

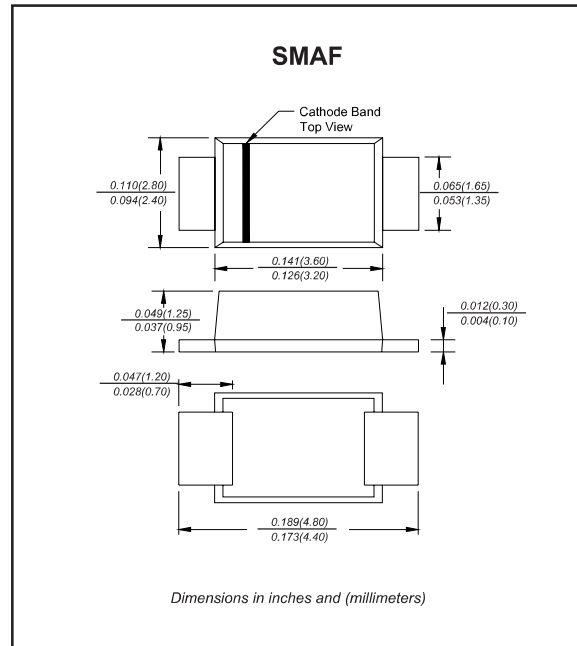
Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ◆ Compliant to RoHS Directive 2011/65/EU
- ◆ Compliant to Halogen-free
- ◆ Suffix "-Q1" for AEC-Q101

Mechanical data

- ◆ **Case:** JEDEC SMAF molded plastic body
- ◆ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ **Polarity:** Color band denotes cathode end
- ◆ **Mounting Position:** Any

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_O			1.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC method)	I_{FSM}			30	A
Reverse current	$T_A = 25^\circ\text{C}$	I_R	$V_R = 20\text{V} - 60\text{V}$		0.5	mA
			$V_R = 80\text{V} - 200\text{V}$		0.1	
Reverse current	$T_A = 100^\circ\text{C}$	I_R	$V_R = 20\text{V} - 60\text{V}$		10	mA
			$V_R = 80\text{V} - 200\text{V}$		5	
Thermal resistance	Junction to ambient NOTE 1	$R_{\theta JA}$		75		$^\circ\text{C/W}$
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		28		pF
Storage temperature		T_{STG}	-65		+150	$^\circ\text{C}$

Note: 1.P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature T_J , ($^\circ\text{C}$)
SS12-F-Q1	20	14	20	0.55	
SS13-F-Q1	30	21	30		
SS14-F-Q1	40	28	40		
SS15-F-Q1	50	35	50	0.70	-55 to +150
SS16-F-Q1	60	42	60		
SS18-F-Q1	80	56	80	0.85	
SS110-F-Q1	100	70	100		
SS115-F-Q1	150	105	150	0.92	
SS120-F-Q1	200	140	200		

*1 Repetitive peak reverse voltage

*2 RMS voltage

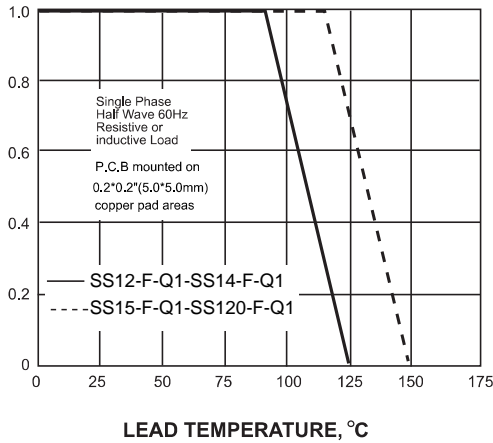
*3 Continuous reverse voltage

*4 Maximum forward voltage@ $I_F=1.0\text{A}$

Rating and characteristic curves

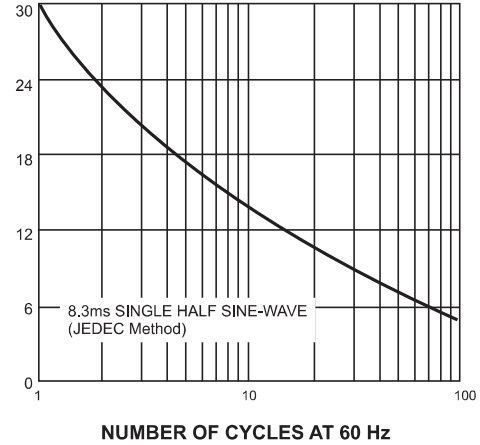
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



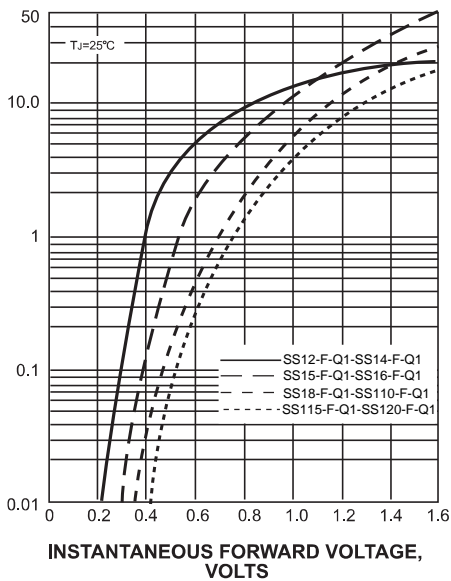
PEAK FORWARD SURGE CURRENT, AMPERES

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



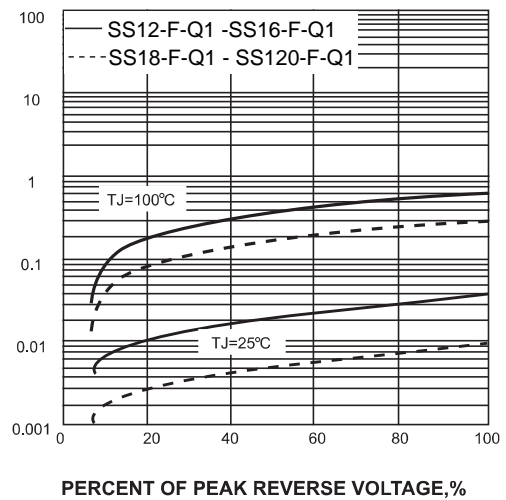
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



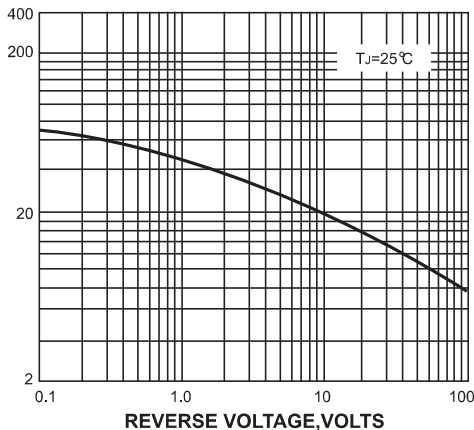
INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



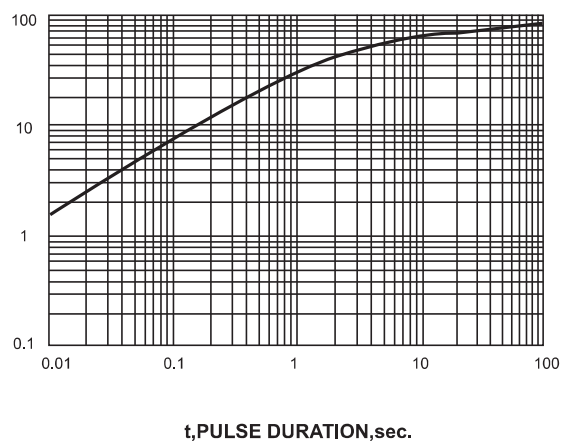
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE

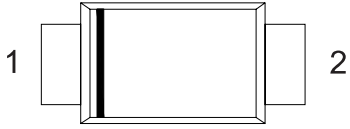



TRANSIENT THERMAL IMPEDANCE, °C/W

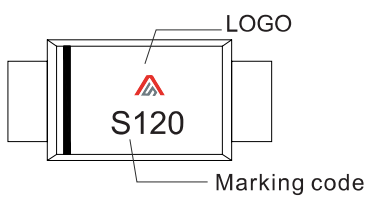
FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



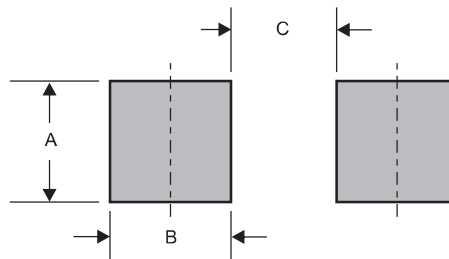
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code	Example
SS12-F-Q1	S12	
SS13-F-Q1	S13	
SS14-F-Q1	S14	
SS15-F-Q1	S15	
SS16-F-Q1	S16	
SS18-F-Q1	S18	
SS110-F-Q1	S110	
SS115-F-Q1	S115	
SS120-F-Q1	S120	

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMAF	0.110 (2.80)	0.063 (1.60)	0.087 (2.20)