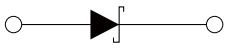
FEATURES

- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Meet AEC-Q101 Requirements

SMAF



Schematic Symbol

MECHANICAL DATA

- Case: SMAF
- Mounting Position: Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Parameter		Symbol	SS 12AFQ	SS 14AFQ	SS 16AFQ	SS 18AFQ	SS 110AFQ	SS 112AFQ	SS 115AFQ	SS 120AFQ	Unit
Marking			SS12	SS14	SS16	SS18	SS110	SS112	SS115	SS120	
Repetitive Peak Reverse Voltage		V_{RRM}	20	40	60	80	100	120	150	200	V
Reverse Voltage,total RMS Value		V_{RMS}	14	28	42	56	70	84	105	140	V
Maximum DC Blocking Voltage		V_{DC}	20	40	60	80	100	120	150	200	V
Maximum Average Forward Rectified Current		$I_{F(AV)}$	1.0								A
Surge Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed On Rated Load Per Diode		I_{FSM}	25								A
Max Instantaneous Forward Voltage at 1 A		V_F	0.55		0.70		0.85		0.90		V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A =25°C	I_R	0.3				0.2		0.1		mA
	T_A =100°C		10				5		2		mA
Typical Junction Capacitance [1]		C_j	110		80						pF
Typical Thermal Resistance Note [2]		$R_{\theta JA}$	95								°C/W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150								°C

Note1): Measured at 1 MHz and applied reverse voltage of 4 V D.C
Note2): P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas

CHARACTERISTIC CURVES

Fig. 1- Forward Current Derating Curve

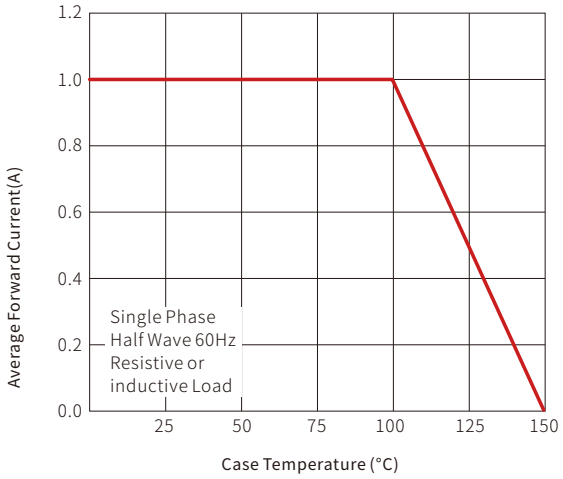


Fig. 2-Typical Reverse Characteristics

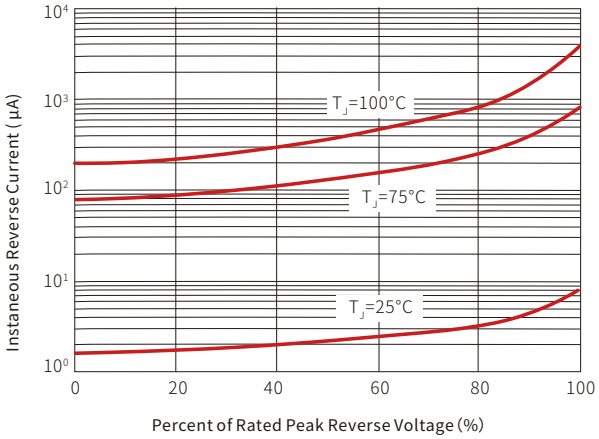


Fig. 3-Typical Forward Characteristic

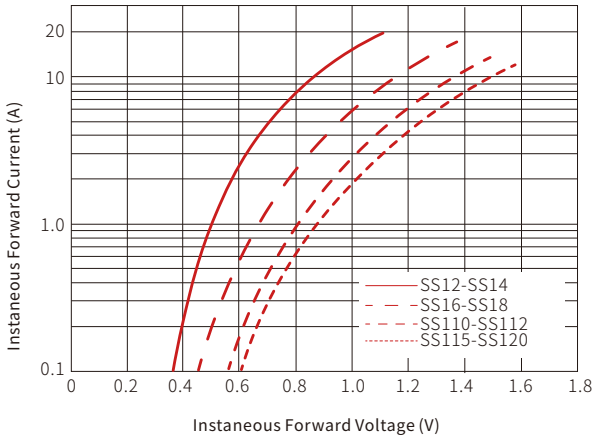


Fig. 4-Typical Junction Capacitance

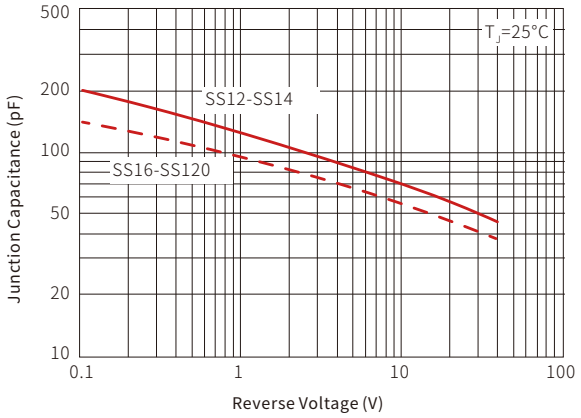


Fig. 5-Maximum Non-Repetitive Peak Forward Surage Current

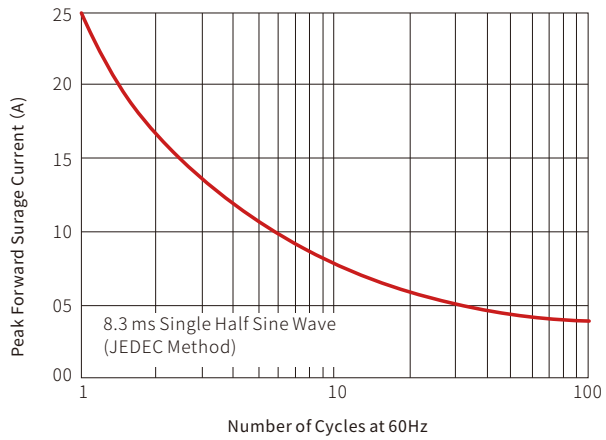
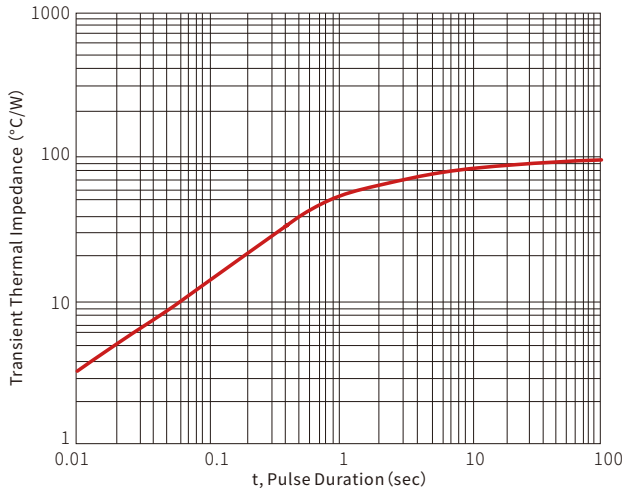
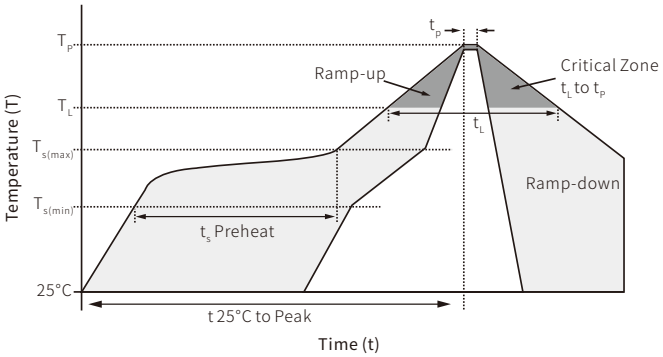


Fig. 6-Typical Transient Thermal Impedance

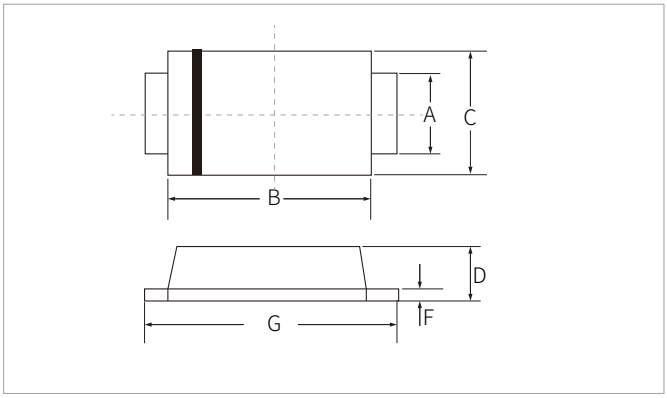


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	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 (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

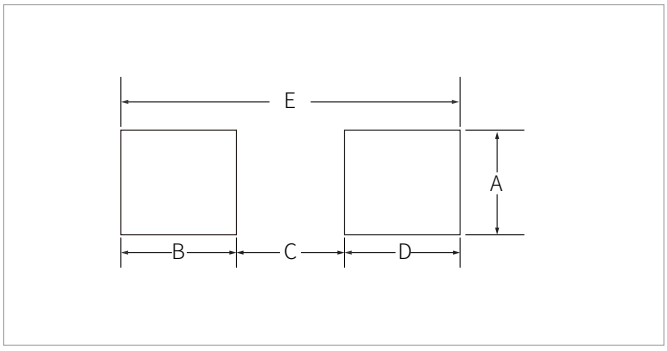


SMAF PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.35	1.60	0.053	0.063
B	3.40	3.80	0.134	0.145
C	2.40	2.80	0.094	0.110
D	0.95	1.45	0.037	0.057
F	0.15	0.22	0.006	0.009
G	4.40	4.80	0.173	0.189

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.70	-	0.067	-
B	2.50	-	0.098	-
C	-	1.5	-	0.059
D	2.50	-	0.098	-
E	6.50REF		0.256REF	

ORDERING INFORMATION

Part Number	Package	QTY/Reel	Reel Size
SS12AFQ-SS120AFQ	SMAF	5000PCS	13"

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