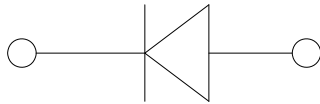


## Surface Mount Schottky Rectifier



### Features

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- High forward surge capability
- 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 Date

- **Package:** SOD-123FL  
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 ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	S12Q	S13Q	S14Q	S15Q	S16Q	S18Q	S110Q
Device marking code			S12	S13	S14	S15	S16	S18	S110
Repetitive peak reverse voltage	$V_{RRM}$	V	20	30	40	50	60	80	100
Average rectified output current @60Hz sine wave, Resistance load, $T_L$ (FIG.1)	$I_O$	A	1.0						
Surge(non-repetitive)forward current @60Hz half-sine wave, 1 cycle, $T_J=25^\circ\text{C}$	$I_{FSM}$	A	30						
Storage temperature	$T_{stg}$	$^\circ\text{C}$	-55 ~+150						
Junction temperature	$T_J$	$^\circ\text{C}$	-55 ~+125			-55 ~+150			

### ■Electrical Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	S12Q	S13Q	S14Q	S15Q	S16Q	S18Q	S110Q
Maximum instantaneous forward voltage drop per diode	$V_F$	V	$I_{FM}=1.0\text{A}$	0.50			0.70		0.85	
Maximum DC reverse current at rated DC blocking voltage per diode @ $V_{RM}=V_{RRM}$	$I_{RRM}$	mA	$T_a=25^\circ\text{C}$	0.50					0.10	
			$T_a=100^\circ\text{C}$	10					5	



# S12Q THRU S110Q

## ■ Thermal Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	S12Q	S13Q	S14Q	S15Q	S16Q	S18Q	S110Q
Thermal Resistance	$R_{\theta J-A}$	$^\circ\text{C/W}$	70 <sup>1)</sup>						
	$R_{\theta J-L}$		20 <sup>1)</sup>						

Note:  
 (1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm\*3mm copper pad areas.

## ■ Characteristics (Typical)

FIG1:  $I_o-T_L$  Curve

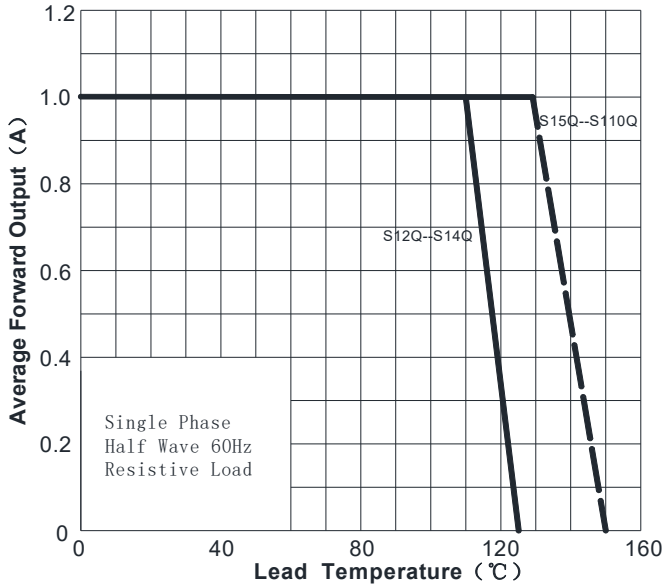


FIG2: Surge Forward Current Capability

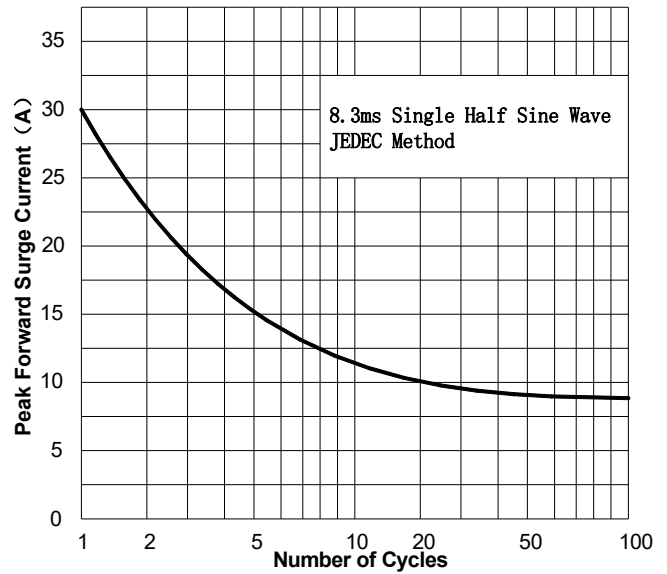


FIG3: Forward Voltage

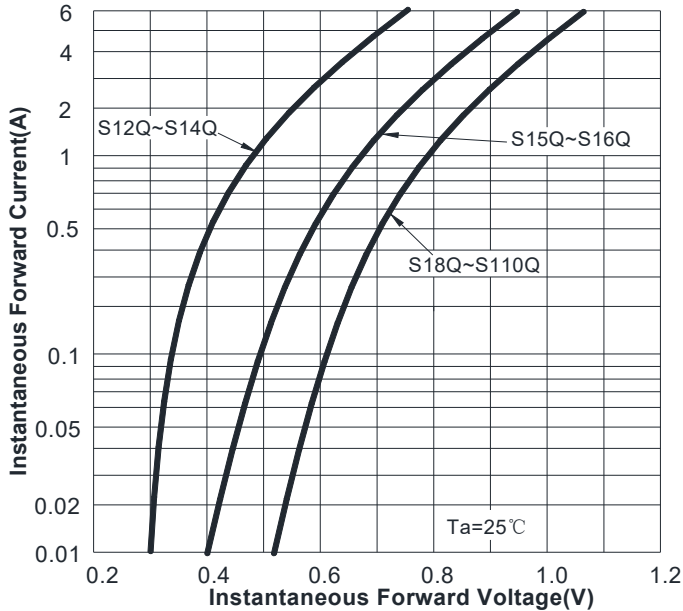
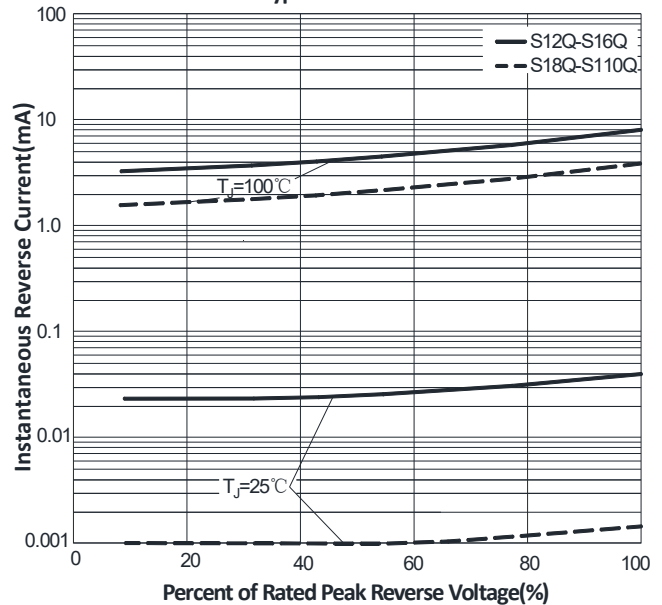


FIG4: Typical Reverse Characteristics



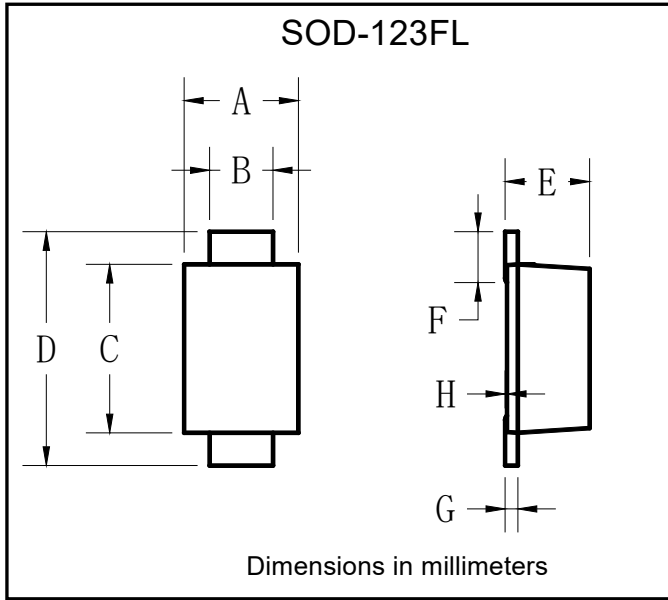


# S12Q THRU S110Q

## Ordering Information (Example)

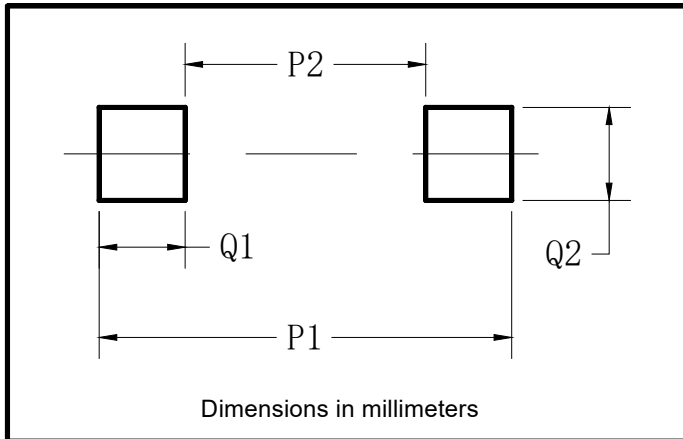
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
S12Q THRU S110Q	F1	Approximate 0.0169	3000	15000	120000	7" reel

## Outline Dimensions



SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	0.02	0.05

## Suggested pad layout



SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50



## S12Q THRU S110Q

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