

SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 1.0 Ampere

Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Super fast switching for high efficiency
- 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
- Glass passivated chip junction

Mechanical Data

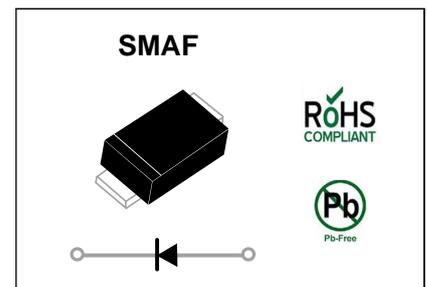
- Case: SMAF molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0014 ounce, 0.038 grams

Specification

Maximum Rating And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.



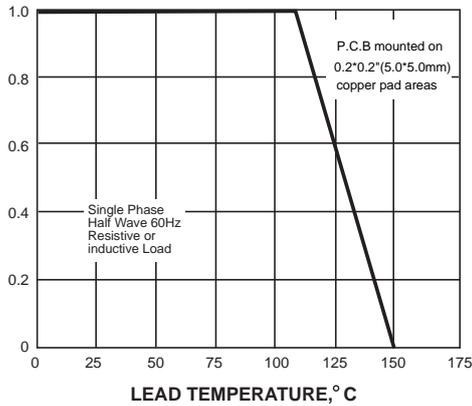
	SYMBOLS	ES1AAF	ES1BAF	ES1CAF	ES1DAF	ES1EAF	ES1GAF	ES1JAF	UNITS	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V	
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V	
Maximum average forward rectified current at $T_L=110^\circ\text{C}$	$I_{(AV)}$	1.0							A	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30.0							A	
Maximum instantaneous forward voltage at 1.0A	V_F	0.95			1.25		1.7		V	
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	I_R	5.0				50.0				μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	35								ns
Typical junction capacitance (NOTE 2)	C_J	15.0								pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	88.0								$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$	

Note: 1.Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
 2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3.P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

Ratings and characteristic curves ES1AAF thru ES1JAF

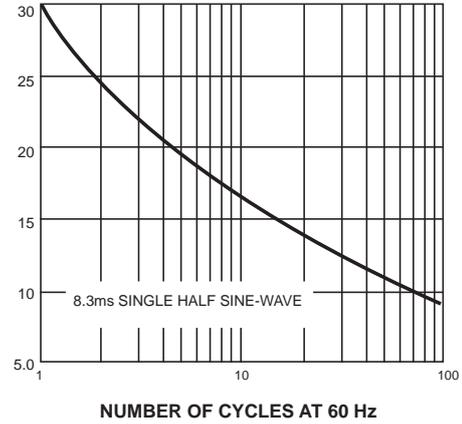
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



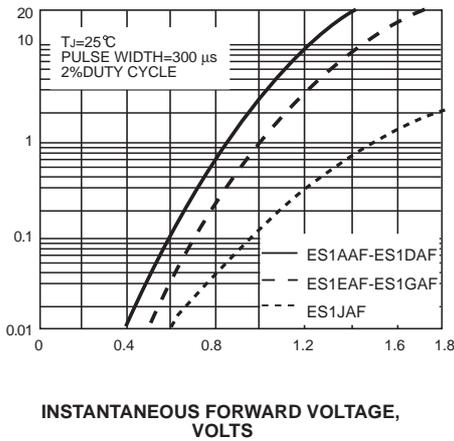
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



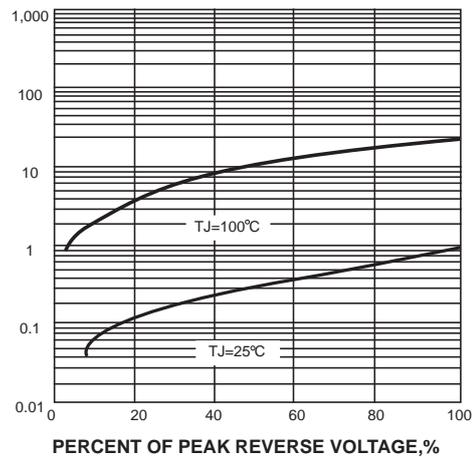
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



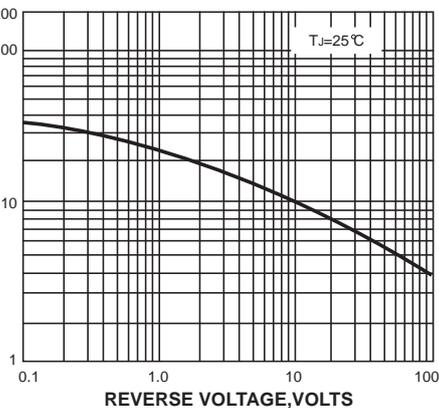
INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



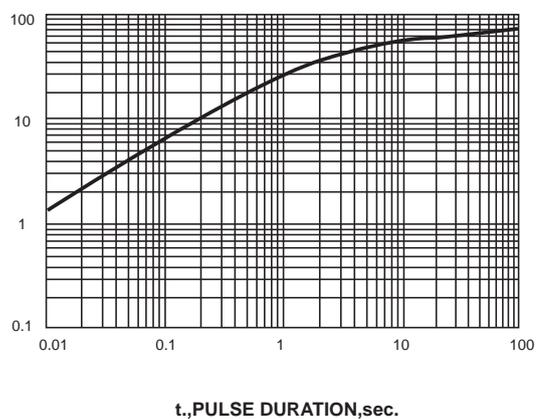
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



Marking and packging illustration

1、Marking



SYMBOL	Explanation
A	Product Name

2、Packaging



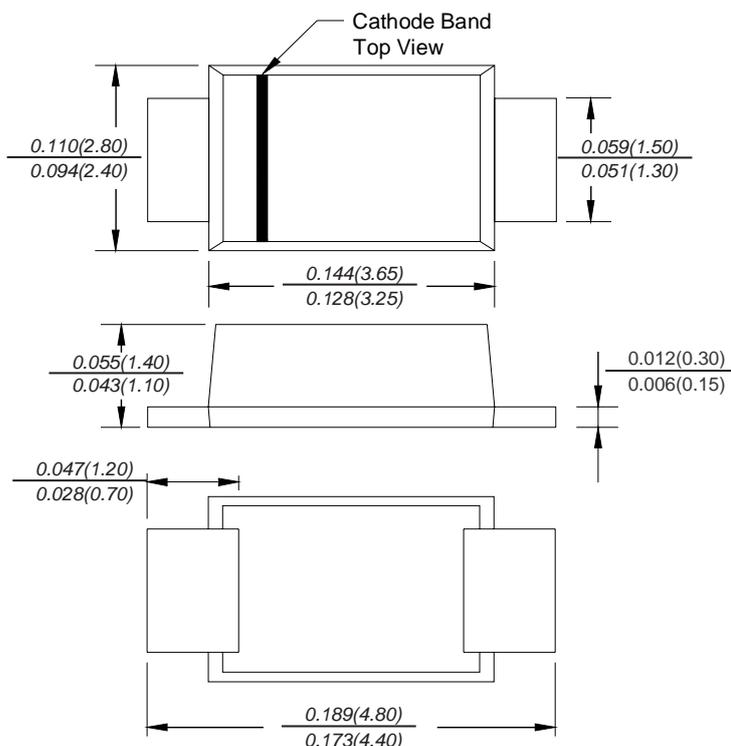
SPECIFICATIONS mm(inch)		PACKAGE	SPECIFICATIONS mm(inch)		PACKAGE
ITEM	SYM BOL	SMAF	ITEM	SYM BOL	SMAF
Carrier width	A	2.93(0.115)Max	Carrier depth	K	1.42(0.056)Typ
Carrier length	B	4.85(0.191)Max	Punch hole pitch	P	4.00(0.157)Typ
Sprocket hole	d	ø1.55(0.061)Typ	Sprocket hole pitch	P0	4.00(0.157)Typ
Reel outer diameter	D	178.0(7)Typ	Embossment center	P1	2.00(0.079)Typ
Reel inner diameter	D1	50.0(1.969)Min	Overall tape thickness	T	0.25(0.010)Typ
Feed hole diameter	D2	13.0(0.512)Typ	Tape width	W	12.0(0.472)Typ
Sprocket hole position	J	1.75(0.069)Typ	Reel width	W1	12.4(0.488)Min
Punch hole position	H	5.55(0.219)Typ			

3、Ordering Information

Part Number	Compliance	Case	Packaging
SSXX	Standard	SMAF	3000/Tape & Reel

Dimension

SMAF



Dimensions in inches and (millimeters)

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