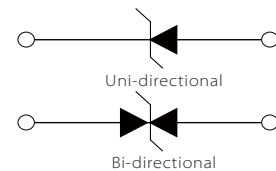


FEATURES

- | Low profile package
- | Ideal for automated placement
- | 600 Watt peak pulse power capability with a 10/1000 μ s waveform
- | For surface mounted applications to optimize board space
- | Excellent clamping capability
- | Very fast response time
- | Low incremental surge resistance



SMAF



Schematic Symbol

APPLICATIONS

- | Power supply protection
- | Automotive application
- | Industrial application
- | Power management

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

THERMAL CONSIDERATIONS

Parameter	Symbo	Value	Unit
Peak Pulse Power Dissipation on $T_A=25^{\circ}\text{C}$	P_{PPM}	600	W
Peak Forward Surge Current	I_{FSM}	100	A
Peak Pulse Current on 10/1000 μ s waveform	I_{PPM}	See Next Table	A

THERMAL CONSIDERATIONS

Parameter	Symbol	Value	Unit
Operating junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^{\circ}\text{C}$
Junction to Ambient on Printed circuit	$R_{\theta JA}$	150	$^{\circ}\text{C/W}$

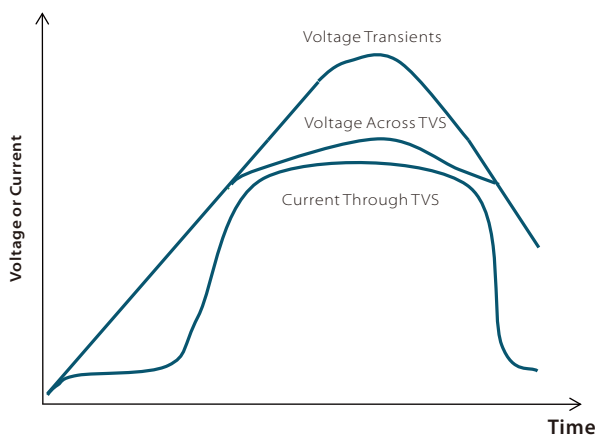
ELECTRICAL CHARACTERISTICS

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I _T	Breakdown Voltage Max.@I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Maximum Peak Pulse Current	Maximum Reverse Leakage @V _{RWM}
Unidirectional	Bidirectional	UNI	BI	V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
6SMAF5.0A	6SMAF5.0CA	KE	AE	5.0	6.40	7.00	10	9.2	63.5	200
6SMAF6.0A	6SMAF6.0CA	KG	AG	6.0	6.67	7.37	10	10.3	58.3	200
6SMAF6.5A	6SMAF6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	53.6	100
6SMAF7.0A	6SMAF7.0CA	KM	AM	7.0	7.78	8.60	10	12.0	50.0	80
6SMAF7.5A	6SMAF7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	46.6	50
6SMAF8.0A	6SMAF8.0CA	KR	AR	8.0	8.89	9.83	1	13.6	44.2	20
6SMAF8.5A	6SMAF8.5CA	KT	AT	8.5	9.44	10.40	1	14.4	41.7	10
6SMAF9.0A	6SMAF9.0CA	KV	AV	9.0	10.00	11.10	1	15.4	39.0	5
6SMAF10A	6SMAF10CA	KX	KX	10.0	11.10	12.30	1	17.0	35.3	2
6SMAF11A	6SMAF11CA	KZ	AZ	11.0	12.20	13.50	1	18.2	33.0	1
6SMAF12A	6SMAF12CA	LE	BE	12.0	13.30	14.70	1	19.9	30.2	1
6SMAF13A	6SMAF13CA	LG	BG	13.0	14.40	15.90	1	21.5	28.0	1
6SMAF14A	6SMAF14CA	LK	BK	14.0	15.60	17.20	1	23.2	25.9	1
6SMAF15A	6SMAF15CA	LM	BM	15.0	16.70	18.50	1	24.4	24.6	1
6SMAF16A	6SMAF16CA	LP	BP	16.0	17.80	19.70	1	26.0	23.1	1
6SMAF17A	6SMAF17CA	LR	BR	17.0	18.90	20.90	1	27.6	21.8	1
6SMAF18A	6SMAF18CA	LT	BT	18.0	20.00	22.10	1	29.2	20.6	1
6SMAF20A	6SMAF20CA	LV	BV	20.0	22.20	24.50	1	32.4	18.6	1
6SMAF22A	6SMAF22CA	LX	BX	22.0	24.40	26.90	1	35.5	16.9	1
6SMAF24A	6SMAF24CA	LZ	BZ	24.0	26.70	29.50	1	38.9	15.5	1
6SMAF26A	6SMAF26CA	ME	CE	26.0	28.90	31.90	1	42.1	14.3	1
6SMAF28A	6SMAF28CA	MG	CG	28.0	31.10	34.40	1	45.4	13.3	1
6SMAF30A	6SMAF30CA	MK	CK	30.0	33.30	36.80	1	48.4	12.4	1
6SMAF33A	6SMAF33CA	MM	CM	33.0	36.70	40.60	1	53.3	11.3	1
6SMAF36A	6SMAF36CA	MP	CP	36.0	40.00	44.20	1	58.1	10.4	1
6SMAF40A	6SMAF40CA	MR	CR	40.0	44.40	49.10	1	64.5	9.3	1
6SMAF43A	6SMAF43CA	MT	CT	43.0	47.80	52.80	1	69.4	8.7	1
6SMAF45A	6SMAF45CA	MV	CV	45.0	50.00	55.30	1	72.7	8.3	1
6SMAF48A	6SMAF48CA	MX	CX	48.0	53.30	58.90	1	77.4	7.8	1
6SMAF51A	6SMAF51CA	MZ	CZ	51.0	56.70	62.70	1	82.4	7.3	1

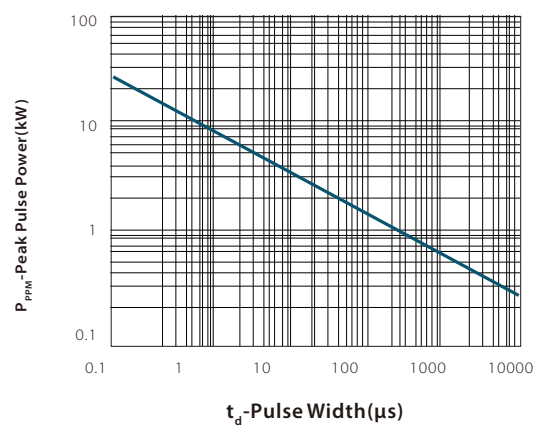
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I _T	Breakdown Voltage Max.@I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Maximum Peak Pulse Current	Maximum Reverse Leakage @V _{RWM}
Unidirectional	Bidirectional	UNI	BI	V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
6SMAF54A	6SMAF54CA	NE	DE	54.0	60.00	66.30	1	87.1	6.9	1
6SMAF58A	6SMAF58CA	NG	DG	58.0	64.40	71.20	1	93.6	6.5	1
6SMAF60A	6SMAF60CA	NK	DK	60.0	66.70	73.70	1	96.8	6.2	1
6SMAF64A	6SMAF64CA	NM	DM	64.0	71.10	78.60	1	103.0	5.9	1
6SMAF70A	6SMAF70CA	NP	DP	70.0	77.80	86.00	1	113.0	5.3	1
6SMAF75A	6SMAF75CA	NR	DR	75.0	83.30	92.10	1	121.0	5.0	1
6SMAF78A	6SMAF78CA	NT	DT	78.0	86.70	95.80	1	126.0	4.8	1
6SMAF85A	6SMAF85CA	NV	DV	85.0	94.40	104.00	1	137.0	4.4	1
6SMAF90A	6SMAF90CA	NX	DX	90.0	100.00	111.00	1	146.0	4.1	1
6SMAF100A	6SMAF100CA	NZ	DZ	100.0	111.00	123.00	1	162.0	3.7	1

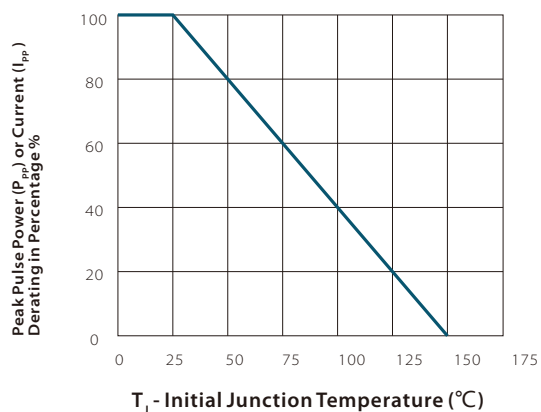
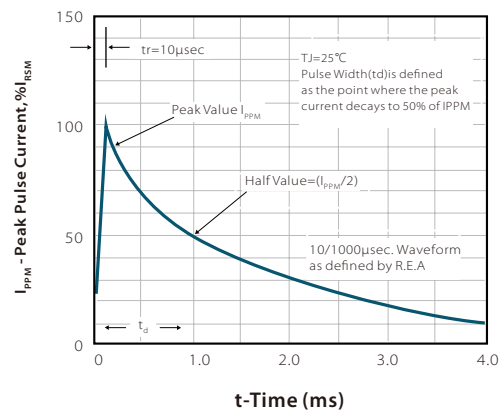
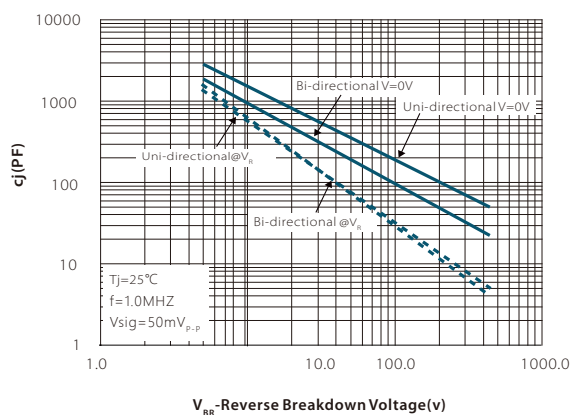
RATINGS AND CHARACTERISTIC CURVES (T_A=25°C)

TVS Transients Clamping Waveform



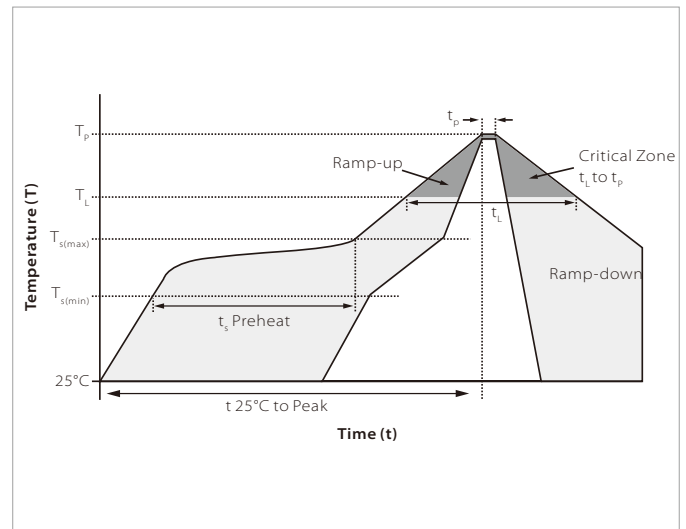
Peak Pulse Power Rating Curve



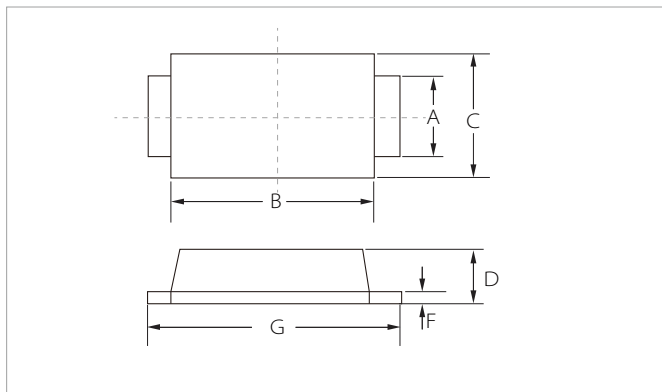
Pulse Derating Curve

Pulse Waveform

Typical Junction Capacitance


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_p)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

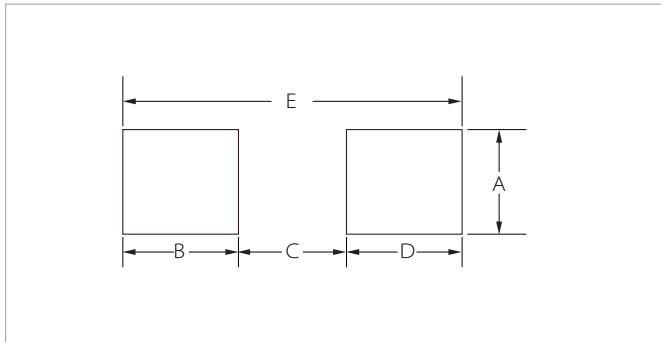


SMAF PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.45	0.053	0.057
B	3.40	3.80	0.134	0.145
C	2.40	2.80	0.094	0.110
D	0.95	1.45	0.037	0.057
F	0.15	0.22	0.006	0.009
G	4.40	4.80	0.173	0.189

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.70	-	0.067	-
B	2.50	-	0.098	-
C	-	1.5	-	0.059
D	2.50	-	0.098	-
E	6.50REF		0.256REF	

ORDERING INFORMATION

Part Number	Package	QTY/Reel	Reel Size
6SMAFxx(C)A	SMAF	5000PCS	13"

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