SD12 THRU SD120

Surface Mount Schottky Barrier Rectifier
Reverse Voltage 20 to 200V Forward Current 1.0 A

Surface Mount Schottky Barrier Rectifier
Reverse Voltage -20 to 200V
Forward Current - 1.0 A

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

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

Top View
Marking Code: SD12 ---K12/S12
SD14 ---K14/S14
SD16 ---K16/S16
SD18 ---K18/S18
SD110 ---K110/S110
SD112 ---K112/S112
SD115 ---K115/S115
SD120 ---K120/S120

Weight : 17mg , 0.0006 oz
Simplified outline SOD-123FL and symbol

Absolute Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

Parameter	Symbols	SD12	SD14	SD16	SD18	SD110	SD112	SD115	SD120	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	20	40	60	80	100	120	150	200	V
Maximum RMS voltage	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
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	40				30				A
Max Instantaneous Forward Voltage at 1 A	V_F	0.55		0.70		0.85		0.90		V
Maximum DC Reverse Current T_a = 25°C at Rated DC Reverse Voltage T_a =100°C	I_R	0.3 10				0.2 5		0.1 2		mA
Typical Junction Capacitance 1)	C_j	110		80						pF
Typical Thermal Resistance 2)	$R_{\theta JA}$	115								°C/W
Operating Junction Temperature Range	T_j	-55 ~ +125								°C
Storage Temperature Range	T_{stg}	-55 ~ +150								°C

1) Measured at 1MHz and applied reverse voltage of 4 V D.C.
2) P.C.B. mounted with 0.2 X 0.2" (5 X 5 mm) copper pad areas.

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Fig.1 Forward Current Derating Curve

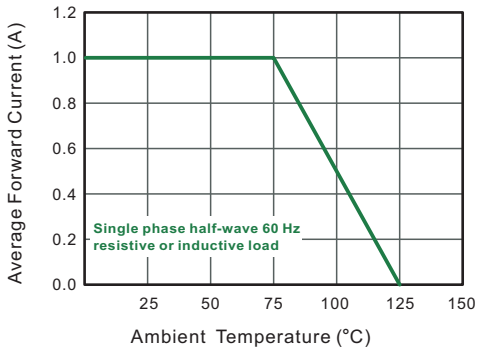


Fig.2 Typical Reverse Characteristics

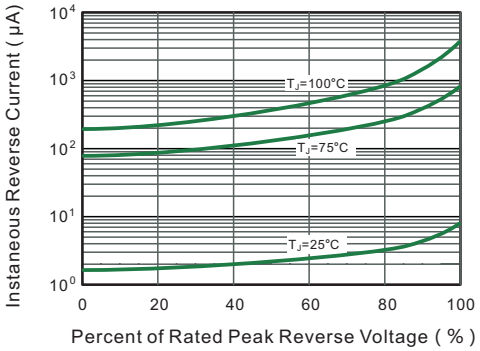


Fig.3 Typical Forward Characteristic

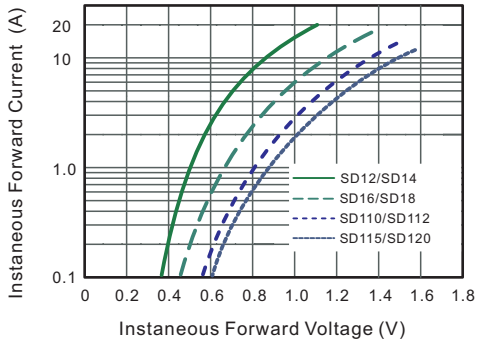


Fig.4 Typical Junction Capacitance

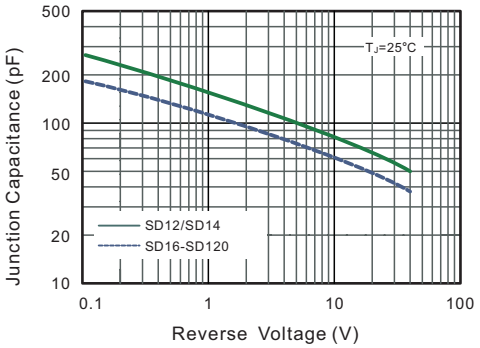


Fig.5 Maximum Non-Repetitive Peak Forward Surage Current

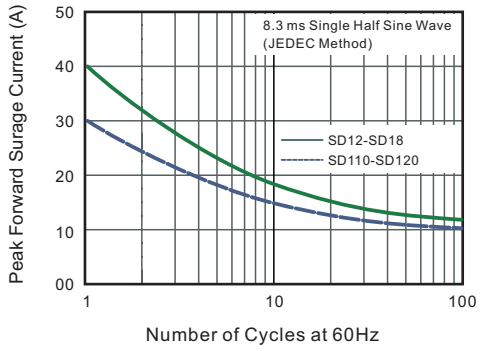
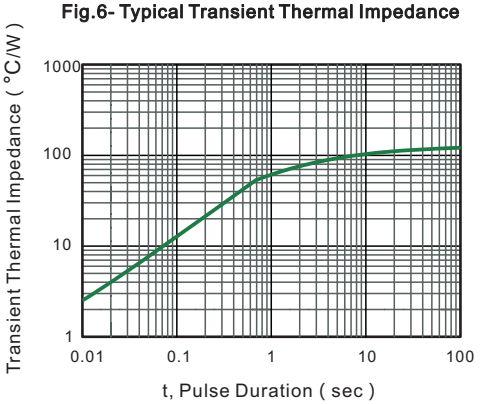
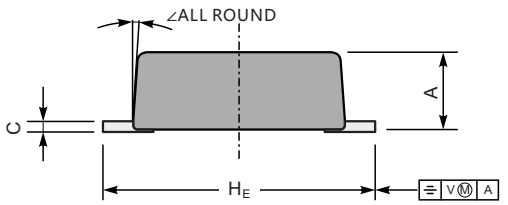


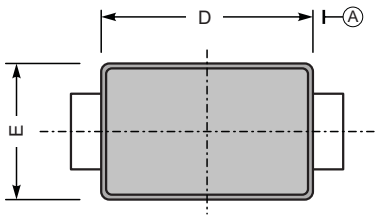
Fig.6- Typical Transient Thermal Impedance



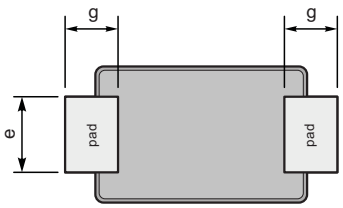
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads SOD123FL





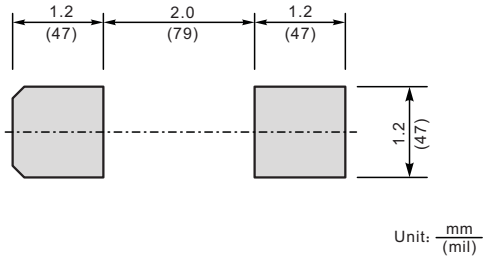
Top View



Bottom View

UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.1	0.20	2.9	1.9	1.1	0.9	3.8	7°
	min	0.9	0.12	2.6	1.7	0.8	0.7	3.5	
mil	max	43	7.9	114	75	43	35	150	
	min	35	4.7	102	67	31	28	138	

The recommended mounting pad size



Marking

Type number	Marking code
SD12	K12/S12
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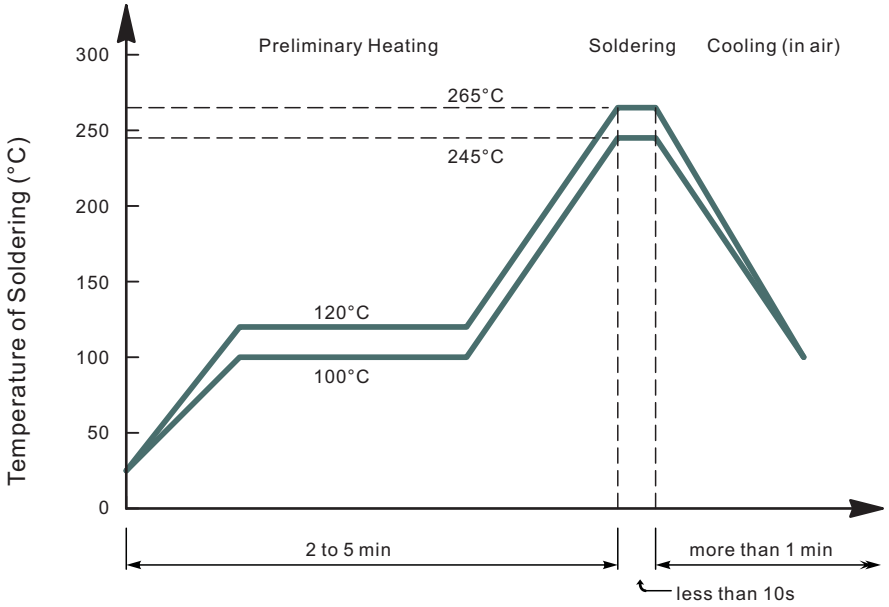
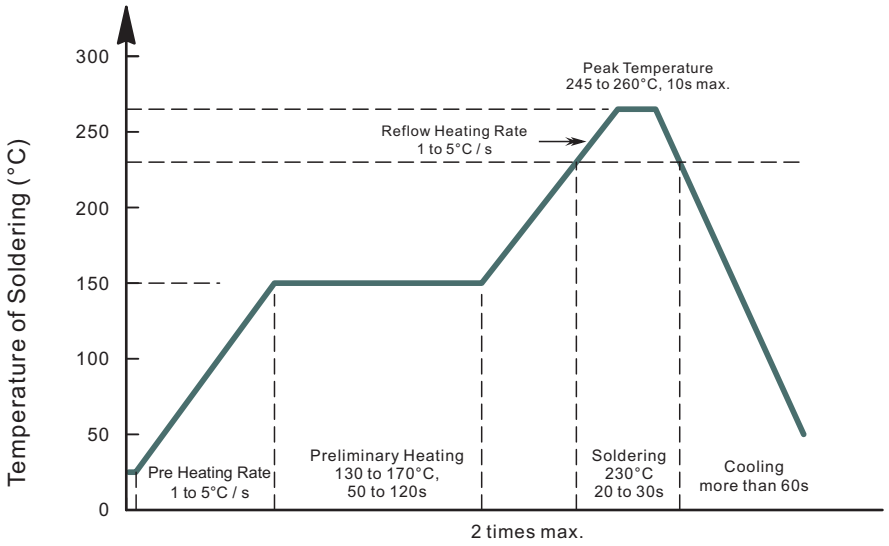
SD115	K115/S115
SD120	K120/S120

• **Recommended condition of flow soldering**



• **Recommended condition of reflow soldering**



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)

• **Condition of hand soldering**
Temperature: 350°C
Time: 3s max.
Times: one time

• **Remark:**
Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)