GSESMDJ Series

Transient Voltage Suppressor

Product Description

The SMDJ Series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

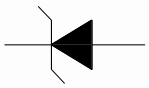
Features

- 3000W Peak Pulse Power Capability at 10/1000μs Waveform, Repetition Rate (Duty Cycle): 0.01%
- Uni- and Bi-Directional Type Selectable
- Glass Passivated Chip
- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance

Mechanical Data

- SMC (DO-214AB) Package
- RoHS Compliant and Halogen Free
- Safety certification: UL: E244458
- Lead: Solderable per MIL-STD-750, Method 2026
- Polarity: Color Band denotes Cathode End for Uni-directional Type only

Package and Pin Assignment

SMC (DO-214AB)	
	 **Bi-Directional**
 * Color Band denotes Cathode End	 **Uni-Directional**

Ordering and Marking Information

Part Number	Package	Marking	Quantity/Reel
See Table	SMC (DO-214AB)	□□□ □□□	3000 PCS/Reel

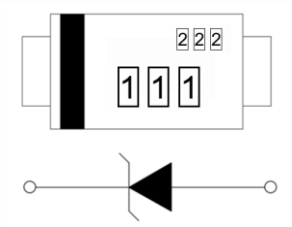
Ordering Information

GSESMDJ 1 1 1 2 A F

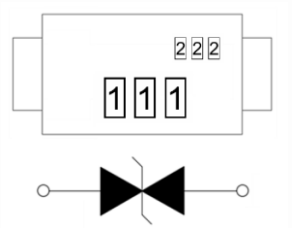
- **Product Code:**
  GSESMDJ
- **Voltage Code:**
  1 1 1 is V_{RWM} Voltage
  For examples 7.0 is 7V and 70 is 70V etc.
- **Type Code:**
  2 for type of direction.
  Blank: Uni-direction
  C: Bi-direction
- **Tolerance Code:**
  A for 5% V_{BR} Voltage Tolerance
- **Green Level:**
  F for RoHS Compliant and Halogen Free

Marking Information

Uni-Direction



Bi-Direction



- **Product Code:**
  1 1 1
- **GS Code:**
  2 2 2

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

Absolute Maximum Ratings

(T_A=25ºC Unless Otherwise Specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.)

Symbol	Parameter	Rating	Unit
P_{PP}	Peak power dissipation with a 10/1000μs waveform(1), (2)	3000	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 (3)	300	A
P_D	Steady state power dissipation at T_A=50℃ (Fig.5)	6.5	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. Mounted on 8.0mm×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.

Electrical Characteristics (T_A=25ºC Unless Otherwise Specified)

Part Number (Uni-Directional)	Part Number (Bi-Directional)	MARKING CODE		Breakdown Voltage V_{BR}@I_T			V_{RWM} (V)	I_R@V_{RWM} (μA)	V_C@ I_{PP} (V)	$I_{PP\ max}$ (A)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
GSESMDJ5.0AF	GSESMDJ5.0CAF	RDE	DDE	6.40	7.00	10	5.0	800	9.2	326.1
GSESMDJ6.0AF	GSESMDJ6.0CAF	RDG	DDG	6.67	7.37	10	6.0	800	10.3	291.3
GSESMDJ6.5AF	GSESMDJ6.5CAF	RDK	DDK	7.22	7.98	10	6.5	500	11.2	267.9
GSESMDJ7.0AF	GSESMDJ7.0CAF	PDM	DDM	7.78	8.60	10	7.0	200	12.0	250
GSESMDJ7.5AF	GSESMDJ7.5CAF	PDP	DDP	8.33	9.21	1.0	7.5	100	12.9	232.6
GSESMDJ8.0AF	GSESMDJ8.0CAF	PDR	DDR	8.89	9.83	1.0	8.0	50	13.6	220.6
GSESMDJ8.5AF	GSESMDJ8.5CAF	PDT	DDT	9.44	10.40	1.0	8.5	20	14.4	208.3
GSESMDJ9.0AF	GSESMDJ9.0CAF	PDV	DDV	10.0	11.10	1.0	9.0	10	15.4	194.8
GSESMDJ10AF	GSESMDJ10CAF	PDX	DDX	11.1	12.3	1.0	10	5	17.0	176.5
GSESMDJ11AF	GSESMDJ11CAF	PDZ	DDZ	12.2	13.5	1.0	11	2	18.2	164.8
GSESMDJ12AF	GSESMDJ12CAF	PEE	DEE	13.3	14.7	1.0	12	2	19.9	150.8
GSESMDJ13AF	GSESMDJ13CAF	PEG	DEG	14.4	15.9	1.0	13	2	21.5	139.5
GSESMDJ14AF	GSESMDJ14CAF	PEK	DEK	15.6	17.2	1.0	14	2	23.3	129.3
GSESMDJ15AF	GSESMDJ15CAF	PEM	DEM	16.7	18.5	1.0	15	2	24.4	123.0
GSESMDJ16AF	GSESMDJ16CAF	PEP	DEP	17.8	19.7	1.0	16	2	26.0	115.4
GSESMDJ17AF	GSESMDJ17CAF	PER	DER	18.9	20.9	1.0	17	2	27.6	108.7
GSESMDJ18AF	GSESMDJ18CAF	PET	DET	20.0	22.1	1.0	18	2	29.2	102.7
GSESMDJ20AF	GSESMDJ20CAF	PEV	DEV	22.2	24.5	1.0	20	2	32.4	92.6
GSESMDJ22AF	GSESMDJ22CAF	PEX	DEX	24.4	26.9	1.0	22	2	35.5	84.5
GSESMDJ24AF	GSESMDJ24CAF	PEZ	DEZ	26.7	29.5	1.0	24	2	38.9	77.1

Part Number (Uni-Directional)	Part Number (Bi-Directional)	MARKING CODE		Breakdown Voltage $V_{BR}@I_T$			V_{RWM} (V)	$I_R@V_{RWM}$ (μA)	$V_C@I_{PP}$ (V)	$I_{PP\ max}$ (A)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
GSESMDJ26AF	GSESMDJ26CAF	PFE	DFE	28.9	31.9	1.0	26	2	42.1	71.3
GSESMDJ28AF	GSESMDJ28CAF	PFG	DFG	31.1	34.4	1.0	28	2	45.4	66.1
GSESMDJ30AF	GSESMDJ30CAF	PFK	DFK	33.3	36.8	1.0	30	2	48.4	62.0
GSESMDJ33AF	GSESMDJ33CAF	PFM	DFM	36.7	40.6	1.0	33	2	53.3	56.3
GSESMDJ36AF	GSESMDJ36CAF	PFP	DFP	40.0	44.2	1.0	36	2	58.1	51.6
GSESMDJ40AF	GSESMDJ40CAF	PFR	DFR	44.4	49.1	1.0	40	2	64.5	46.5
GSESMDJ43AF	GSESMDJ43CAF	PFT	DFT	47.8	52.8	1.0	43	2	69.4	43.2
GSESMDJ45AF	GSESMDJ45CAF	PFV	DFV	50.0	55.3	1.0	45	2	72.7	41.3
GSESMDJ48AF	GSESMDJ48CAF	PFX	DFX	53.3	58.9	1.0	48	2	77.4	38.8
GSESMDJ51AF	GSESMDJ51CAF	PFZ	DFZ	56.7	62.7	1.0	51	2	82.4	36.4
GSESMDJ54AF	GSESMDJ54CAF	PGE	DGE	60.0	66.3	1.0	54	2	87.1	34.4
GSESMDJ58AF	GSESMDJ58CAF	PGG	DGG	64.4	71.2	1.0	58	2	93.6	32.1
GSESMDJ60AF	GSESMDJ60CAF	PGK	DGK	66.7	73.7	1.0	60	2	96.8	31.0
GSESMDJ64AF	GSESMDJ64CAF	PGM	DGM	71.1	78.6	1.0	64	2	103	29.1
GSESMDJ70AF	GSESMDJ70CAF	PGP	DGP	77.8	86.0	1.0	70	2	113	26.5
GSESMDJ75AF	GSESMDJ75CAF	PGR	DGR	83.3	92.1	1.0	75	2	121	24.8
GSESMDJ78AF	GSESMDJ78CAF	PGT	DGT	86.7	95.8	1.0	78	2	126	23.8
GSESMDJ85AF	GSESMDJ85CAF	PGV	DGV	94.4	104	1.0	85	2	137	21.9
GSESMDJ90AF	GSESMDJ90CAF	PGX	DGX	100	111	1.0	90	2	146	20.5
GSESMDJ100AF	GSESMDJ100CAF	PGZ	DGZ	111	123	1.0	100	2	162	18.5
GSESMDJ110AF	GSESMDJ110CAF	PHE	DHE	122	135	1.0	110	2	177	16.9
GSESMDJ120AF	GSESMDJ120CAF	PHG	DHG	133	147	1.0	120	2	193	15.5
GSESMDJ130AF	GSESMDJ130CAF	PHK	DHK	144	159	1.0	130	2	209	14.4
GSESMDJ150AF	GSESMDJ150CAF	PHM	DHM	167	185	1.0	150	2	243	12.3
GSESMDJ160AF	GSESMDJ160CAF	PHP	DHP	178	197	1.0	160	2	259	11.6
GSESMDJ170AF	GSESMDJ170CAF	PHR	DHR	189	209	1.0	170	2	275	10.9
GSESMDJ180AF	GSESMDJ180CAF	HHT	IHT	200	220	1.0	180	2	292	10.3
GSESMDJ190AF	GSESMDJ190CAF	HHV	IHV	211	232	1.0	190	2	308	9.7
GSESMDJ200AF	GSESMDJ200CAF	HHX	IHX	224	247	1.0	200	2	324	9.3
GSESMDJ210AF	GSESMDJ210CAF	HHZ	IHZ	237	263	1.0	210	2	340	8.8
GSESMDJ220AF	GSESMDJ220CAF	HIE	IIE	246	272	1.0	220	2	356	8.4

Typical Characteristics (T_A=25ºC Unless Otherwise Specified)

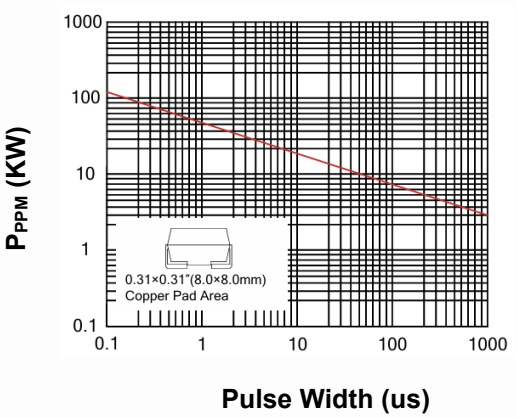


Figure 1. Peak Pulse Power Rating Curve

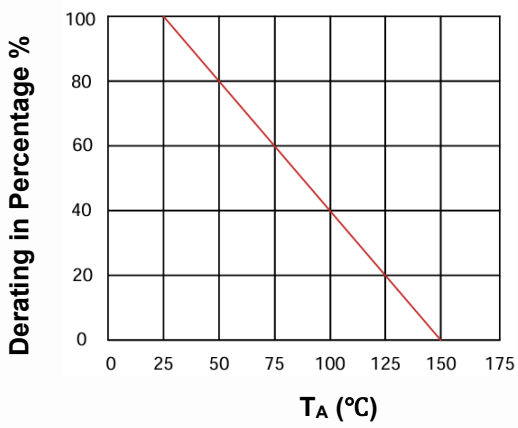


Figure 2. Pulse Derating Curve

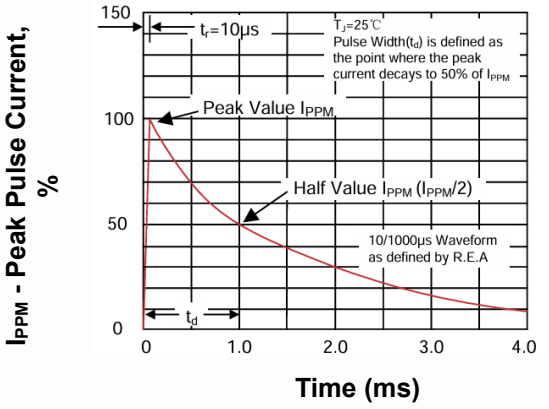


Figure 3. Pulse Waveform

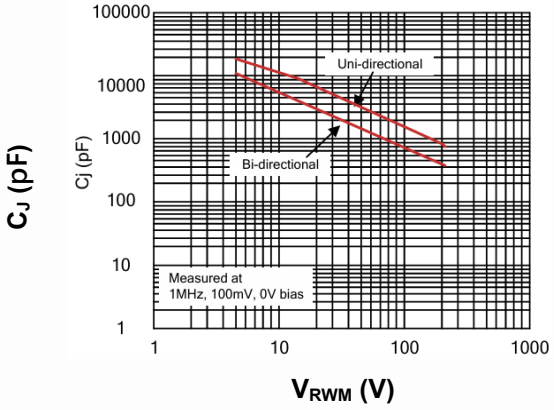


Figure 4. Typical Junction Capacitance

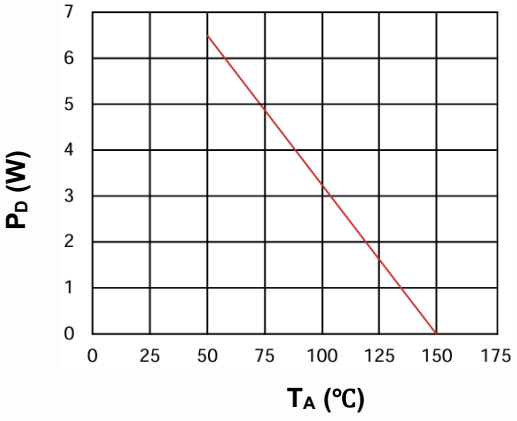


Figure 5. Steady State Power Dissipation Derating Curve

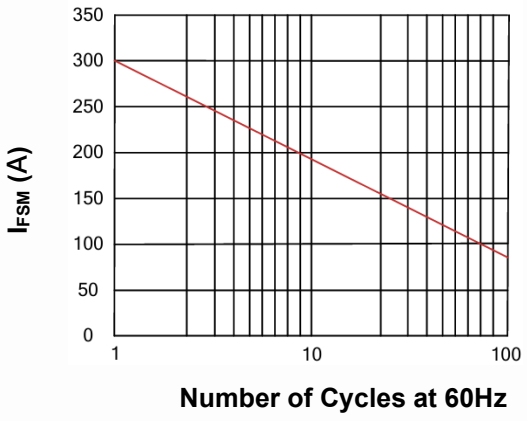
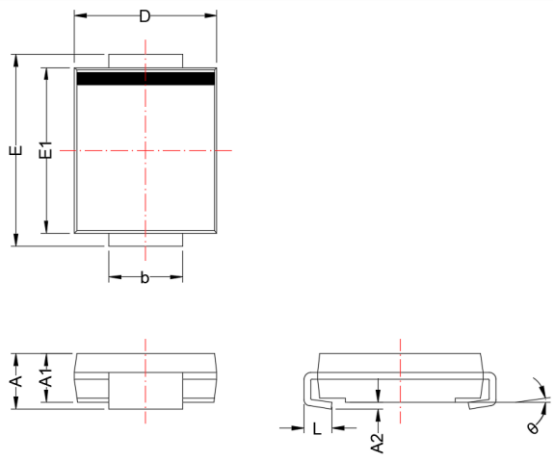


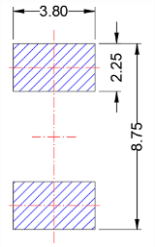
Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

SMC (DO-214AB)

Package Dimension



Recommended Land Pattern



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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