.3	150.1	5
GSE8.0SMDJ33CAF	8BFM							
GSE8.0SMDJ36AF	8PFP	36	40.0	44.2	1	58.1	137.8	5
GSE8.0SMDJ36CAF	8BFP							
GSE8.0SMDJ40AF	8PFR	40	44.4	49.1	1	64.5	124.1	5
GSE8.0SMDJ40CAF	8BFR							
GSE8.0SMDJ43AF	8PFT	43	47.8	52.8	1	69.4	115.3	5
GSE8.0SMDJ43CAF	8BFT							
GSE8.0SMDJ45AF	8PFV	45	50.0	55.3	1	72.7	110.1	5
GSE8.0SMDJ45CAF	8BFV							
GSE8.0SMDJ48AF	8PFX	48	53.3	58.9	1	77.4	103.4	5
GSE8.0SMDJ48CAF	8BFX							

Electrical Characteristics (T$_A$=25ºC unless otherwise specified)

Part Number	Marking	V_{RWM} (V)	Breakdown Voltage V_{BR} @ I_T			V_C @ I_{PP} (V)	I_{PP} (A)	I_R @ V_{RWM} (μA)
			Min (V)	Max (V)	I_T (mA)			
GSE8.0SMDJ51AF	8PFZ	51	56.7	62.7	1	82.4	97.1	5
GSE8.0SMDJ51CAF	8BFZ							
GSE8.0SMDJ54AF	8PGE	54	60.0	66.3	1	87.1	92.0	5
GSE8.0SMDJ54CAF	8BGE							
GSE8.0SMDJ58AF	8PGG	58	64.4	71.2	1	93.6	85.5	5
GSE8.0SMDJ58CAF	8BGG							
GSE8.0SMDJ60AF	8PGK	60	66.7	73.7	1	96.8	82.7	5
GSE8.0SMDJ60CAF	8BGK							
GSE8.0SMDJ64AF	8PGM	64	71.1	78.6	1	103.0	77.7	5
GSE8.0SMDJ64CAF	8BGM							
GSE8.0SMDJ70AF	8PGP	70	77.8	86.0	1	113.0	71.0	5
GSE8.0SMDJ70CAF	8BGP							
GSE8.0SMDJ75AF	8PGR	75	83.3	92.1	1	121.0	66.2	5
GSE8.0SMDJ75CAF	8BGR							
GSE8.0SMDJ78AF	8PGT	78	86.7	95.8	1	126.0	63.5	5
GSE8.0SMDJ78CAF	8BGT							
GSE8.0SMDJ85AF	8PGV	85	94.4	104.0	1	137.0	58.4	5
GSE8.0SMDJ85CAF	8BGV							
GSE8.0SMDJ90AF	8PGX	90	100	111	1	146.0	55.0	5
GSE8.0SMDJ90CAF	8BGX							
GSE8.0SMDJ100AF	8PGZ	100	111	123	1	162	49.4	5
GSE8.0SMDJ100CAF	8BGZ							
GSE8.0SMDJ110AF	8PHE	110	122	135	1	177	45.2	5
GSE8.0SMDJ110CAF	8BHE							

Typical Characteristics (TA=25℃ unless otherwise specified)

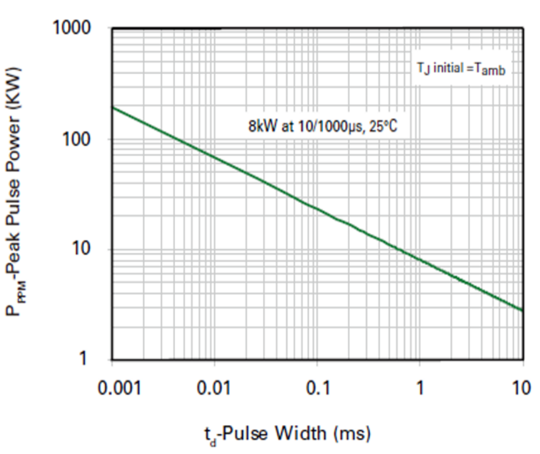


FIG 1. Peak Pulse Power vs. Pulse Time

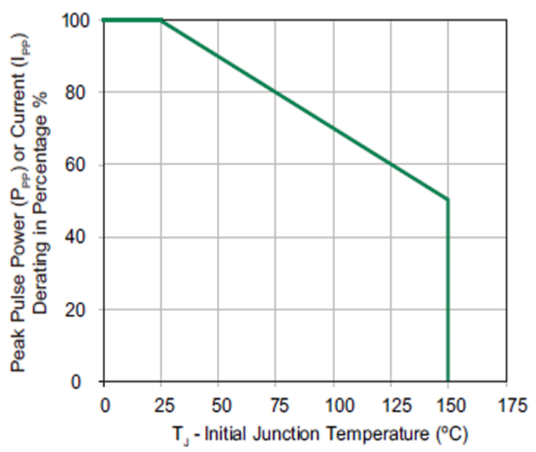


FIG 2. Power Derating Curve

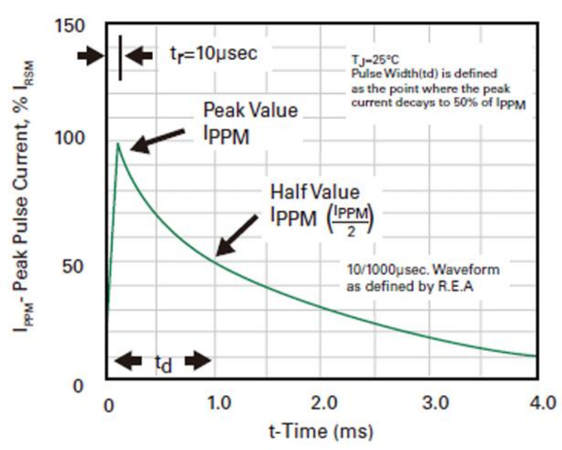


FIG 3. Pulse Waveform

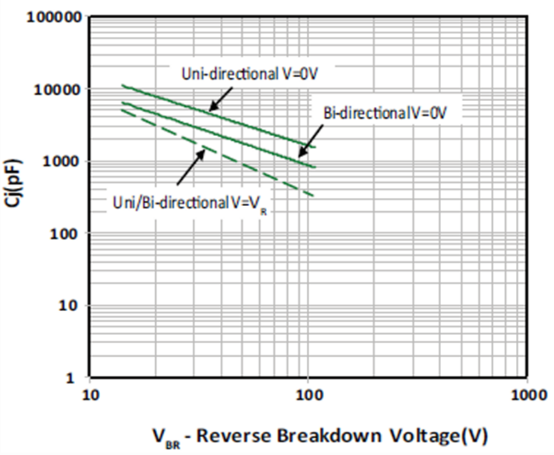


FIG 4. Typical Junction Capacitance

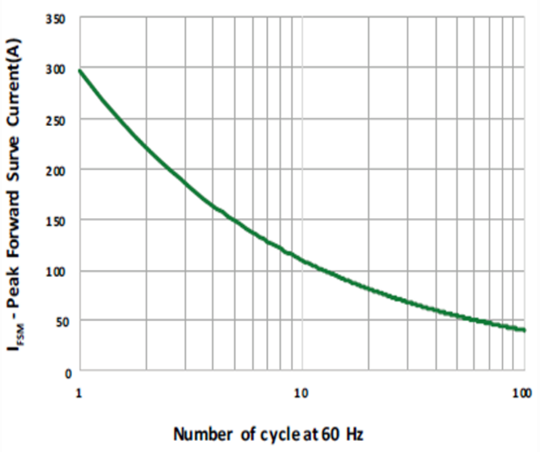


FIG 5. Non Repetitive Peak Forward Surge Current (Unidirectional Only)

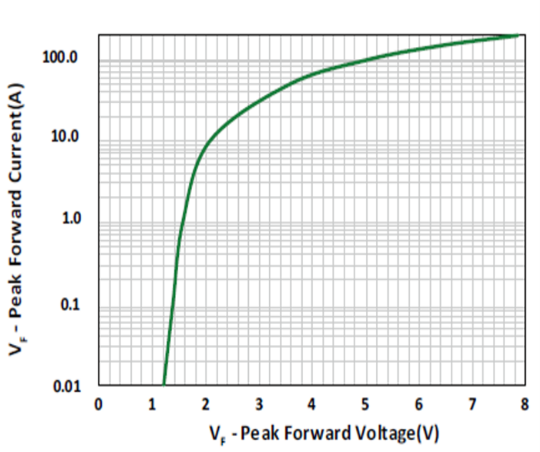
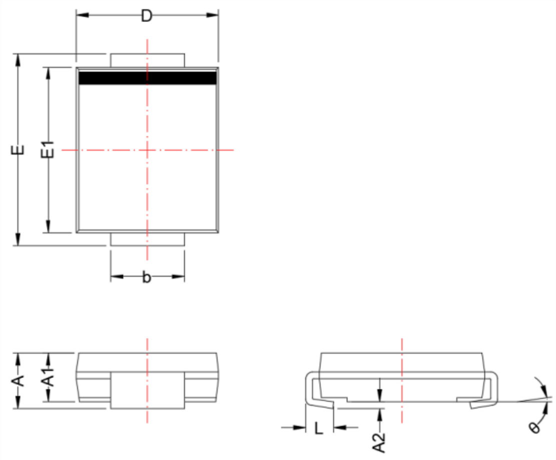


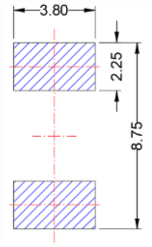
FIG 6. $V_{F(Peak)}$ vs. $I_{F(Peak)}$

SMC (DO-214AB)

Package Dimension



Recommended Land Pattern



Unit: mm

Dimensions				
SYMBOL	**Millimeters**		**Inches**	
	MIN	**MAX**	**MIN**	**MAX**
A	1.95	2.80	0.077	0.110
A1	1.90	---	0.075	---
A2	0.00	0.30	0.000	0.012
b	2.90	3.20	0.114	0.126
D	5.55	6.25	0.219	0.246
E	7.75	8.15	0.305	0.321
E1	6.60	7.15	0.260	0.281
L	0.75	1.60	0.030	0.063
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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