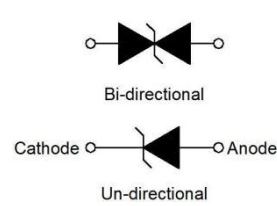


400W Transient Voltage Suppressor

Parameter	Value	Unit
P _{PP}	400	W
V _{RWM}	5.0~75	V
T _J	-55 to +125	°C



SMAF

Features

- Glass passivated or planar junction
- Excellent clamping capability
- Repetition rate (duty cycle): 0.01%
- Low profile package and low inductance
- Fast response time: typically less than 1.0ps from 0V to VBR min.
- High temperature soldering: 260°C/10s at terminals.
- For surface mounted applications in order to optimize board space.

Applications

- I/O Interface
- Power lines
- Telecommunication
- Industrial Electronics

Maximum Rated Values (at T_J = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000µs waveform	P _{PP}	400	W
Steady state power dissipation at T _L =75°C	P _{M(AV)}	1.0	W
Operating junction temperature range	T _J	-55 to +125	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Electrical Characteristics (at T_J = 25°C unless otherwise specified)

Part Number		VR	IR@VR	VBR@IT		IT	VC@IPP	IPP①
Uni-Polar	Bi-Polar	V	µA	min(V)	max(V)	mA	max(V)	A
SMAF5.0A	SMAF5.0CA	5	800	6.4	7	10	9.2	43.48
SMAF6.0A	SMAF6.0CA	6	800	6.67	7.37	10	10.3	38.84
SMAF6.5A	SMAF6.5CA	6.5	500	7.22	7.98	10	11.2	35.72
SMAF7.0A	SMAF7.0CA	7	200	7.78	8.6	10	12.0	33.34
SMAF7.5A	SMAF7.5CA	7.5	100	8.33	9.21	1	12.9	31.01
SMAF8.0A	SMAF8.0CA	8	50	8.89	9.83	1	13.6	29.42
SMAF8.5A	SMAF8.5CA	8.5	20	9.44	10.4	1	14.4	27.78
SMAF9.0A	SMAF9.0CA	9	10	10	11.1	1	15.4	25.98
SMAF10A	SMAF10CA	10	5	11.1	12.3	1	17.0	23.53
SMAF11A	SMAF11CA	11	1	12.2	13.5	1	18.2	21.98

SMAF12A	SMAF12CA	12	1	13.3	14.7	1	19.9	20.11
SMAF13A	SMAF13CA	13	1	14.4	15.9	1	21.5	18.61
SMAF14A	SMAF14CA	14	1	15.6	17.2	1	23.2	17.25
SMAF15A	SMAF15CA	15	1	16.7	18.5	1	24.4	16.40
SMAF16A	SMAF16CA	16	1	17.8	19.7	1	26.0	15.39
SMAF17A	SMAF17CA	17	1	18.9	20.9	1	27.6	14.50
SMAF18A	SMAF18CA	18	1	20	22.1	1	29.2	13.70
SMAF20A	SMAF20CA	20	1	22.2	24.5	1	32.4	12.35
SMAF22A	SMAF22CA	22	1	24.4	26.9	1	35.5	11.27
SMAF24A	SMAF24CA	24	1	26.7	29.5	1	38.9	10.29
SMAF26A	SMAF26CA	26	1	28.9	31.9	1	42.1	9.51
SMAF28A	SMAF28CA	28	1	31.1	34.4	1	45.4	8.82
SMAF30A	SMAF30CA	30	1	33.3	36.8	1	48.4	8.27
SMAF33A	SMAF33CA	33	1	36.7	40.6	1	53.3	7.51
SMAF36A	SMAF36CA	36	1	40	44.2	1	58.1	6.89
SMAF40A	SMAF40CA	40	1	44.4	49.1	1	64.5	6.21
SMAF43A	SMAF43CA	43	1	47.8	52.8	1	69.4	5.77
SMAF45A	SMAF45CA	45	1	50	55.3	1	72.7	5.51
SMAF48A	SMAF48CA	48	1	53.3	58.9	1	77.4	5.17
SMAF51A	SMAF51CA	51	1	56.7	62.7	1	82.4	4.86
SMAF54A	SMAF54CA	54	1	60	66.3	1	87.1	4.60
SMAF58A	SMAF58CA	58	1	64.4	71.2	1	93.6	4.28
SMAF60A	SMAF60CA	60	1	66.7	73.7	1	96.8	4.14
SMAF64A	SMAF64CA	64	1	71.1	78.6	1	103.0	3.89
SMAF70A	SMAF70CA	70	1	77.8	86	1	113.0	3.54
SMAF75A	SMAF75CA	75	1	83.3	92.1	1	121.0	3.31

Ratings And V-I Characteristics Curves (at $T_j=25^\circ\text{C}$, unless otherwise noted)

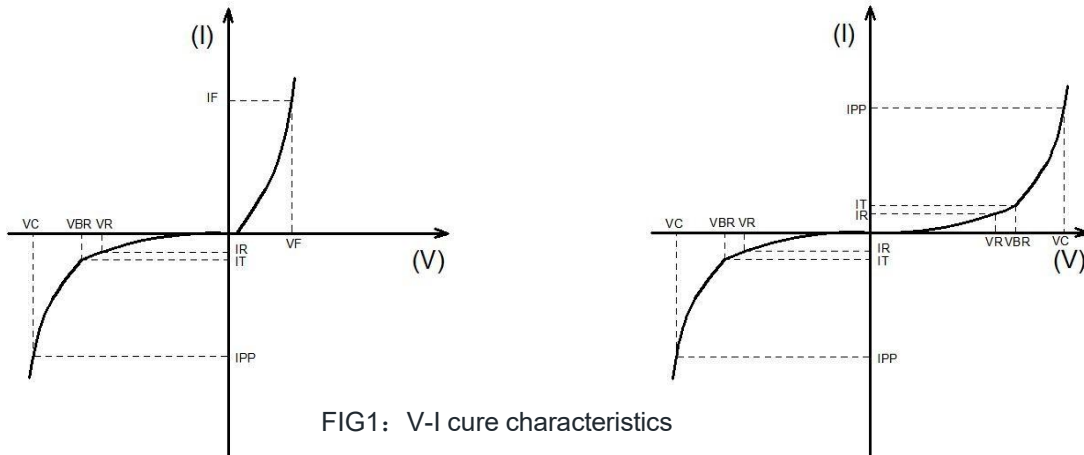
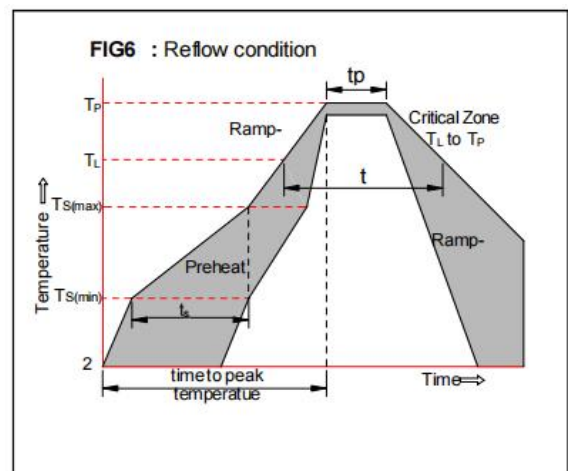


FIG1: V-I cure characteristics

Symbol	Parameter
I_F	Mean Forward Current
V_F	Maximum Forward Voltage @ I_F
V_R	Peak Reverse Working Voltage
T_R	Reverse Leakage Current @ V_R
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}

Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	Temperature Min ($T_{s(min)}$)	+150°C
	Temperature Max ($T_{s(max)}$)	+200°C
	Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	Temperature (T_L) (Liquid us)	+217°C
	Temperature (t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



Typical Characteristics

FIG2: Pulse Derating Curve

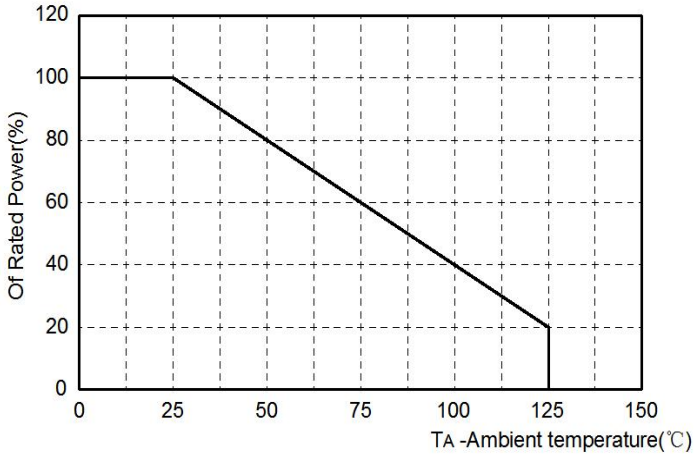


FIG3: Pulse Waveform

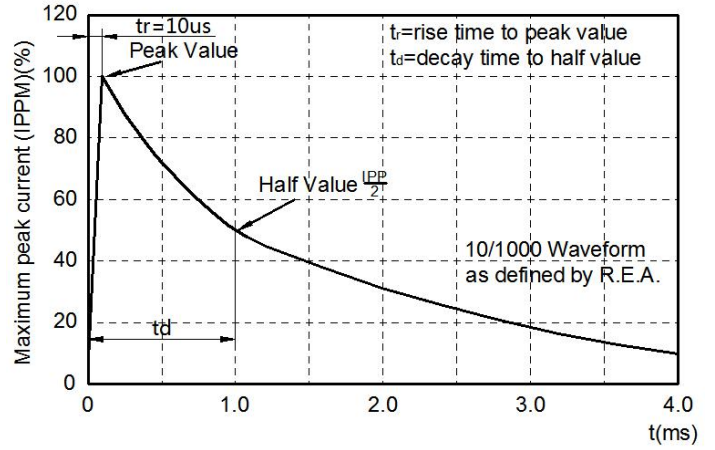


FIG4: Peak Pulse Power Rating Curve

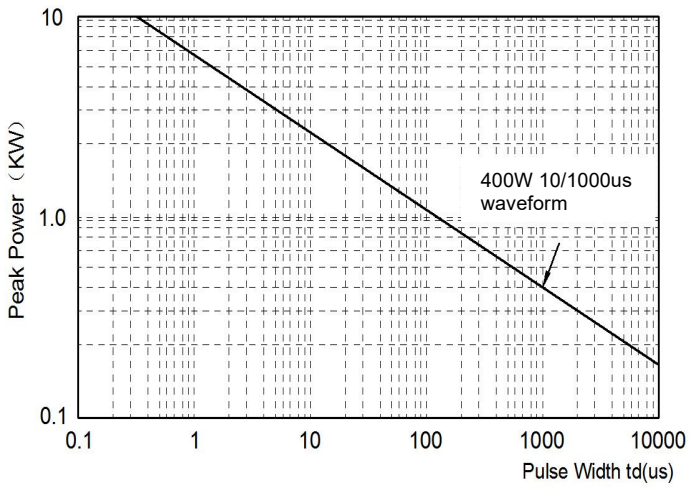
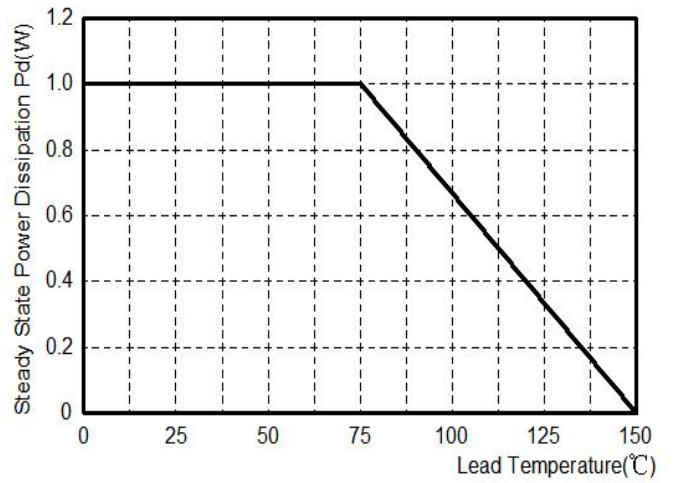
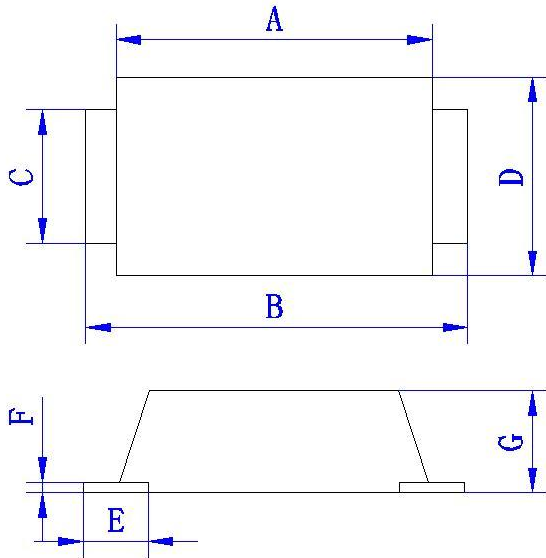


FIG5: Steady State Power Dissipation



Package Outlines

SMAF



Ref.(mm)	Millimeters	
	Min.	Max.
A	3.3	3.7
B	4.4	4.9
C	1.3	1.6
D	2.4	2.8
E	0.7	1.2
F	0.1	0.3
G	0.9	1.1

*Important Usage Information and Disclaimer

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