

**SCHOTTKY BARRIER RECTIFIER**

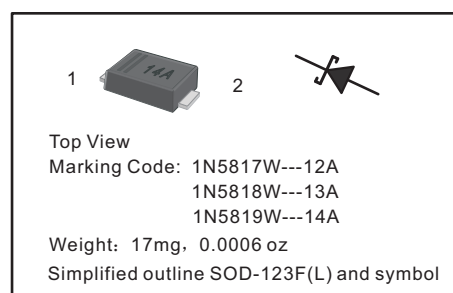
VOLTAGE RANGE 20 to 40 Volts CURRENT 1.0 Ampere

**Features**

- Metal silicon junction, majority carrier conduction
- Guarding for overvoltage protection
- Low power loss, high efficiency
- High current capability
- low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

**PINNING**

PIN	DESCRIPTION
1	Cathode
2	Anode



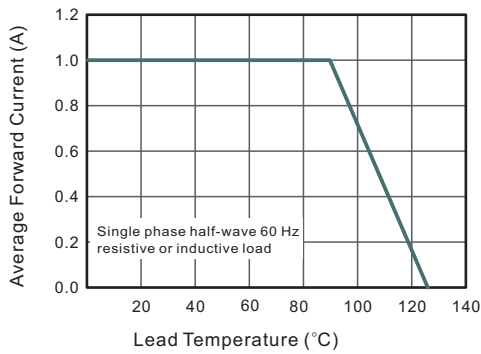
**Maximum Ratings and Electrical characteristics**

Ratings at 25 °C ambient temperature unless otherwise specified.

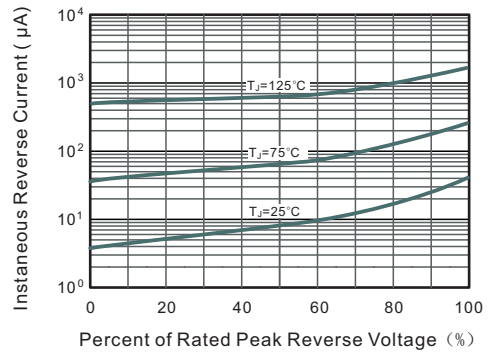
Parameter	Symbols	1N5817W	1N5818W	1N5819W	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	20	30	40	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	V
Maximum DC Blocking Voltage	$V_{DC}$	20	30	40	V
Maximum Average Forward Rectified Current 0.375" (9.5 mm) Lead Length at $T_L = 90^\circ\text{C}$	$I_{F(AV)}$	1			A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load (JEDEC method) at $T_L = 70^\circ\text{C}$	$I_{FSM}$	25			A
Typical Current Squared Time	$I^2T$	2.59			A <sup>2</sup> S
Maximum Instantaneous Forward Voltage at 1 A Maximum Instantaneous Forward Voltage at 3.1 A	$V_F$	0.45 0.75	0.55 0.875	0.6 0.9	V
Maximum Instantaneous Reverse Current at $T_A = 25^\circ\text{C}$ Rated DC Reverse Voltage $T_A = 100^\circ\text{C}$	$I_R$	1 10			mA
Typical Thermal Resistance	$R_{\theta JA}$ $R_{\theta JL}$	50 15			$^\circ\text{C}/\text{W}$
Typical Junction Capacitance	$C_j$	110			pF
Storage and Operating Junction Temperature Range	$T_j, T_{stg}$	-55 ~ +125			$^\circ\text{C}$

# RATING AND CHARACTERISTICS CURVES ( 1N5817W THRU 1N5819W )

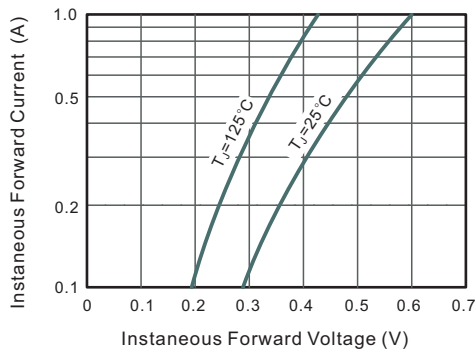
**Fig.1 Forward Current Derating Curve**



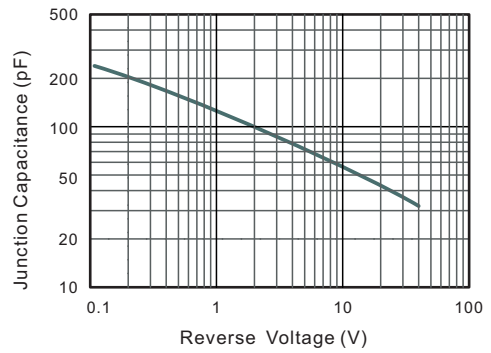
**Fig.2 Typical Reverse Characteristics**



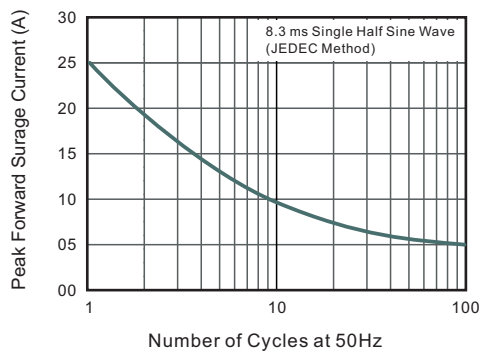
**Fig.3 Typical Forward Characteristic**



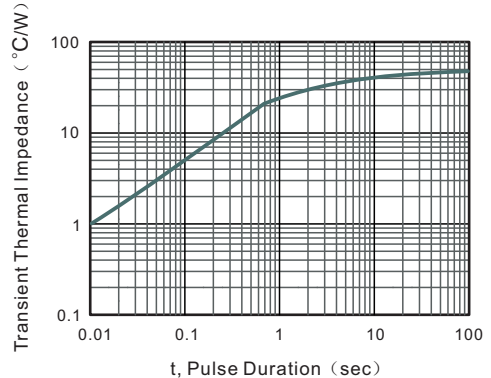
**Fig.4 Typical Junction Capacitance**



**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



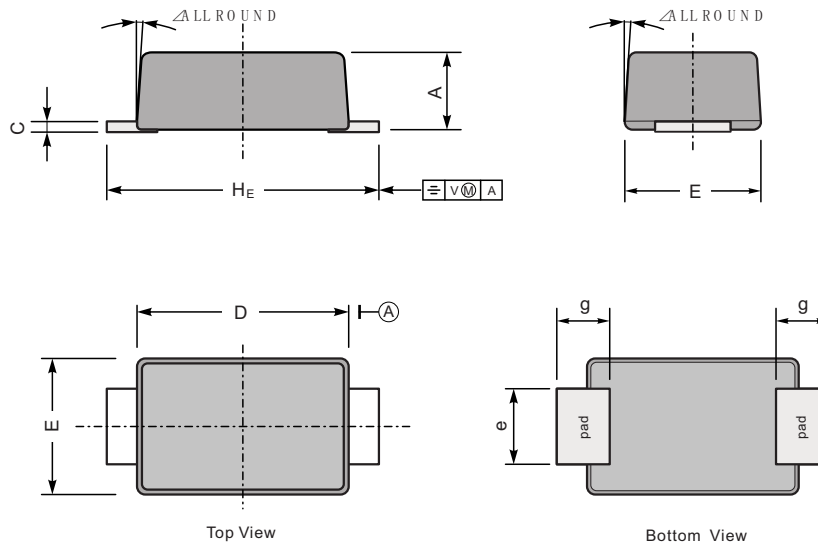
**Fig.6- Typical Transient Thermal Impedance**



# PACKAGE OUTLINE

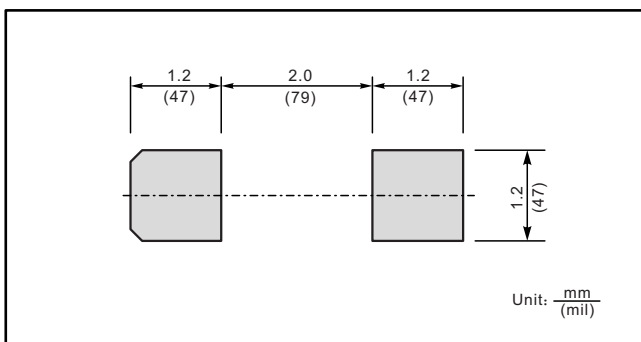
Plastic surface mounted package; 2 leads

SOD123F(L)



UNIT		A	C	D	E	e	g	$H_E$	$\angle$
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	

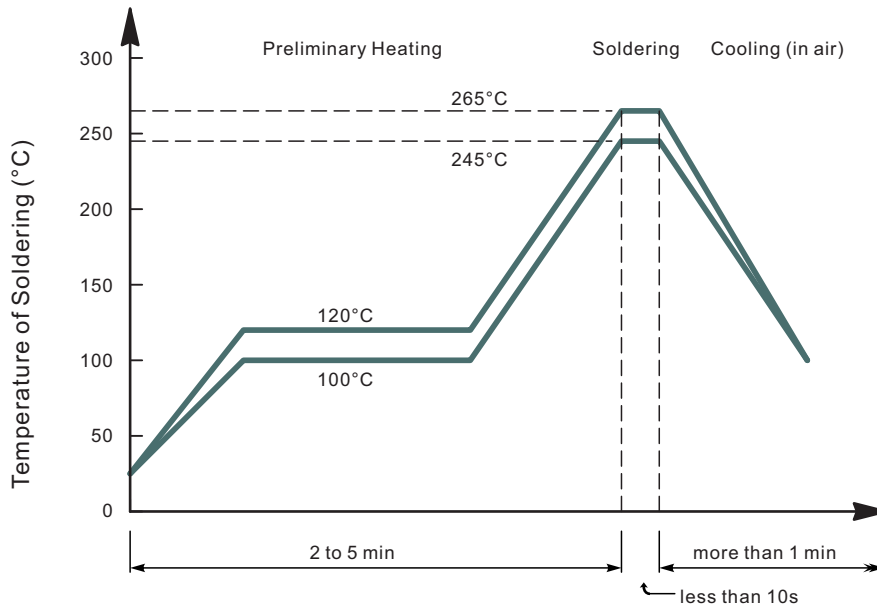
## The recommended mounting pad size



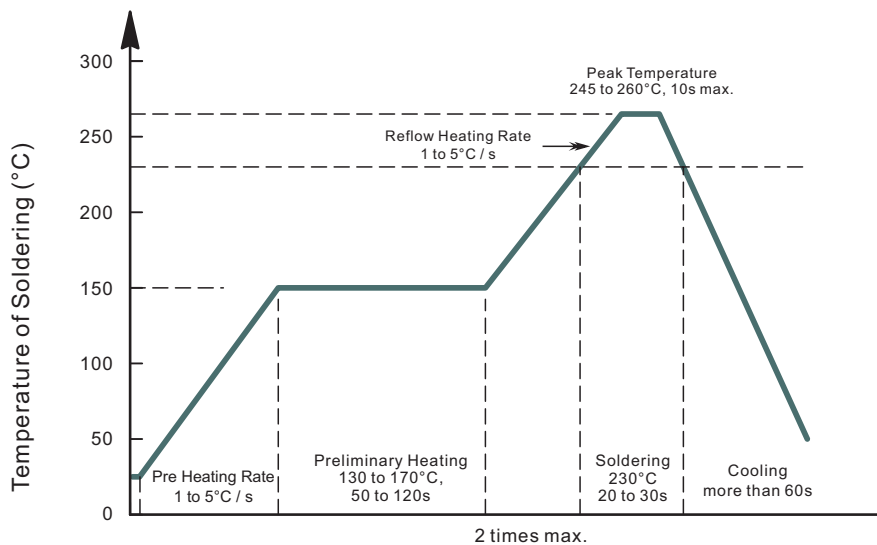
## Marking

Type number	Marking code
1N5817W	12A
1N5818W	13A
1N5819W	14A

• 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)

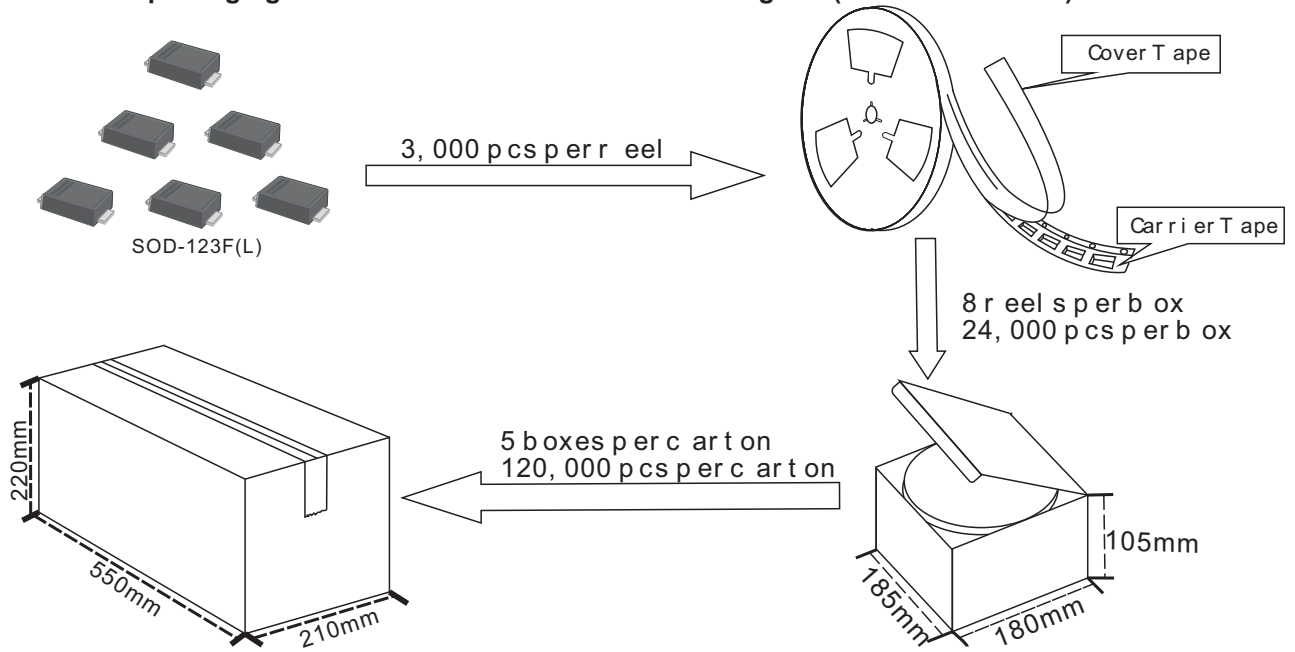
• Condition of hand soldering

Temperature: 320°C  
 Time: 3s max.  
 Times: one time

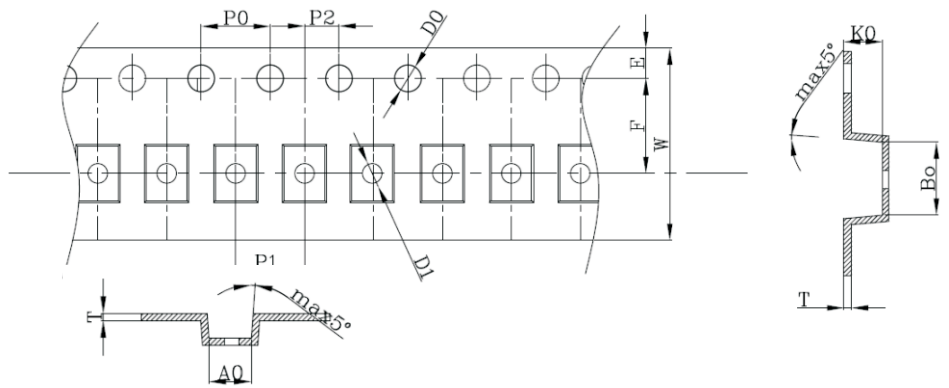
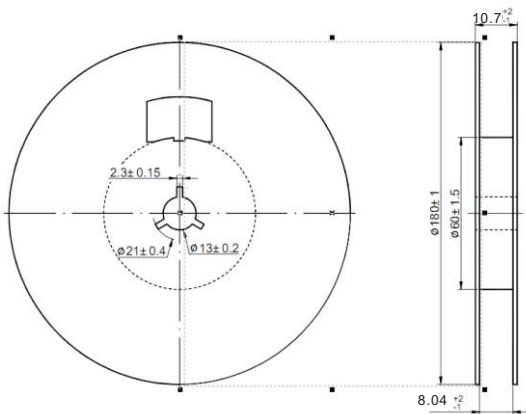
• Remark:

Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)

**1. The method of packaging and dimension are shown as below figure. (Dimension in mm)**



**2. Tape and reel data (Units: mm)**



SYMBOL	A0	B0	K0	P0	P1	P2
SPEC	2.05±0.10	3.9±0.10	1.28±0.10	4.00±0.10	4.00±0.10	2.00±0.05
SYMBOL	T	E	F	D0	D1	W
SPEC	0.25±0.02	1.75±0.10	3.50±0.05	1.55±0.05	1.1±0.1	8.00±0.3

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