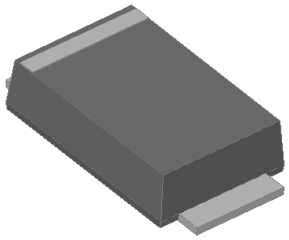
Surface Mount Schottky Rectifier

Features

- Guard ring for overvoltage protection
- Low power losses
- Extremely fast switching
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics



Typical Applications

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, automotive and polarity protection applications.

Mechanical Data

- **Package**: SMAF
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

Maximum Ratings (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	SS56AF
Device marking code			SS56AF
Repetitive peak reverse voltage	V_{RRM}	V	60
Maximum RMS voltage	V_{RMS}	V	42
Maximum DC blocking voltage	V_{DC}	V	60
Maximum average forward rectified current at T_L (Fig.1)	I_O	A	5.0
Surge(non-repetitive)forward current @60Hz half-sine wave,1 cycle, T_J=25℃	I_{FSM}	A	120
Voltage rate of change (rated V_R)	dV/dt	V/μs	10000
Storage temperature	T_{stg}	℃	-55~+150
Junction temperature	T_J	℃	-55~+150

Electrical Characteristics (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		TYP	MAX	UNIT
Instantaneous forward voltage	V_F	I_F=5A	T_J=25℃	0.54	0.62	V
			T_J=125℃	0.48	0.56	
Reverse current	I_R	Rated V_R	T_J=25℃	5	20	μA
			T_J=125℃	-	500	μA
Typical junction capacitance	C_J	V_R=4V,f=1MHz		245	500	pF

Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	SS56AF
Thermal Resistance	$R_{\theta J-A}$	℃/W	65[1)]
	$R_{\theta J-L}$		10[1)]

Note:
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 5 mm x 5 mm copper pad areas

Characteristics(Typical)

Fig.1 Forward Current Derating Curve

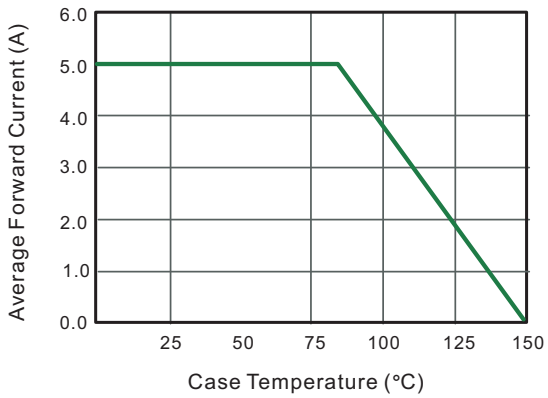


Fig.2 Typical Reverse Characteristics

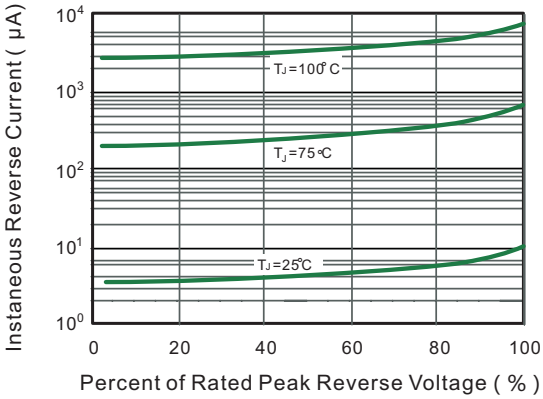


Fig.3 Typical Forward Characteristic

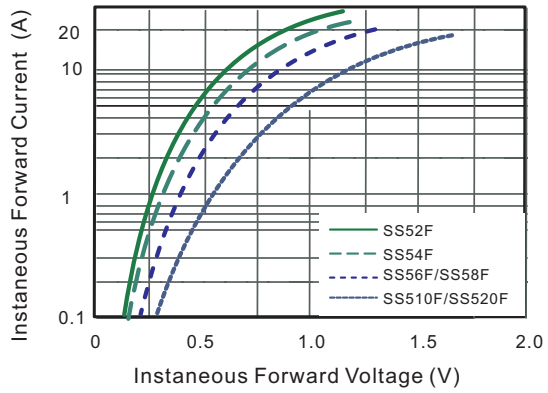


Fig.4 Typical Junction Capacitance

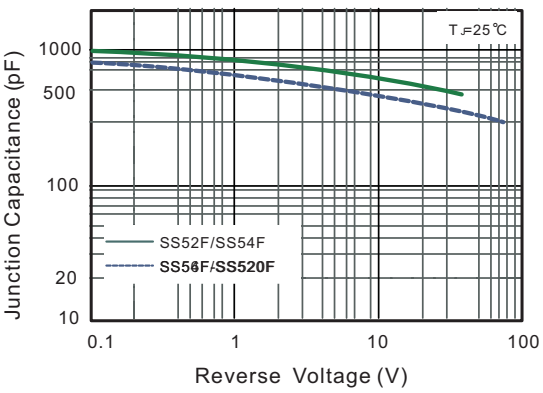


Fig.5 Maximum Non-Repetitive Peak Forward Surage Current

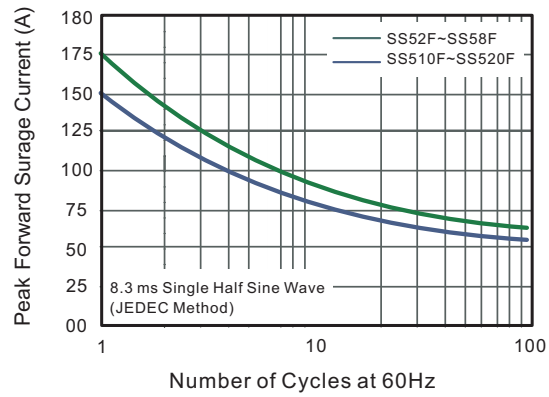
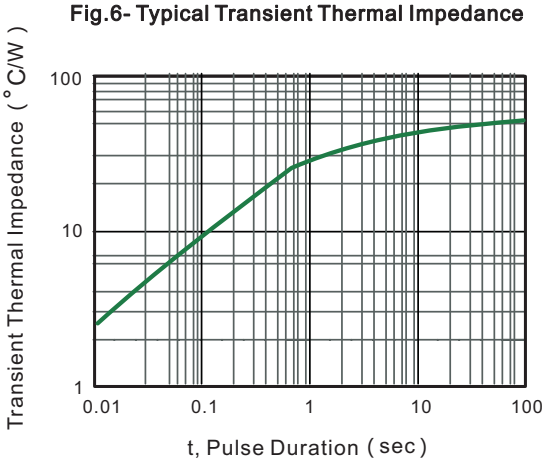
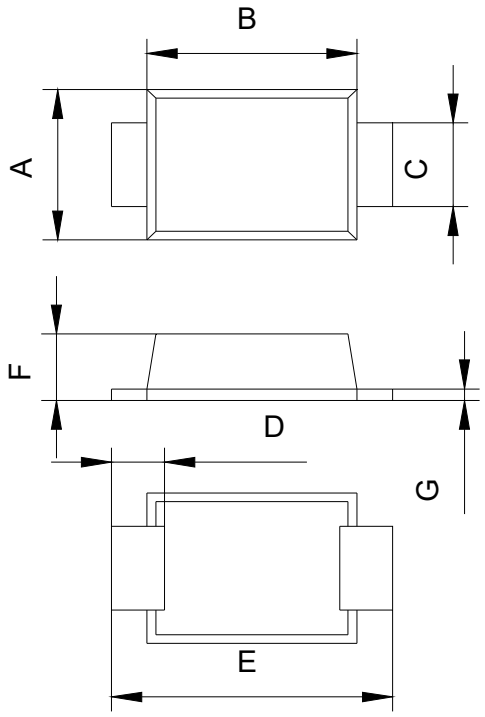


Fig.6- Typical Transient Thermal Impedance



Dfimensfions SMAF

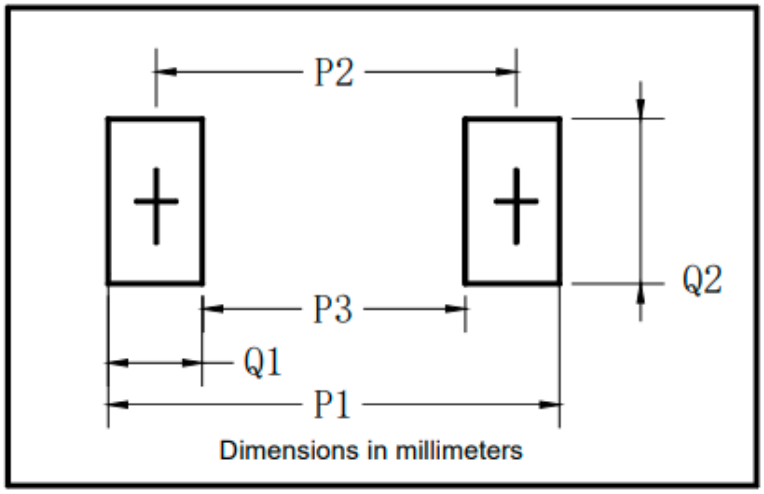


SMAF

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.80	0.094	0.110
B	3.25	3.70	0.128	0.146
C	1.30	1.60	0.051	0.063
D	0.55	1.20	0.022	0.047
E	4.40	4.90	0.173	0.193
F	0.90	1.40	0.035	0.055
G	0.10	0.30	0.004	0.012

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

Suggested pad layout



SMAF	
Dim	Millimeters
P1	6.50
P2	4.00
P3	1.50
Q1	2.50
Q2	1.70