

Features

- The plastic package carries UL Flammability Classification 94V-0
- For surface mounted applications
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals



Mechanical Characteristics

- Case: SMAF package molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0012 ounce, 0.034 grams

Absolute Maximum Ratings and Electrical Parameters (TA=25°C unless otherwise specified)

PARAMETER	SYMBOL	E1AF	E1BF	E1CF	E1DF	E1EF	E1GF	E1JF	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V	
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{AV}	1							A	
Peak forward surge current	I_{FSM}	30							A	
Maximum instantaneous forward voltage at 1A	V_F	0.95					1.25	1.7	V	
Maximum DC reverse current at rated DC blocking voltage	$T_A=25\text{ }^\circ\text{C}$	I_R	5							μA
	$T_A=100\text{ }^\circ\text{C}$	I_{RT}	50							μA
Maximum reverse recovery time ^(NOTE 1)	t_{rr}	35							ns	
Typical junction capacitance ^(NOTE 2)	C_J	15							pF	
Typical Thermal Resistance Junction to Ambient ^(NOTE 3)	$R_{\theta JA}$	75							$^\circ\text{C/W}$	
Typical Thermal Resistance Junction to Lead ^(NOTE 3)	$R_{\theta JL}$	22							$^\circ\text{C/W}$	
Operating Temperature Range	T_J	-55 to 150							$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	-55 to 150							$^\circ\text{C}$	

Note1: Reverse recovery condition $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{rr}=0.25\text{A}$

Note2: Measured at 1MHz and applied reverse voltage of 4.0V DC.

Note3: PCB. mounted with 5×5mm copper pad areas

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SMAF	Tape/Reel, 11" reel	5000	EIA-481-1
	Tape/Reel, 7" reel	3000	EIA-481-1

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

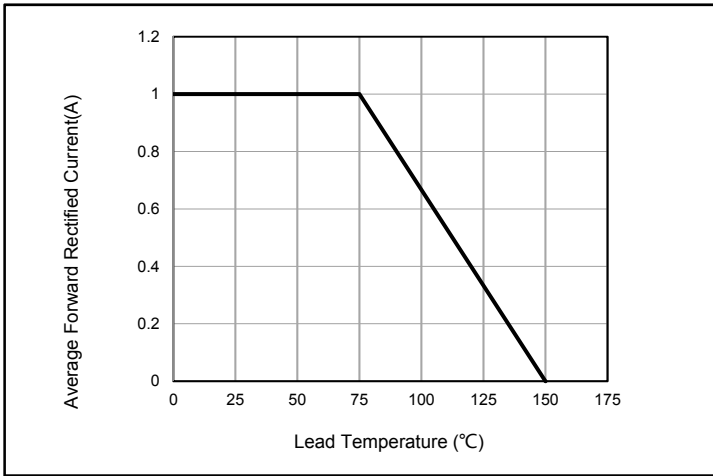


Fig. 1 - Forward Current Derating Curve

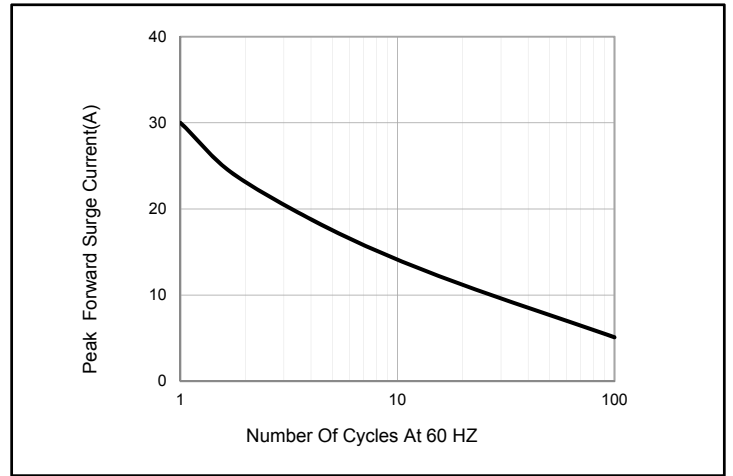


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

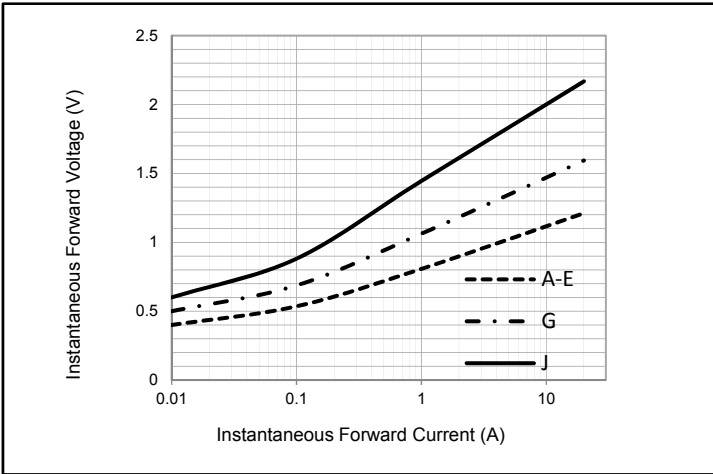


Fig. 3 - Typical Instantaneous Forward Characteristics

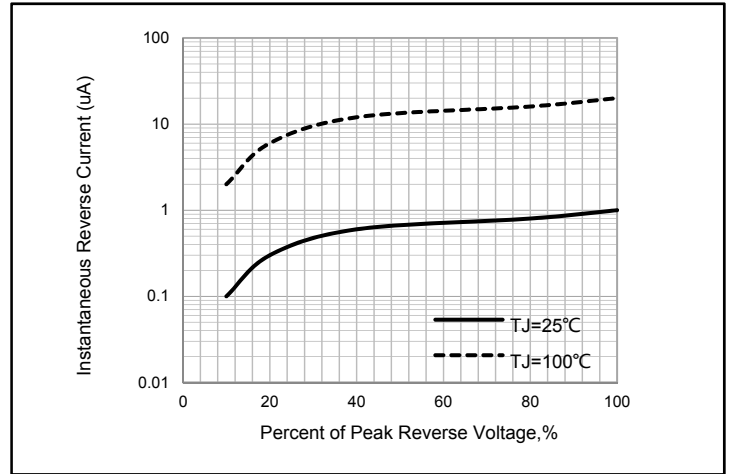


Fig. 4 - Typical Reverse Characteristics

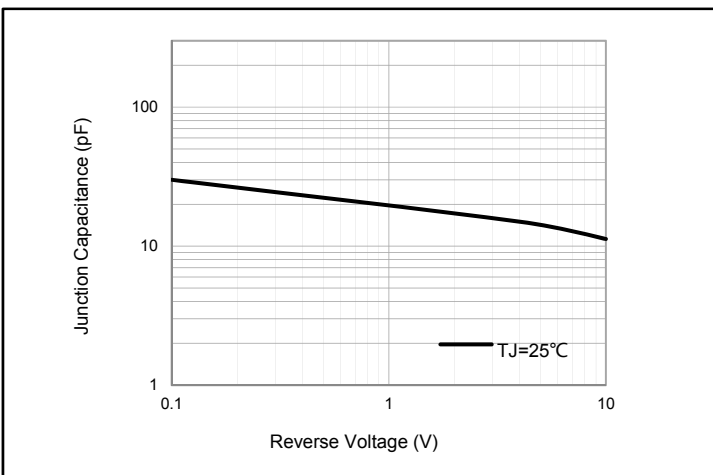


Fig. 5 - Typical Junction Capacitance

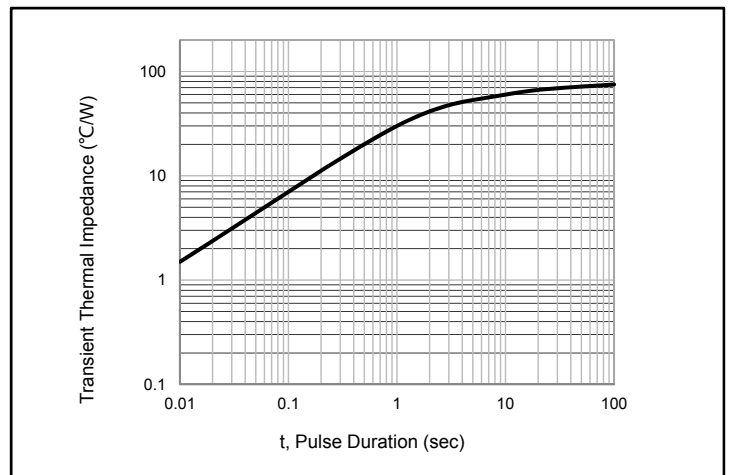
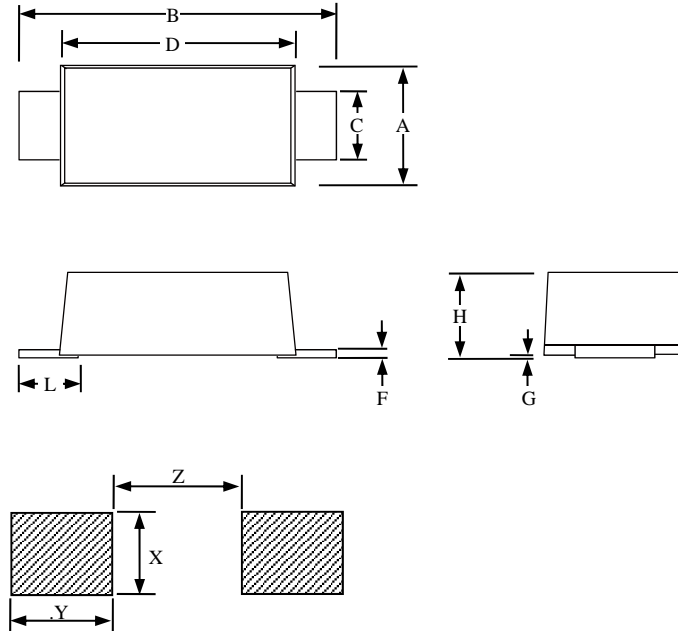


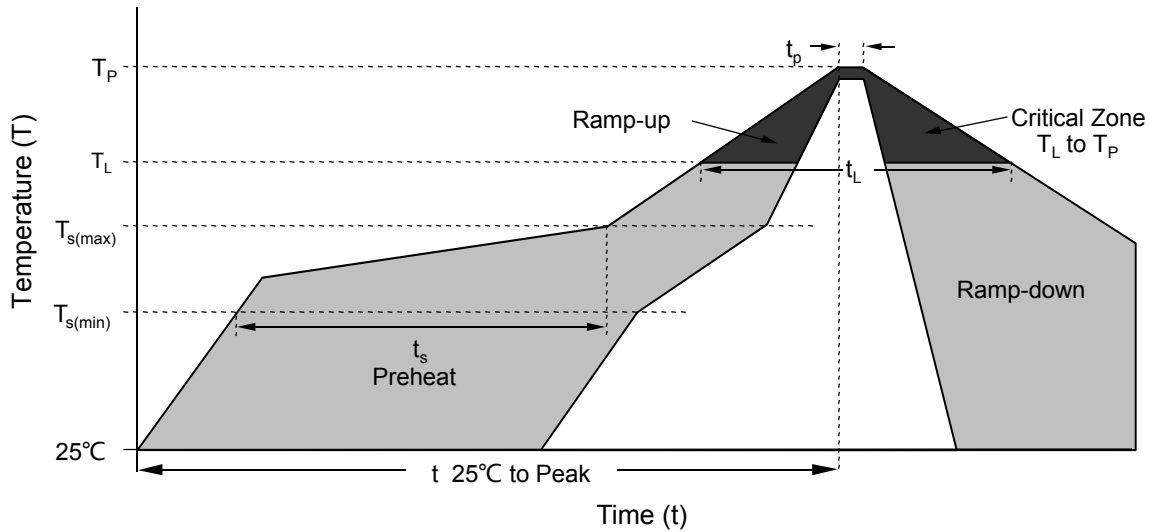
Fig. 6 - Typical Transient Thermal Impedance

Package Dimensions



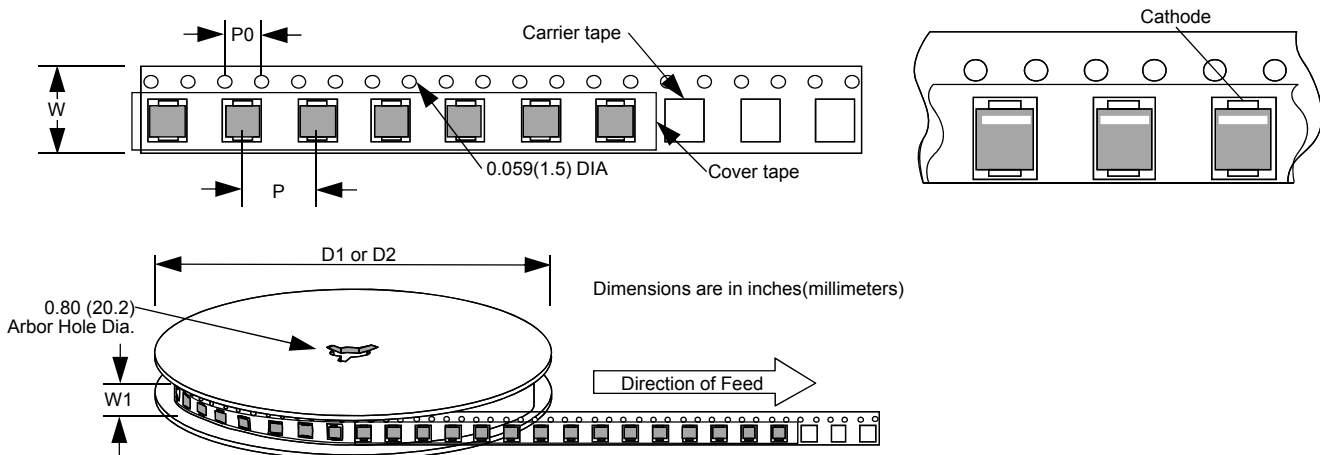
SMAF						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.094		0.11	2.4		2.8
B	0.173		0.189	4.4		4.8
C	0.051		0.059	1.3		1.5
D	0.128		0.144	3.25		3.65
L	0.028		0.047	0.7		1.2
F	0.006		0.012	0.15		0.3
G	-		0.004	-		0.1
H	0.043		0.055	1.1		1.4
X		0.067			1.7	
Y		0.098			2.5	
Z		0.059			1.5	

Soldering Parameters



Reflow Condition		Lead-free assembly
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 (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 (t_L)	60 – 150 secs
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

Tape and Reel Specification



Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
P		0.157			4	
P0		0.157			4	
W		0.472			12	
W1		0.492			12.5	
D1		7			177.8	
D2		11			279.4	

Disclaimer

Disclaimer

This document is for reference only, data sheet specifications and its information contained are intended to provide a product description only. Weichao Brand. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices). Customers using or selling weichaosemi components for use in such applications do so at their own risk and shall agree to fully indemnify weichaosemi and its subsidiaries harmless against all claims, damages and expenditures.

For additional information, please visit our website <http://www.weichaosemi.com>