

FEATURES

- | Low profile package
- | Ideal for automated placement
- | 400 Watt peak pulse power capability with a 10/1000µs waveform
- | For surface mounted applications to optimize board space
- | Excellent clamping capability
- | Very fast response time
- | Low incremental surge resistance
- | Meet AEC-Q101 Requirements



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

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on $T_A=25^{\circ}\text{C}$	P_{PPM}	400	W
Peak Forward Surge Current	I_{FSM}	40	A
Peak Pulse Current on 10/1000 us waveform	I_{PPM}	see Table 1	A

THERMAL CONSIDERATIONS

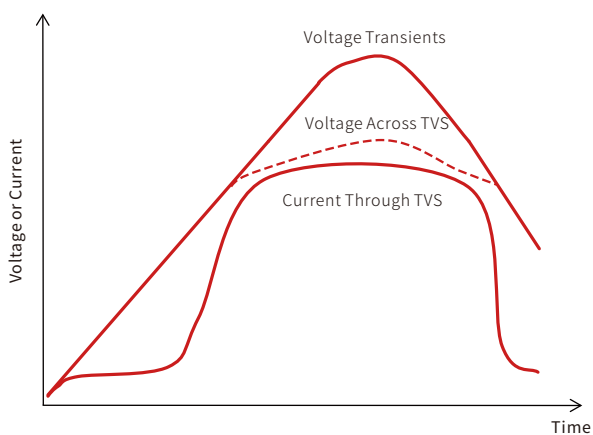
Parameter	Symbol	Value	Unit
Operating junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^{\circ}\text{C}$
Junction to Ambient on Printed circuit	$R_{\theta JA}$	150	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

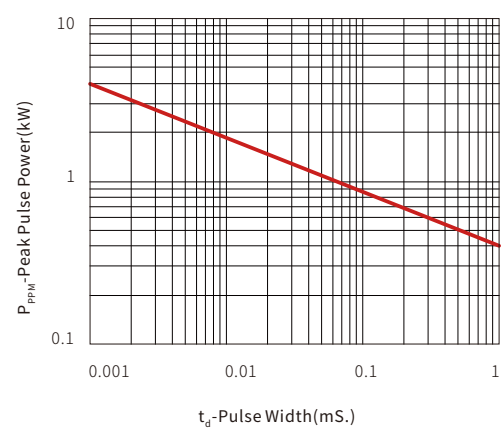
Part Number	Device Marking Code	Reverse Stand-off Voltage	Breakdown Voltage Min.@ I_T	Breakdown Voltage Max.@ I_T	Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
		V_{RWM} (V)	V_{BR} (V)	V_{BR} (V)	I_T (mA)	V_C (V)	I_{PP} (A)	I_R (uA)
TPSMAF18A	BTA	18.0	20.0	22.1	1.0	29.2	13.7	1.0

CHARACTERISTIC CURVES

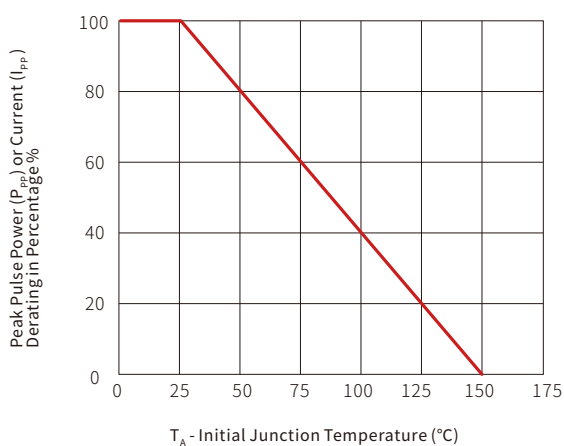
TVS Transients Clamping Waveform



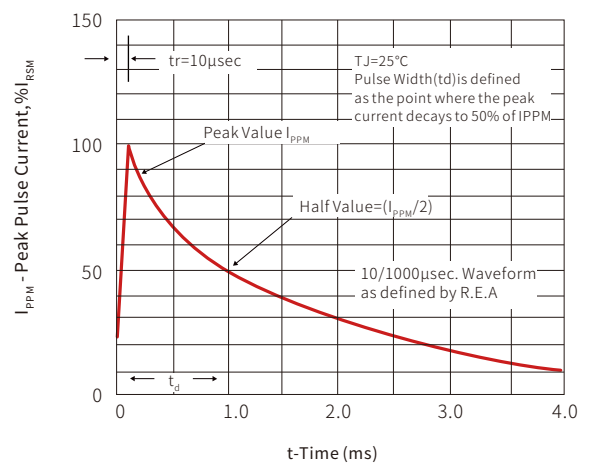
Peak Pulse Power Rating Curve

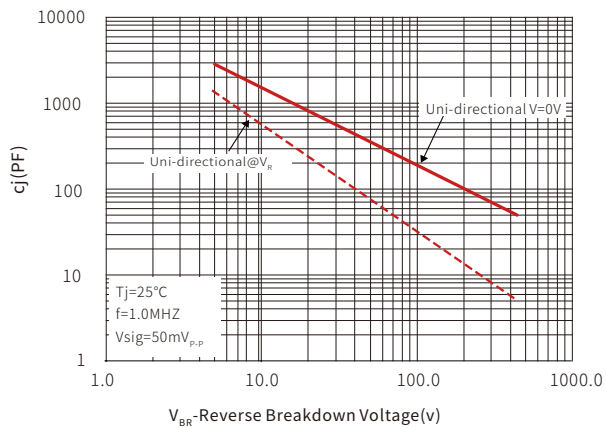


Pulse Derating Curve



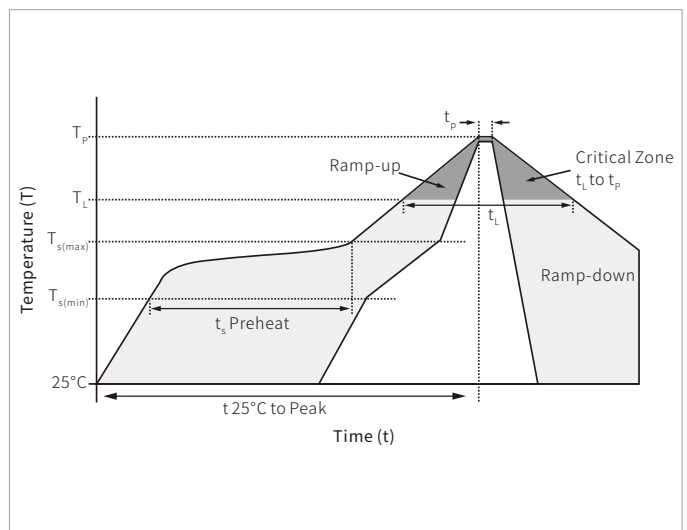
Pulse Waveform



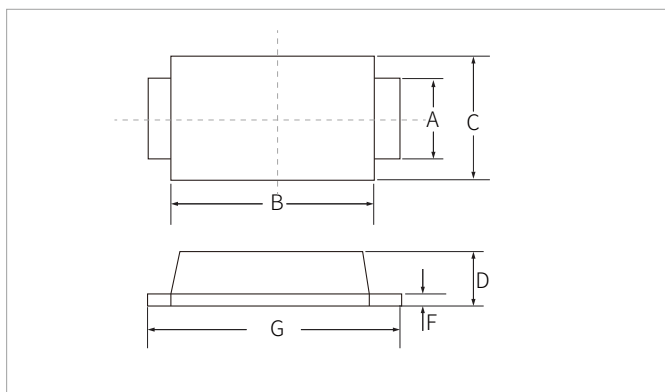
Typical Junction Capacitance


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_s)	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

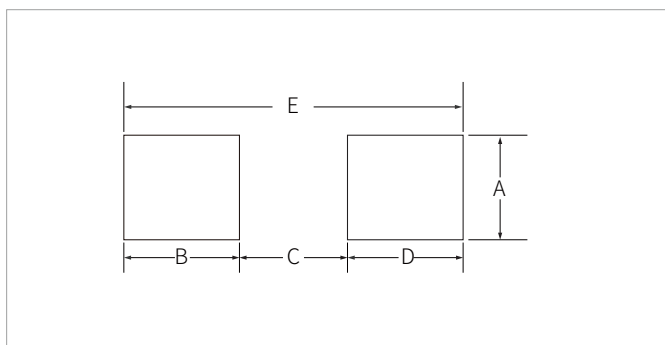


SMAF PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.35	1.60	0.053	0.063
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
TPSMAF18A	SMAF	5000PCS	13"

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By QR Code

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