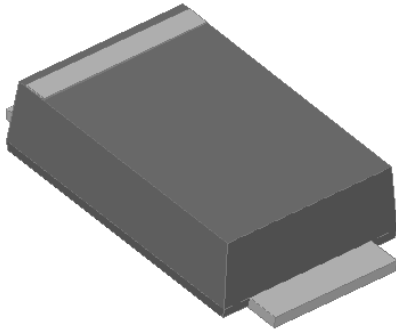


## Surface Mount Schottky Rectifier

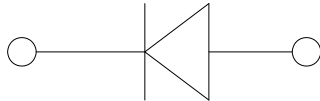


### Features

- 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 (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	S58FQ	S510FQ
Device marking code			S58F	S510F
Repetitive peak reverse voltage	V <sub>RRM</sub>	V	80	100
Maximum RMS voltage	V <sub>RMS</sub>	V	56	70
Maximum DC blocking voltage	V <sub>DC</sub>	V	80	100
Maximum average forward rectified current at T <sub>L</sub> (Fig.1)	I <sub>O</sub>	A	5.0	
Surge(non-repetitive)forward current @60Hz half-sine wave,1 cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	A	120	
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	V/μs	10000	
Storage temperature	T <sub>stg</sub>	°C	-55 ~+175	
Junction temperature	T <sub>J</sub>	°C	-55 ~+175	

### ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	TYP	MAX	UNIT	
Instantaneous forward voltage	V <sub>F</sub>	I <sub>F</sub> =5A	T <sub>J</sub> =25°C	0.77	0.8	V
			T <sub>J</sub> =125°C	0.63	0.75	
Reverse current	I <sub>R</sub>	Rated V <sub>R</sub>	T <sub>J</sub> =25°C	0.2	10	μA
			T <sub>J</sub> =125°C	-	200	
Typical junction capacitance	C <sub>J</sub>	V <sub>R</sub> =4V,f=1MHz	150	-	pF	



# S58FQ THRU S510FQ

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

PARAMETER	SYMBOL	UNIT	S58FQ	S510FQ
Thermal Resistance	$R_{\theta J-A}$	°C/W	65 <sup>(1)</sup>	
	$R_{\theta J-L}$		20 <sup>(1)</sup>	

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

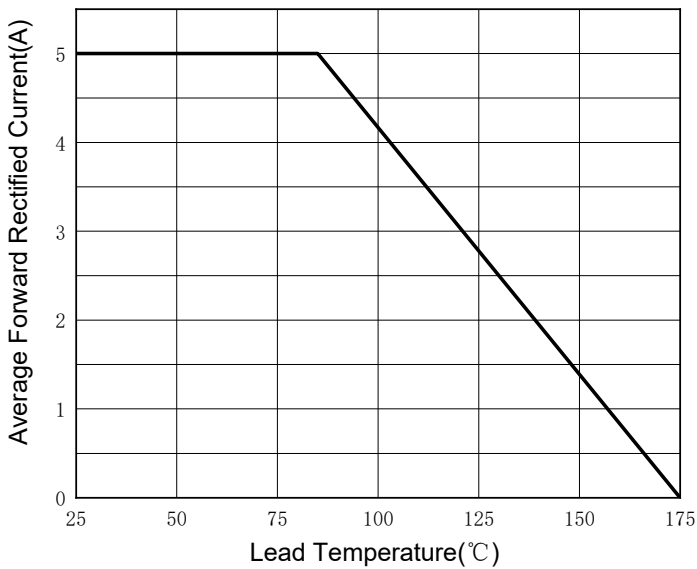


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

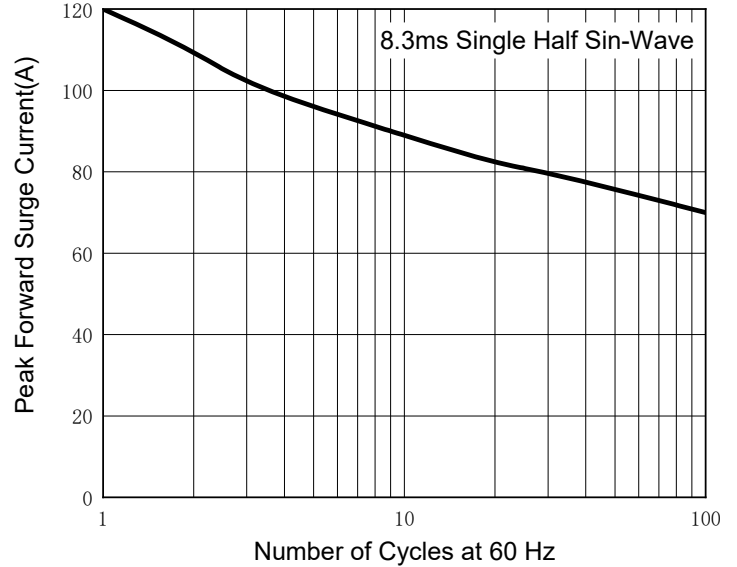


Fig.3:Typical Instantaneous Forward Characteristics

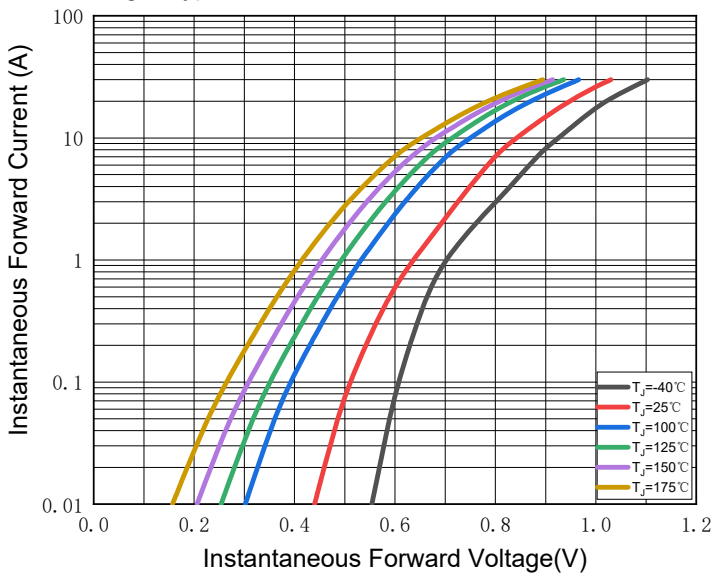
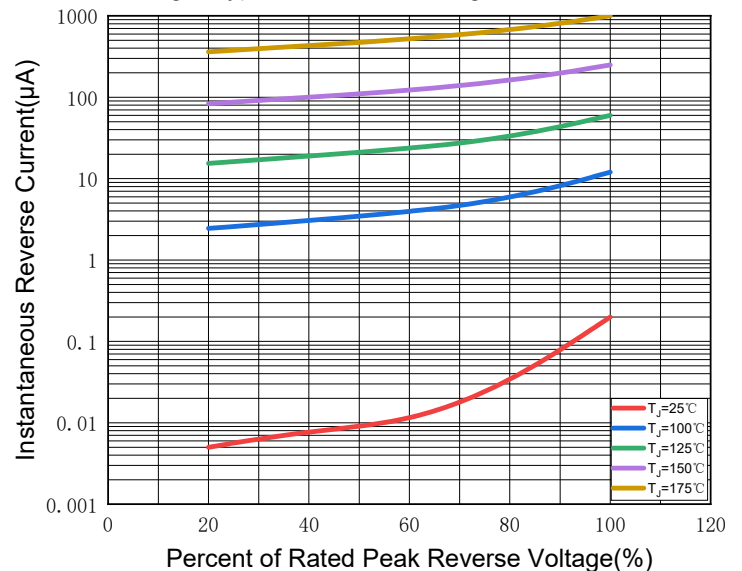


Fig.4:Typical Reverse Leakage Characteristics



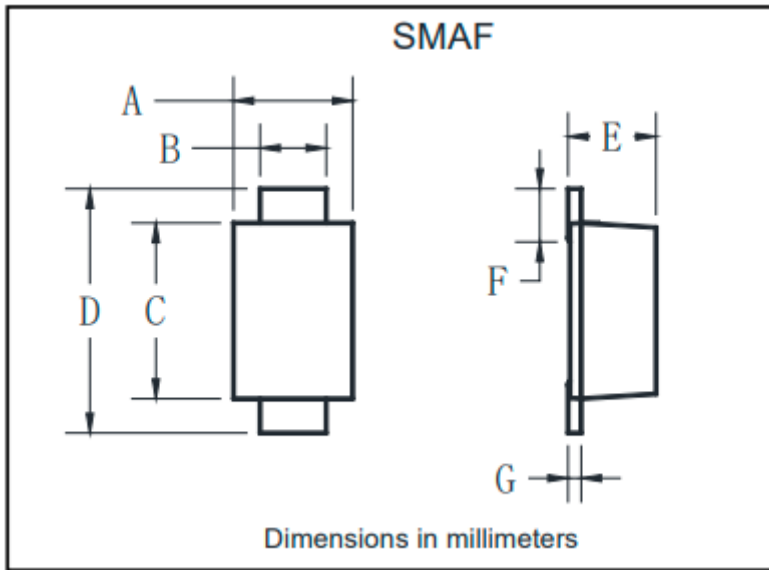
## ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
S58FQ-S510FQ	F1	Approximate 0.034	3000	96000	7" reel



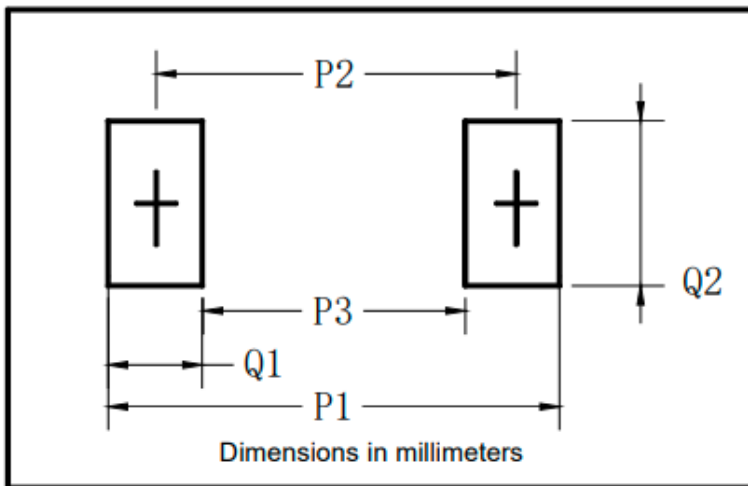
## S58FQ THRU S510FQ

### ■ 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	0.15	0.22

### ■ Suggested pad layout



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



## S58FQ THRU S510FQ

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