SS3020HE THRU SS30200HE

3.0A Schottky Barrier Rectifier

Primary Characteristics

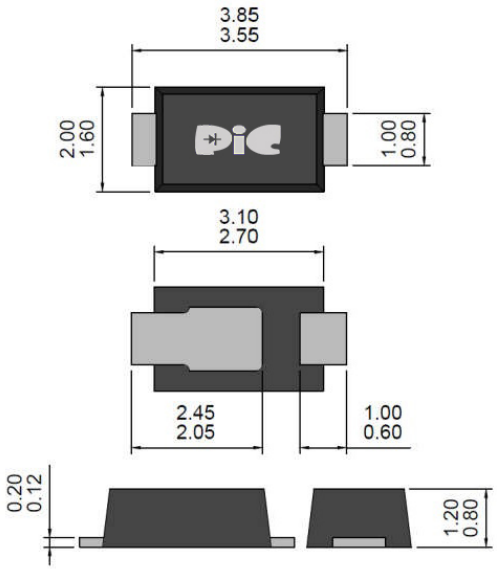
I_F	3.0	A
V_{RRM}	20~200	V
I_{FSM}	80.0	A
V_F	0.52~0.86	V

Features

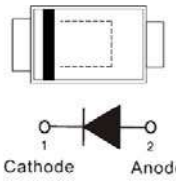
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- For surface mounted applications in order to optimize board space
- Low power loss, high efficiency
- High surge capacity
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC6 611249 Std. . (Halogen Free)

Package Outline Dimensions

SOD-123HE



Unit : millimeters



Mechanical Data

- Case: SOD-123HE, Plastic
- Terminals : Solderable per MIL-STD-7550, Method 2026
- Polarity: Color band denotes cathode end

Maximum Ratings (TA=25°C unless otherwise noted)

	Symbol	SS3020HE	SS3030HE	SS3040HE	SS3060HE	SS30100HE	SS30150HE	SS30200HE	UNITS
Marking Code	-	EA	EB	EC	ED	EF	EH	EJ	-
Max. Recurrent Peak Reverse Voltage	V_{RRM}	20	30	40	60	100	150	200	Volts
Max. RMS Voltage	V_{RMS}	14	21	28	42	70	105	140	Volts
Max. DC Blocking Voltage	V_{DC}	20	30	40	60	100	150	200	Volts
Max. Average Forward Current	$I_{F(AV)}$	3							Amps
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	80							Amps
. Forward Voltage at 3.0A (Note 1)	V_F	0.52			0.65	0.8	0.86		Volts
Max. DC Reverse Current T_J=25℃	I_R	160			100	20	20		μA
Typical Thermal Resistance (Note 2)	$R_{\Theta JL}$ $R_{\Theta JA}$	20 105							°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +125		-55 to +150					°C

Notes:

(1) Pulse test with PW=300μsec,1% Duty Cycle.

(2) Mounted on 50cm^2 FR-4 PCB board.

Rating and Characteristics Curves

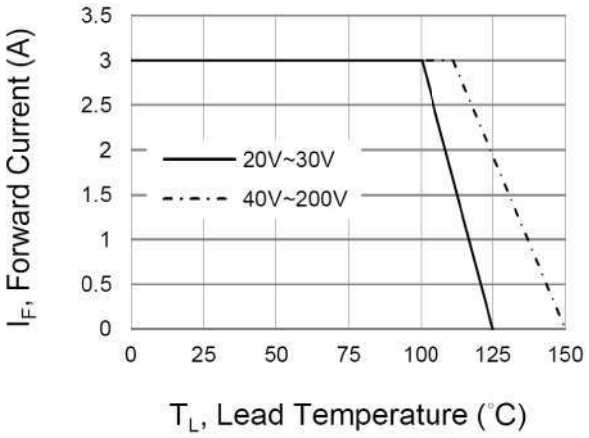


Fig. 1 Forward Current Derating Curve

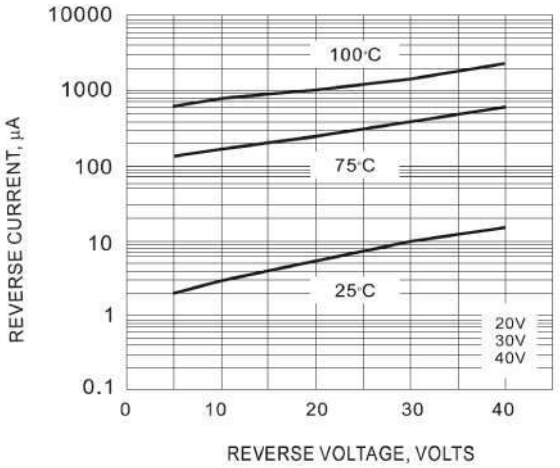


Fig. 2 Typical Junction Capacitance

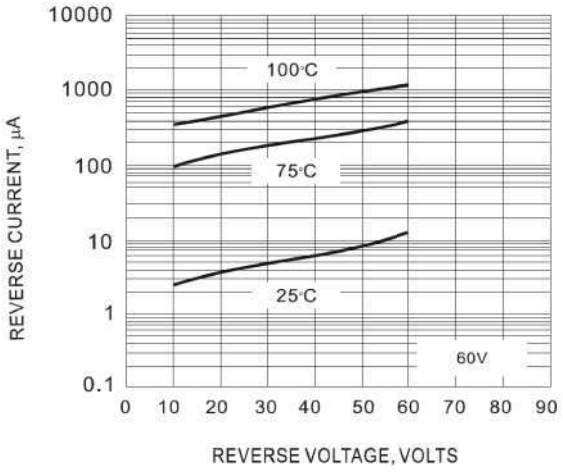


Fig. 3 Typical Reverse Characteristics

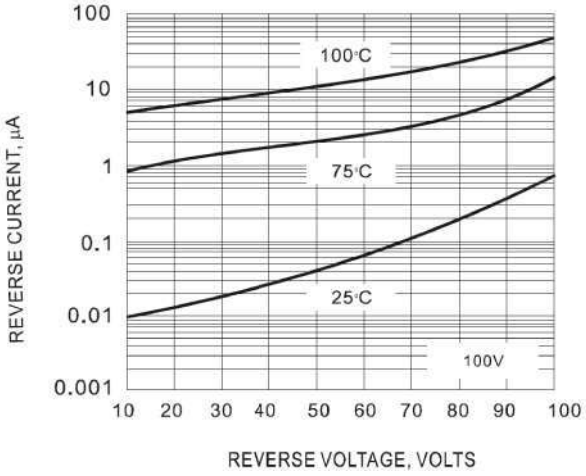


Fig. 4 Typical Reverse Characteristics

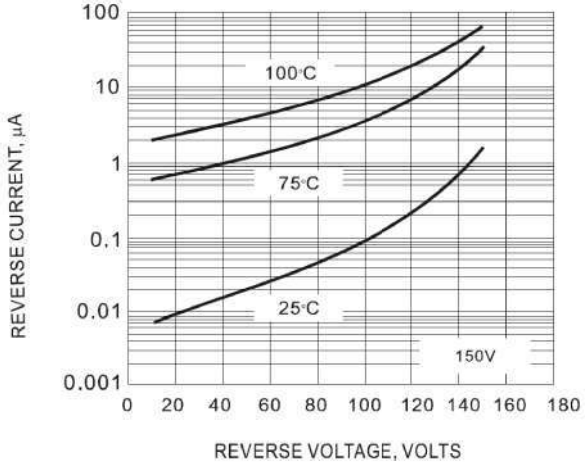


Fig. 5 Typical Reverse Characteristics

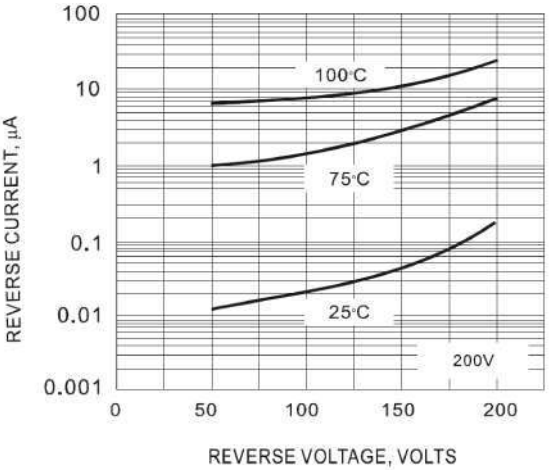


Fig. 6 Typical Reverse Characteristics

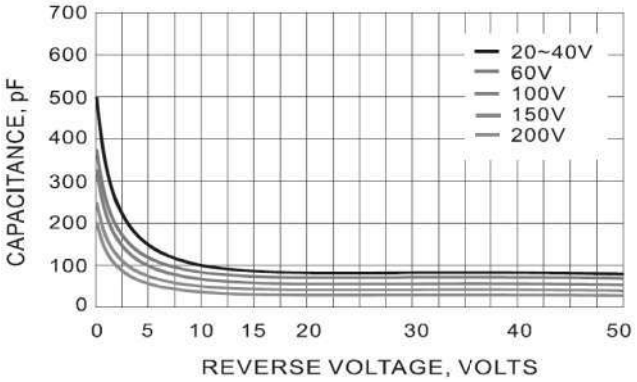


Fig. 7 Typical Forward Characteristics

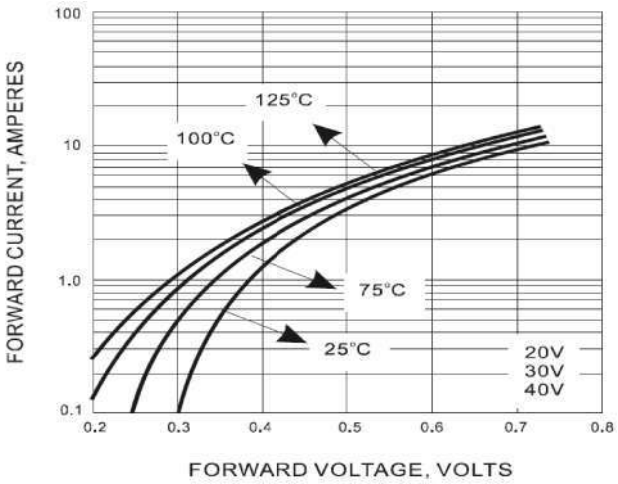


Fig. 8 Typical Forward Characteristics

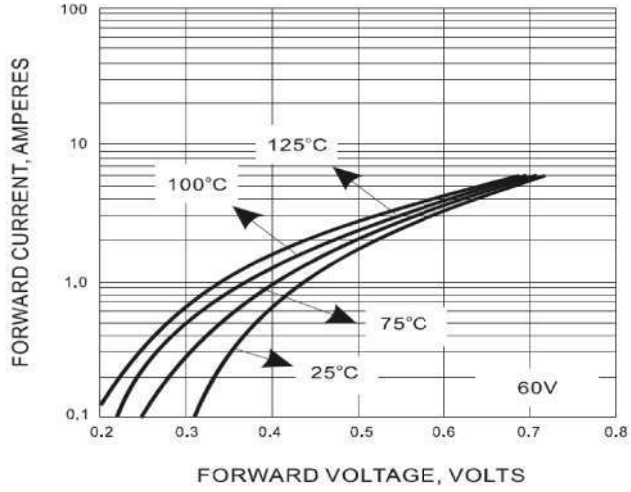


Fig. 9 Typical Forward Characteristics

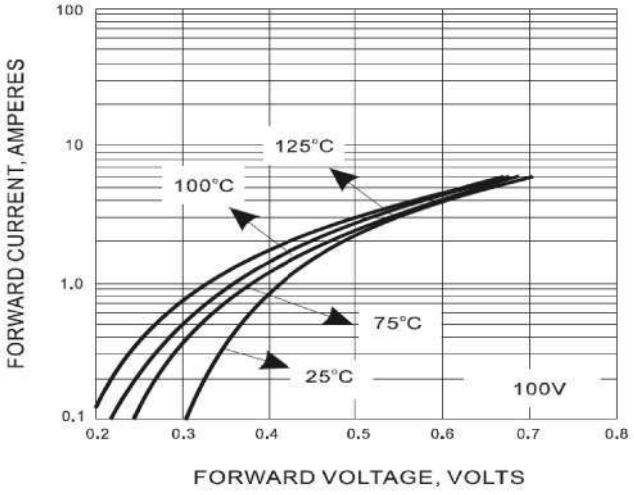


Fig. 10 Typical Forward Characteristics

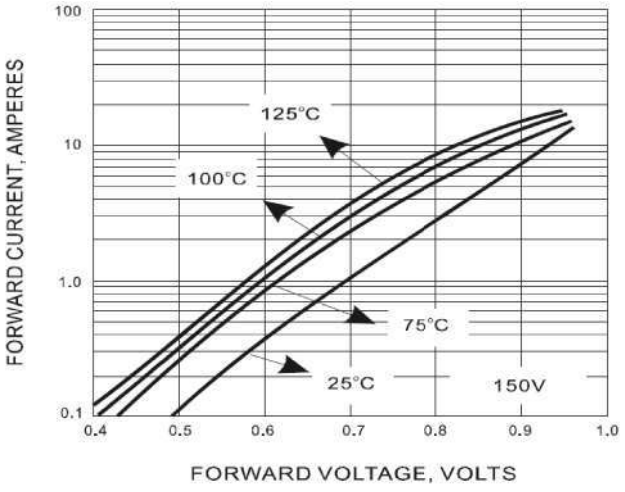


Fig. 11 OperatingTemperature Derating Curve

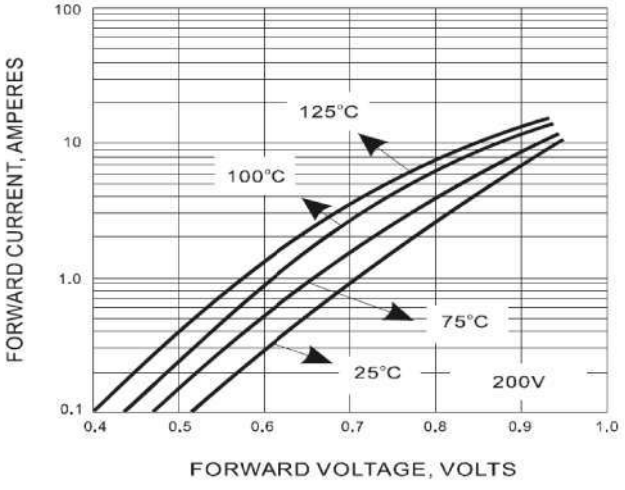


Fig. 12 Typical Instantaneous Forwad

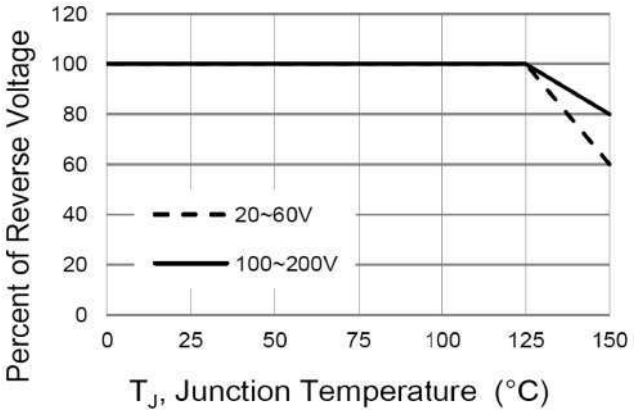
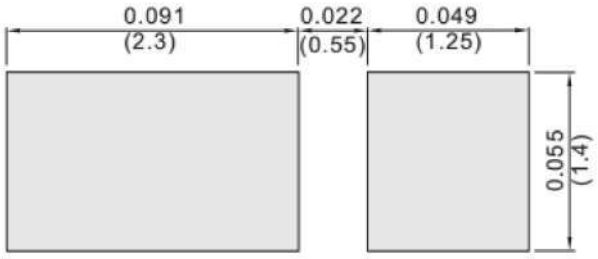


Fig. 13 Operating Temperature Derating

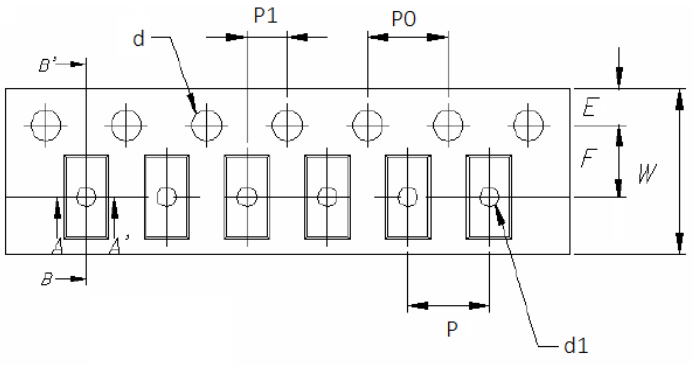
Pad Layout

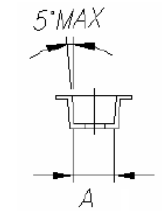


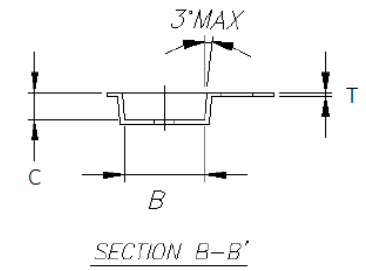
Unit: mm

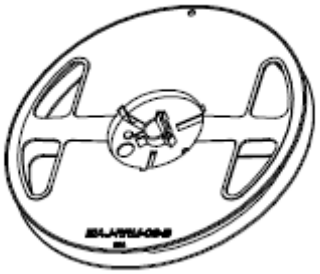
Packaging Specifications

Package	W (mm)	A (mm)	B (mm)	C (mm)	d1 (mm)	d (mm)	E (mm)	F (mm)	P (mm)	P0 (mm)	P1 (mm)	T (mm)
SOD-123FL	8±0.2	2.00±0.1	3.85±0.1	1.1±0.1	1.0	1.50±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.05
SOD-123HE	8±0.3	2.00±0.1	4.00±0.1	1.45±0.1	1.0	1.55±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
SOD-323FL	8±0.2	1.37±0.1	2.75±0.1	0.85±0.1	1.00	1.60±0.1	1.75±0.1	3.50±0.05	4±0.1	4±0.10	-	0.20±0.10
SOD-323HE	8±0.3	1.60±0.1	2.80±0.1	0.95±0.1	1.0	1.50±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
SMAF	12±0.3	2.9±0.1	5.5±0.1	2.1±0.1	1.5	1.55±0.1	1.75±0.1	5.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
SMA-S	12±0.2	2.65±0.1	5.25±0.1	1.35±0.1	1.0	1.55±0.1	1.75±0.1	5.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.10
SMA-HE	12±0.2	2.65±0.1	5.25±0.1	1.35±0.1	1.0	1.55±0.1	1.75±0.1	5.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.10

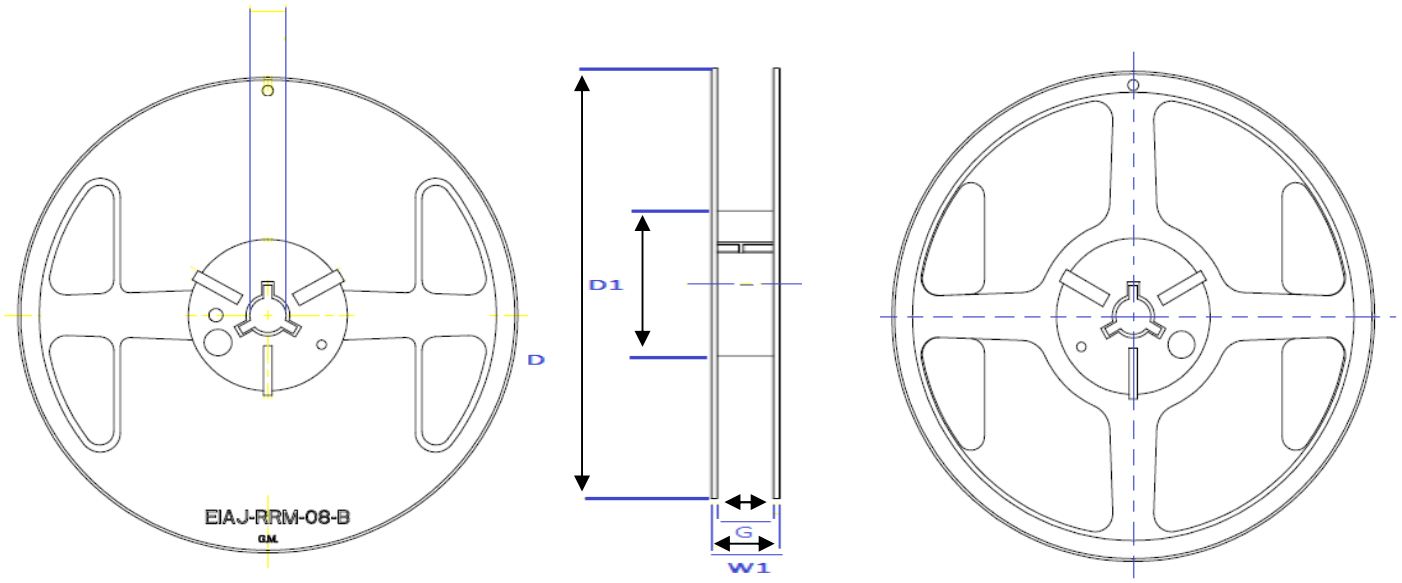




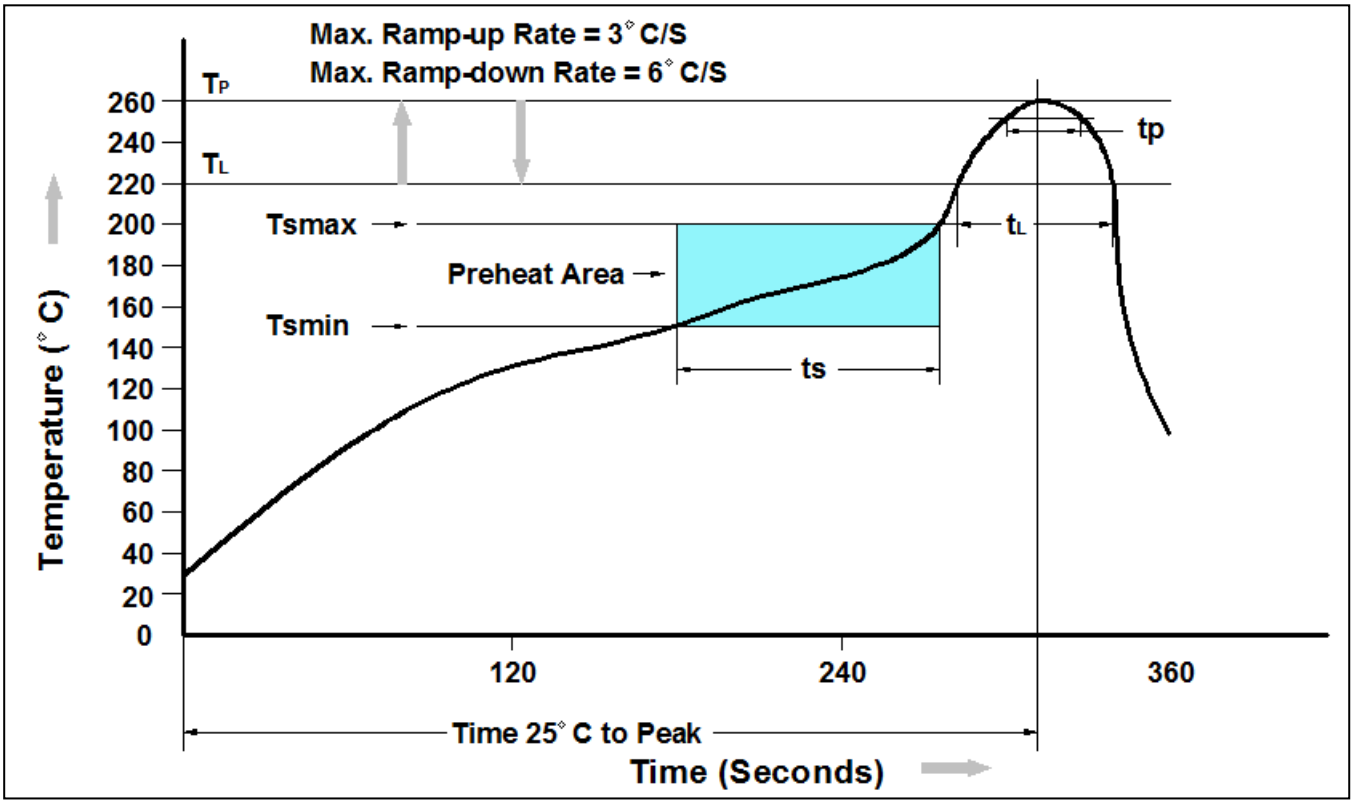




Package	D (max.) (mm)	D1 (min.) (mm)	D2 (mm)	G (min.) (mm)	W1 (min.) (mm)
SOD-123FL	178	50.0	13.0±0.2	8.4	11.4
SOD-123HE	178	50.0	13.0±0.2	8.4	11.4
SOD-323FL	178	50.2	13.0±0.2	8.0	11.5
SOD-323HE	178	50.0	13.0±0.2	8.4	11.4
SMAF	178	50.0	13.0±0.2	12.4	18.0
	330	50.0	13.0±0.2	12.4	18.0
SMA-S	178	50.0	13.0±0.2	12.4	18.0
SMA-HE	178	50.0	13.0±0.2	12.4	18.0



Recommand IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

Ordering Information

Part Number	Description	Quantity
SS3020HE~SS30200HE	SOD-123HE Reel	3000 pcs

DISCLAIMER

- The information in this document and any product described herein are subject to change without notice and should not be construed as a commitment by Paceleader, Paceleader reserve the right to make changes to the information in this document.

- Though Paceleader make effort to improve product quality and reliability, Product can malfunction and fail due to their inherent electrical sensitivity and vulnerability to physical stress, it is the responsibility of the customer, when utilizing Paceleader products, to comply with the standards of safety in making a safe design for entire system and to avoid situation in which a malfunction or failure., In developing a new designs, customer should ensure that the device which shown in this documents are used within specified operating ranges.

- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by Paceleader for any infringements of patents or other rights of the third parties which may result from its use.