

## Features

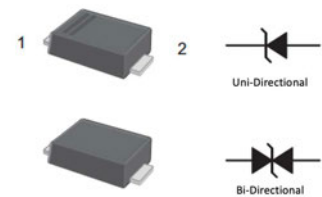
- For surface mounted applications in order to optimize board space.
- Low profile package
- Glass passivated junction
- Low inductance
- Plastic package has Underwires Laboratory Flammability



eSGB (SMAF)

## Mechanical Data

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. weight: 27mg / 0.00095oz



## Maximum Ratings and Thermal Characteristics

( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non-Repetitive Current Pulse Derated Above $T_A=25^{\circ}\text{C}$ ) <sup>1</sup>	$P_{PK}$	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) <sup>1,2,3</sup>	$I_{FSM}$	100	A
Instantaneous Forward Voltage @ $I_F=35\text{A}$ , $V_{BR}<100\text{V}$	$V_F$	3.5	V
Instantaneous Forward Voltage @ $I_F=35\text{A}$ , $V_{BR}\geq 100\text{V}$		5.0	
Operating Junction Temperature Range	$T_J$	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

Notes:

1. Valid provided that terminals are kept at ambient temperature.
2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
3. Unidirectional units only.

## Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Type		Marking		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
					V <sub>BR</sub> @ I <sub>T</sub>					
					V <sub>RRM</sub>	Min				
UNI	BI	UNI	BI	V	V	V	mA	μA	V	A
GSP6SMAFJ5.0A	GSP6SMAFJ5.0CA	KE	AE	5.0	6.40	7.25	10	800	9.2	65.20
GSP6SMAFJ6.0A	GSP6SMAFJ6.0CA	KG	AG	6.0	6.67	7.67	10	800	10.3	58.30
GSP6SMAFJ6.5A	GSP6SMAFJ6.5CA	KK	AK	6.5	7.22	8.30	10	500	11.2	53.60
GSP6SMAFJ7.0A	GSP6SMAFJ7.0CA	KM	AM	7.0	7.78	8.95	10	200	12.0	50.00
GSP6SMAFJ7.5A	GSP6SMAFJ7.5CA	KP	AP	7.5	8.33	9.58	1	100	12.9	46.50
GSP6SMAFJ8.0A	GSP6SMAFJ8.0CA	KR	AR	8.0	8.89	10.23	1	50	13.6	44.10
GSP6SMAFJ8.5A	GSP6SMAFJ8.5CA	KT	AT	8.5	9.44	10.82	1	20	14.4	41.70
GSP6SMAFJ9.0A	GSP6SMAFJ9.0CA	KV	AV	9.0	10.00	11.50	1	10	15.4	39.00
GSP6SMAFJ10A	GSP6SMAFJ10CA	KX	AX	10.0	11.10	12.80	1	5	17.0	35.30
GSP6SMAFJ11A	GSP6SMAFJ11CA	KZ	AZ	11.0	12.20	14.00	1	5	18.2	33.00
GSP6SMAFJ12A	GSP6SMAFJ12CA	LE	BE	12.0	13.30	15.30	1	5	19.9	30.20
GSP6SMAFJ13A	GSP6SMAFJ13CA	LG	BG	13.0	14.40	16.50	1	5	21.5	27.90
GSP6SMAFJ14A	GSP6SMAFJ14CA	LK	BK	14.0	15.60	17.90	1	5	23.2	25.90
GSP6SMAFJ15A	GSP6SMAFJ15CA	LM	BM	15.0	16.70	19.20	1	5	24.4	24.60
GSP6SMAFJ16A	GSP6SMAFJ16CA	LP	BP	16.0	17.80	20.50	1	5	26.0	23.10
GSP6SMAFJ17A	GSP6SMAFJ17CA	LR	BR	17.0	18.90	21.70	1	5	27.6	21.70
GSP6SMAFJ18A	GSP6SMAFJ18CA	LT	BT	18.0	20.00	23.30	1	5	29.2	20.50
GSP6SMAFJ20A	GSP6SMAFJ20CA	LV	BV	20.0	22.20	25.50	1	5	32.4	18.50
GSP6SMAFJ22A	GSP6SMAFJ22CA	LX	BX	22.0	24.40	28.00	1	5	35.5	16.90
GSP6SMAFJ24A	GSP6SMAFJ24CA	LZ	BZ	24.0	26.70	30.70	1	5	38.9	15.40
GSP6SMAFJ26A	GSP6SMAFJ26CA	ME	CE	26.0	28.90	33.20	1	5	42.1	14.30
GSP6SMAFJ28A	GSP6SMAFJ28CA	MG	CG	28.0	31.10	35.80	1	5	45.4	13.20
GSP6SMAFJ30A	GSP6SMAFJ30CA	MK	CK	30.0	33.30	38.30	1	5	48.4	12.40
GSP6SMAFJ33A	GSP6SMAFJ33CA	MM	CM	33.0	36.70	42.20	1	5	53.3	11.30
GSP6SMAFJ36A	GSP6SMAFJ36CA	MP	CP	36.0	40.00	46.00	1	5	58.1	10.30
GSP6SMAFJ40A	GSP6SMAFJ40CA	MR	CR	40.0	44.40	51.10	1	5	64.5	9.30
GSP6SMAFJ43A	GSP6SMAFJ43CA	MT	CT	43.0	47.80	54.90	1	5	69.4	8.60
GSP6SMAFJ45A	GSP6SMAFJ45CA	MV	CV	45.0	50.00	57.50	1	5	72.7	8.30
GSP6SMAFJ48A	GSP6SMAFJ48CA	MX	CX	48.0	53.30	61.30	1	5	77.4	7.80
GSP6SMAFJ51A	GSP6SMAFJ51CA	MZ	CZ	51.0	56.70	65.20	1	5	82.4	7.30

## Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Type		Marking		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
					V <sub>BR</sub> @ I <sub>T</sub>					
				V <sub>RRM</sub>	Min	Max	I <sub>T</sub>	I <sub>R</sub> @ V <sub>RRM</sub>	V <sub>C</sub> @ I <sub>PP</sub>	I <sub>PP</sub>
UNI	BI	UNI	BI	V	V	V	mA	µA	V	A
GSP6SMAFJ54A	GSP6SMAFJ54CA	NE	DE	54.0	60.00	69.00	1	5	87.1	6.90
GSP6SMAFJ58A	GSP6SMAFJ58CA	NG	DG	58.0	64.40	74.10	1	5	93.6	6.40
GSP6SMAFJ60A	GSP6SMAFJ60CA	NK	DK	60.0	66.70	76.70	1	5	96.8	6.20
GSP6SMAFJ64A	GSP6SMAFJ64CA	NM	DM	64.0	71.10	81.80	1	5	103.0	5.80
GSP6SMAFJ70A	GSP6SMAFJ70CA	NP	DP	70.0	77.80	89.50	1	5	113.0	5.30
GSP6SMAFJ75A	GSP6SMAFJ75CA	NR	DR	75.0	83.00	95.80	1	5	121.0	5.00
GSP6SMAFJ78A	GSP6SMAFJ78CA	NT	DT	78.0	86.00	99.70	1	5	126.0	4.80
GSP6SMAFJ85A	GSP6SMAFJ85CA	NV	DV	85.0	94.00	108.20	1	5	137.0	4.40
GSP6SMAFJ90A	GSP6SMAFJ90CA	NX	DX	90.0	100.00	115.50	1	5	146.0	4.10
GSP6SMAFJ100A	GSP6SMAFJ100CA	NZ	DZ	100.0	111.00	128.00	1	5	162.0	3.70
GSP6SMAFJ110A	GSP6SMAFJ110CA	PE	EE	110.0	122.00	140.50	1	5	177.0	3.40
GSP6SMAFJ120A	GSP6SMAFJ120CA	PG	EG	120.0	133.00	153.00	1	5	193.0	3.10
GSP6SMAFJ130A	GSP6SMAFJ130CA	PK	EK	130.0	144.00	165.50	1	5	209.0	2.90
GSP6SMAFJ150A	GSP6SMAFJ150CA	PM	EM	150.0	167.00	192.50	1	5	243.0	2.50
GSP6SMAFJ160A	GSP6SMAFJ160CA	PP	EP	160.0	178.00	205.00	1	5	259.0	2.30
GSP6SMAFJ170A	GSP6SMAFJ170CA	PR	ER	170.0	189.00	217.50	1	5	275.0	2.20
GSP6SMAFJ180A	GSP6SMAFJ180CA	PT	ET	180.0	200.00	230.40	1	5	290.0	2.10
GSP6SMAFJ190A	GSP6SMAFJ190CA	PV	EV	190.0	211.00	243.20	1	5	306.0	2.00
GSP6SMAFJ200A	GSP6SMAFJ200CA	PX	EX	200.0	222.00	256.00	1	5	322.0	1.90
GSP6SMAFJ210A	GSP6SMAFJ210CA	PZ	EZ	210.0	233.00	268.80	1	5	339.0	1.80
GSP6SMAFJ220A	GSP6SMAFJ220CA	QE	FE	220.0	244.00	281.60	1	5	355.0	1.70
GSP6SMAFJ250A	GSP6SMAFJ250CA	QG	FG	250.0	278.00	309.00	1	5	403.0	1.50
GSP6SMAFJ300A	GSP6SMAFJ300CA	QK	FK	300.0	333.00	371.00	1	5	484.0	1.20
GSP6SMAFJ350A	GSP6SMAFJ350CA	QM	FM	350.0	389.00	432.00	1	5	565.0	1.10
GSP6SMAFJ400A	GSP6SMAFJ400CA	QP	FP	400.0	444.00	494.00	1	5	645.0	0.90
GSP6SMAFJ440A	GSP6SMAFJ440CA	QR	FR	440.0	489.00	543.00	1	5	710.0	0.80

Note:

1. V<sub>BR</sub> measured after I<sub>T</sub> applied for 300us.

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

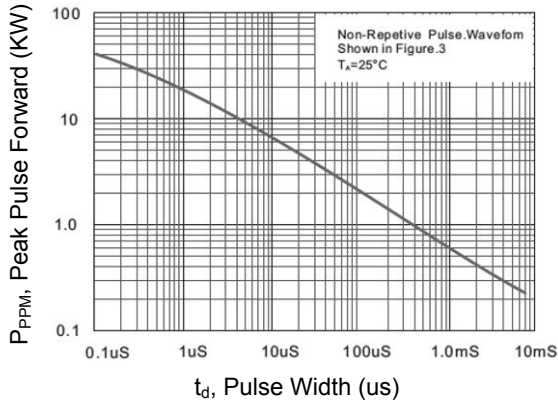


Figure 1. Peak Pulse Power Rating Curve

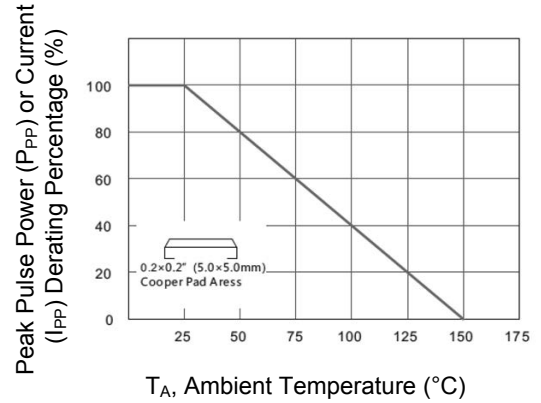


Figure 2. Forward Current Derating Curve

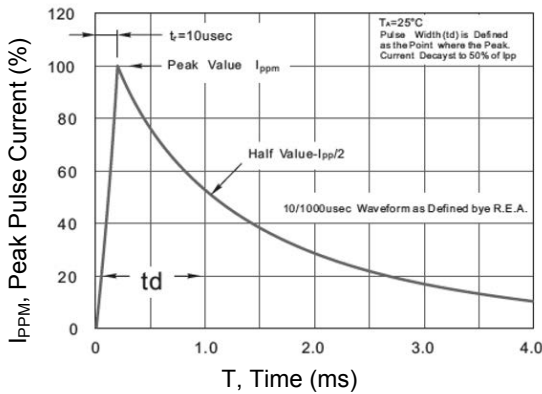


Figure 3. Pulse Waveform

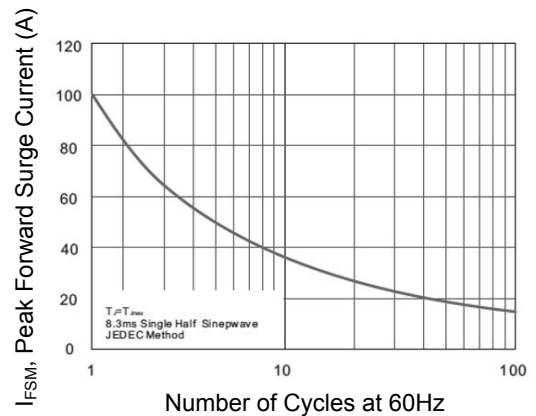


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current

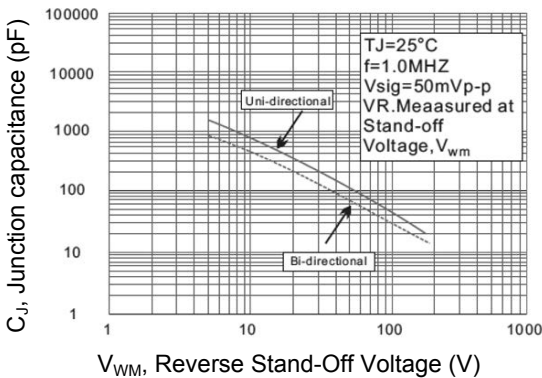
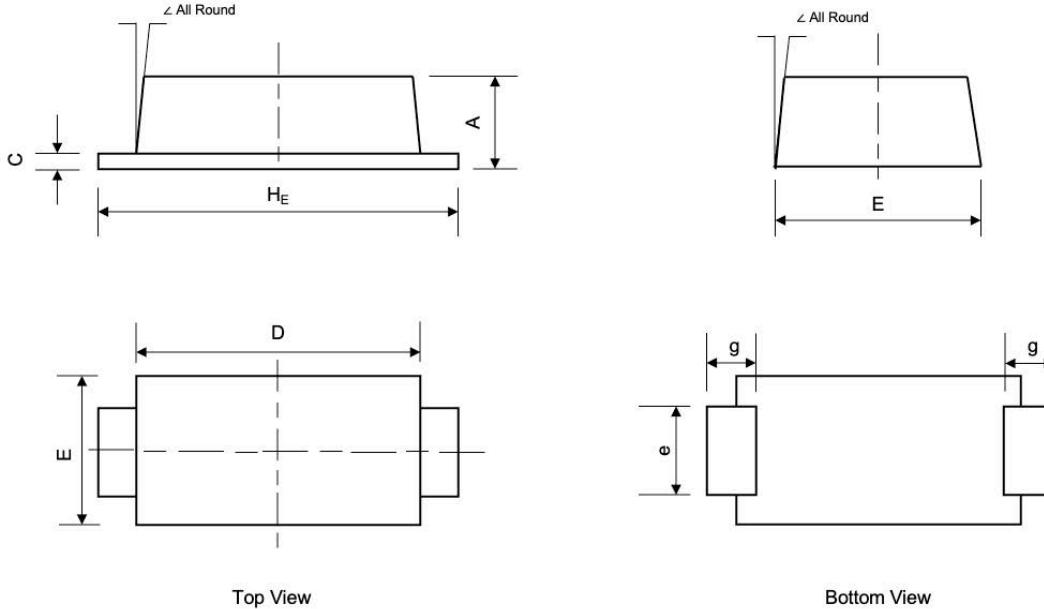


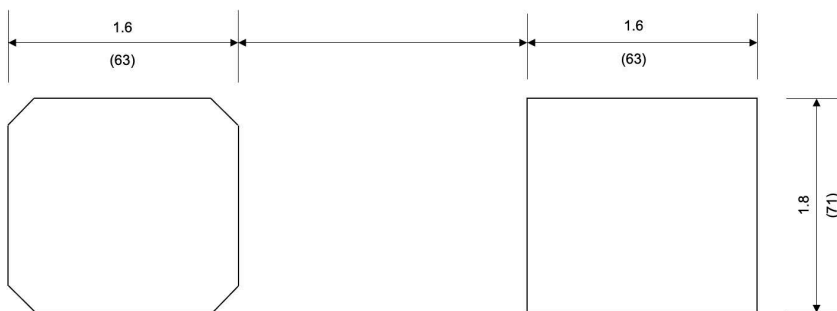
Figure 5. Typical Junction Capacitance

## Package Outline Dimensions (eSGB (SMAF))



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.047
C	0.120	0.200	0.005	0.008
D	3.300	3.700	0.130	0.146
E	2.400	2.700	0.094	0.106
e	1.300	1.600	0.051	0.063
g	0.800	1.200	0.031	0.047
HE	4.400	4.900	0.173	0.193
∠	7°			

## Recommended Pad Layout



Unit:  $\frac{\text{mm}}{\text{(mil)}}$