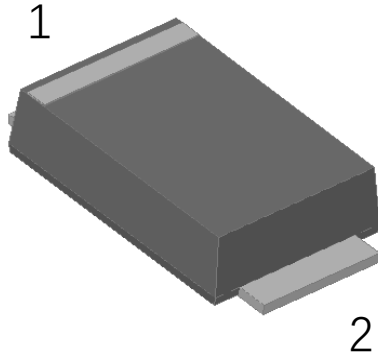


Surface Mount Schottky Rectifier

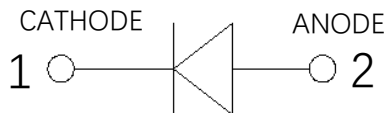


Features

- 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
- Part no. with suffix "Q" means AEC-Q101 qualified

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°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	S52FQ	S54FQ
Device marking code			S52F	S54F
Repetitive peak reverse voltage	V_{RRM}	V	20	40
Maximum RMS voltage	V_{RMS}	V	14	28
Maximum DC blocking voltage	V_{DC}	V	20	40
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, $T_J=25^\circ\text{C}$	I_{FSM}	A	120	
Voltage rate of change (rated V_R)	dV/dt	V/ μs	10000	
Storage temperature	T_{stg}	°C	-55 ~+150	
Junction temperature	T_J	°C	-55 ~+150	

■Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		TYP	MAX	UNIT
Instantaneous forward voltage	V_F	$I_F=5A$	$T_J=25^\circ\text{C}$	0.51	0.6	V
			$T_J=125^\circ\text{C}$	0.45	0.54	
Reverse current	I_R	Rated V_R	$T_J=25^\circ\text{C}$	10	100	μA
			$T_J=125^\circ\text{C}$	-	20	mA
Typical junction capacitance	C_J	$V_R=4V, f=1\text{MHz}$		265	-	pF



S52FQ THRU S54FQ

■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	S52FQ	S54FQ
Thermal Resistance	$R_{\theta J-A}$	°C/W	65 ⁽¹⁾	
	$R_{\theta J-L}$		20 ⁽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

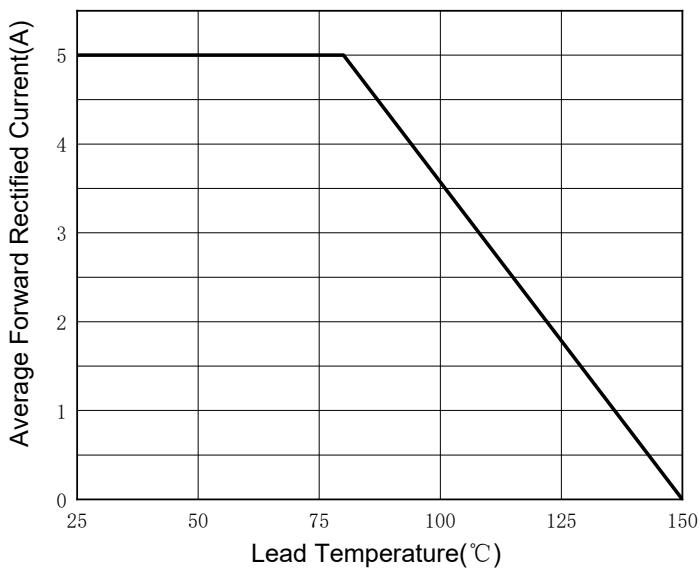


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

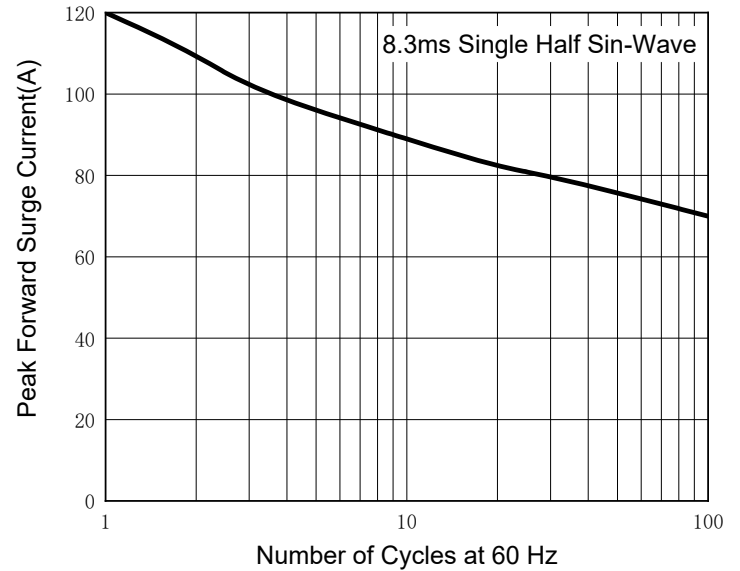


Fig.3:Typical Instantaneous Forward Characteristics

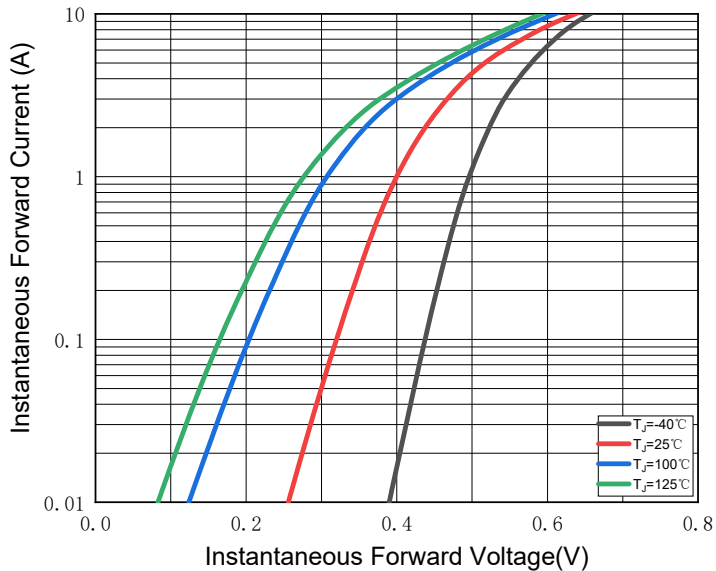
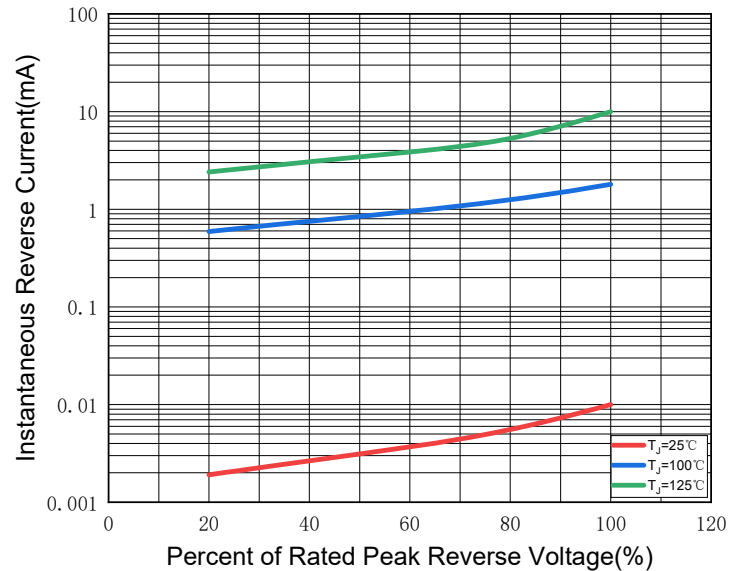


Fig.4:Typical Reverse Leakage Characteristics



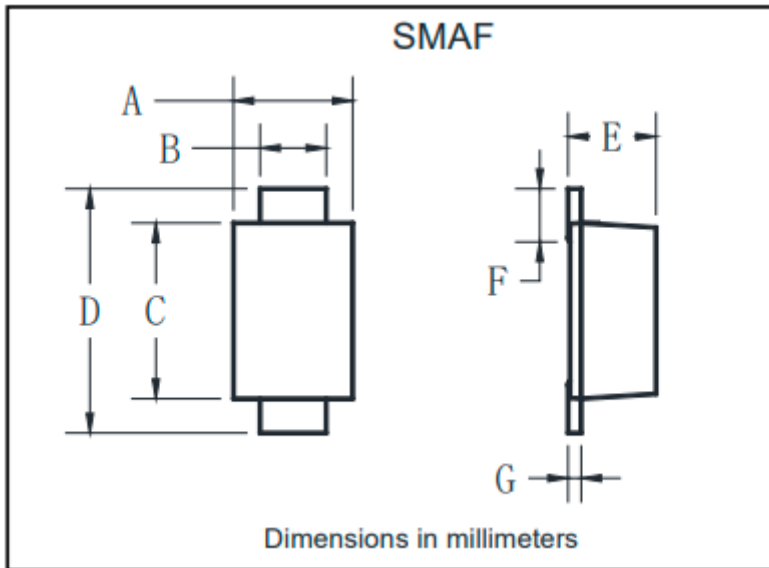
■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
S52FQ-S54FQ	F1	Approximate 0.034	3000	96000	7" reel



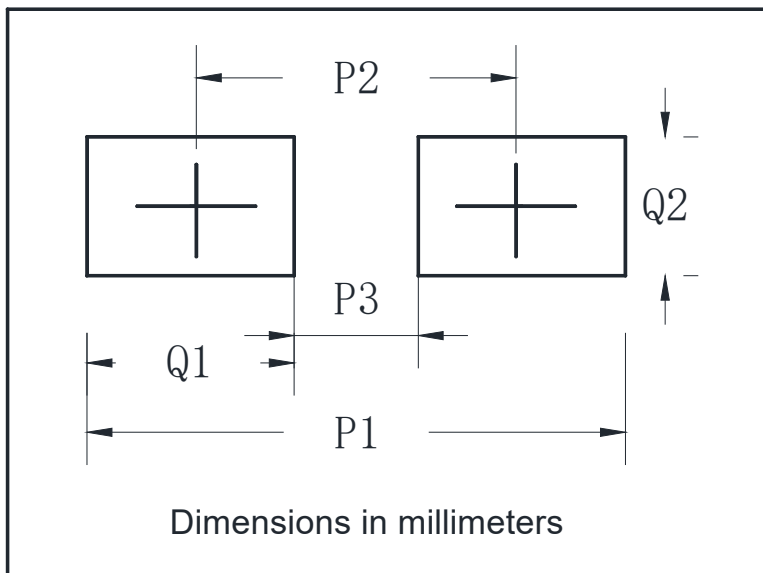
S52FQ THRU S54FQ

■ Outline Dimensions



SMAF		
Dim	Min	Max
A	2.40	2.80
B	1.35	1.45
C	3.40	3.60
D	4.40	4.80
E	1.05	1.25
F	0.50	1.00
G	0.16	0.25

■ Suggested pad layout



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



S52FQ THRU S54FQ

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