

FEATURES

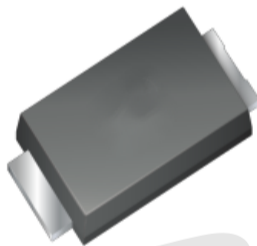
- Glass passivated chip junction
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

MECHANICAL DATA

- Case: SMAF
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.035g (approximately)



SMAF



KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	2	A
V_{RRM}	200 - 1000	V
I_{FSM}	50	A
$T_{J\ MAX}$	150	°C
Package	SMAF	
Configuration	Single die	

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

PARAMETER		SYMBOL	TPRS2DFG	UNIT
Repetitive peak reverse voltage		V_{RRM}	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	700	V
Forward current		I_F	2	A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	I_{FSM}	50	A
	$t = 1.0\text{ms}$		130	A
Junction temperature		T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	15	$^{\circ}\text{C/W}$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	89	$^{\circ}\text{C/W}$
Junction-to-case thermal resistance	$R_{\theta JC}$	22	$^{\circ}\text{C/W}$

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 1\text{A}, T_J = 25^{\circ}\text{C}$	V_F	1.04	-	V
	$I_F = 2\text{A}, T_J = 25^{\circ}\text{C}$		1.14	1.30	V
	$I_F = 1\text{A}, T_J = 125^{\circ}\text{C}$		0.87	-	V
	$I_F = 2\text{A}, T_J = 125^{\circ}\text{C}$		0.98	1.23	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^{\circ}\text{C}$	I_R	-	5	μA
	$T_J = 125^{\circ}\text{C}$		-	100	μA
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	t_{rr}	-	150	ns
			-	250	ns
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	21	-	pF
			10	-	pF

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

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

Fig.1 Forward Current Derating Curve

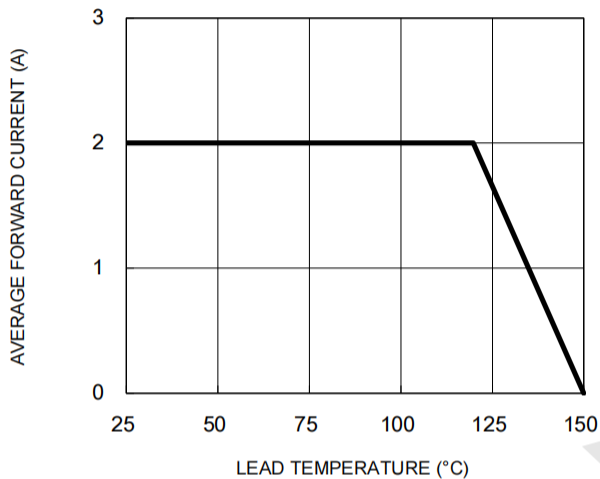


Fig.2 Typical Junction Capacitance

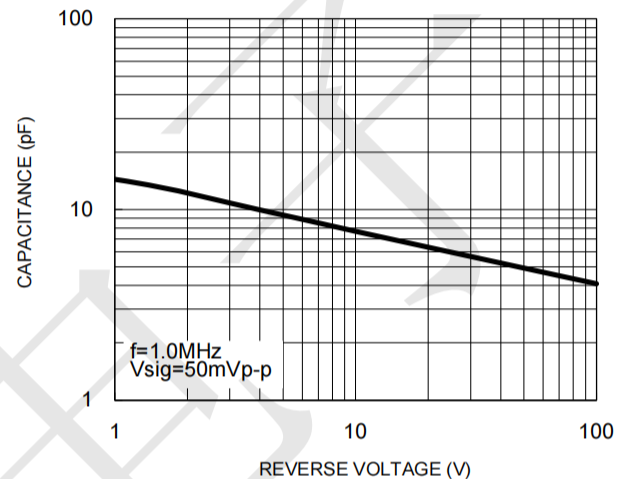


Fig.3 Typical Reverse Characteristics

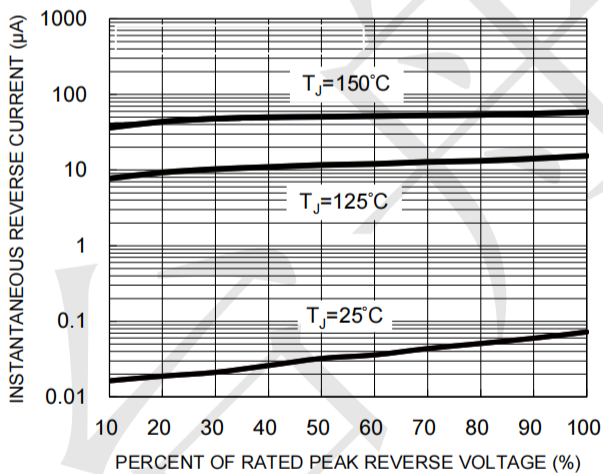
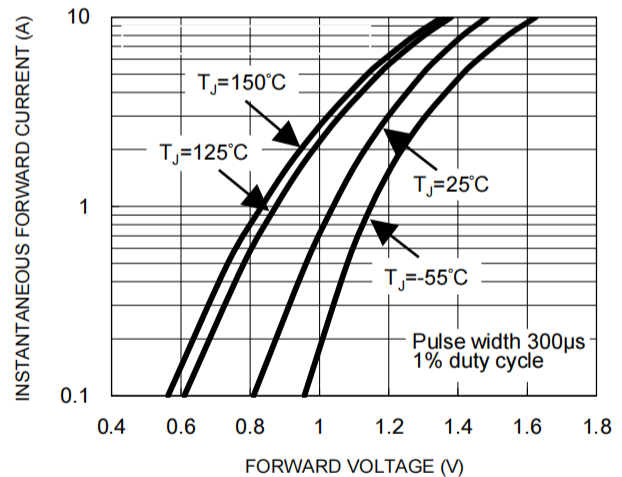
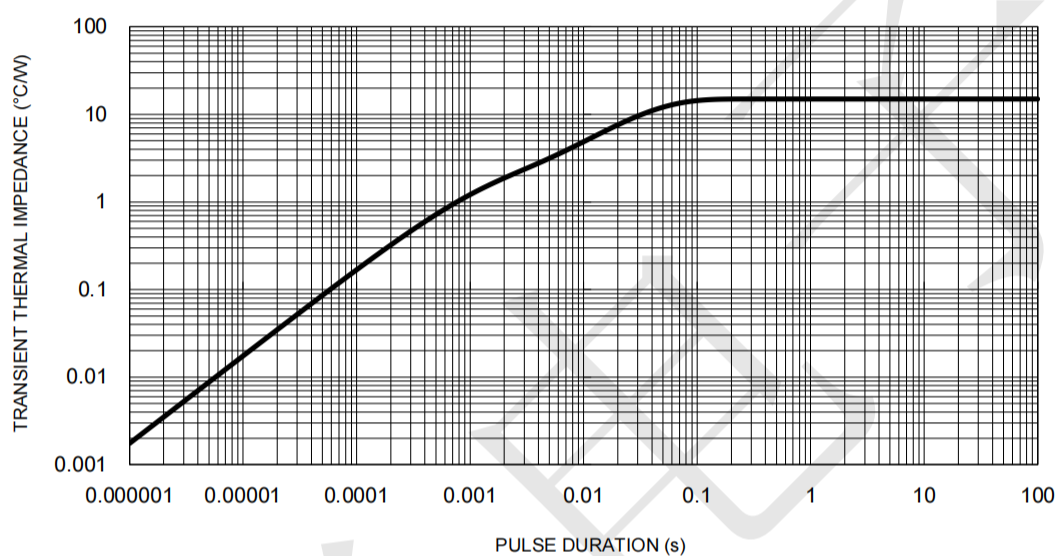


Fig.4 Typical Forward Characteristics

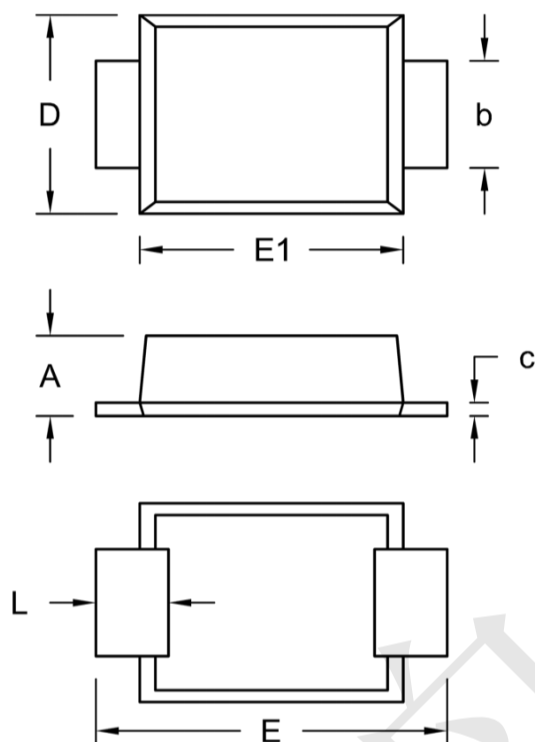


CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.5 Typical Transient Thermal Impedance

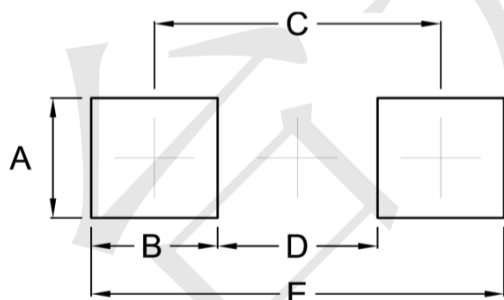


PACKAGE OUTLINE DIMENSIONS (SMAF)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.00	1.10	0.039	0.043
b	1.30	1.50	0.051	0.059
c	0.10	0.25	0.004	0.010
D	2.40	2.80	0.094	0.110
E	4.40	4.80	0.173	0.189
E1	3.25	3.65	0.128	0.144
L	0.70	1.20	0.028	0.047

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.57	0.062
B	1.66	0.065
C	3.76	0.148
D	2.10	0.083
E	5.42	0.213