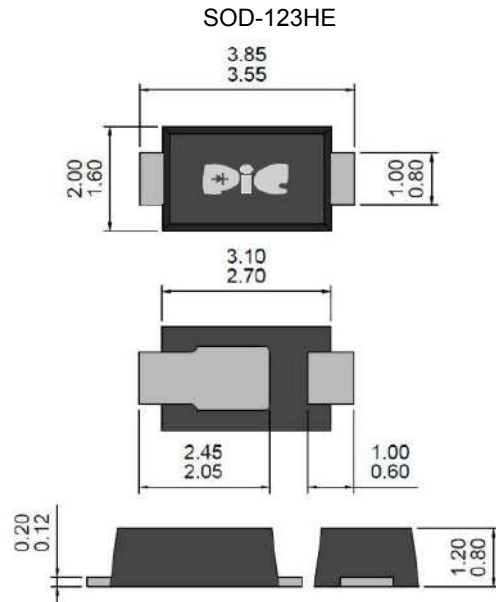


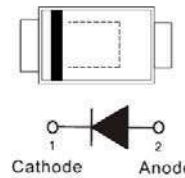
### Primary Characteristics

$I_F$	2.0	A
$V_{RRM}$	20~100	V
$I_{FSM}$	50.0	A
$V_F$	0.50~0.85	V

### Package Outline Dimensions



Unit : millimeters



### Features

- Fast switching speed
- Surface mount package suited for automatic insertion
- Low power loss, high efficiency
- Lead-free & halogen-free parts, RoHS compliant

### Mechanical Data

- Epoxy: UL94V-0 rated flame retardant
- Case: Molded Plastic
- Terminals: Solder plated solderable per MIL-STD-750 M2026
- Mounting position: Any
- Polarity: Color band denotes cathode end

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

	Symbol	SS2020HE	SS2040HE	SS2060HE	SS20100HE	UNITS
Marking Code	-	GM	GP	GQ	GR	-
Reverse Voltage	$V_R$	20	40	60	100	Volts
Peak Reverse Voltage	$V_{RRM}$	20	40	60	100	Volts
Average Rectified Current at $T_A=75^\circ\text{C}$	$I_{F(AV)}$	2.0				Amps
Non-Repetitive Peak Forward Surge Current at $t=8.3\text{ms}$	$I_{FSM}$	50.0				Amps
Max. Forward Voltage at 2.0A	$V_F$	0.50		0.70	0.85	Volts
Reverse Leakage Current at $V_{RRM}$	$I_R$	100		40		$\mu\text{A}$
Typical Thermal Resistance, Junction to Ambient(Note 1)	$R_{\theta JA}$	60				$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 ~ +125				$^\circ\text{C}$

Notes:

- (1) Mounted with minimum recommended pad size, PC Board FR4.
- (2)  $T_A=25^\circ\text{C}$  unless otherwise specified.

### Rating and Characteristics Curves

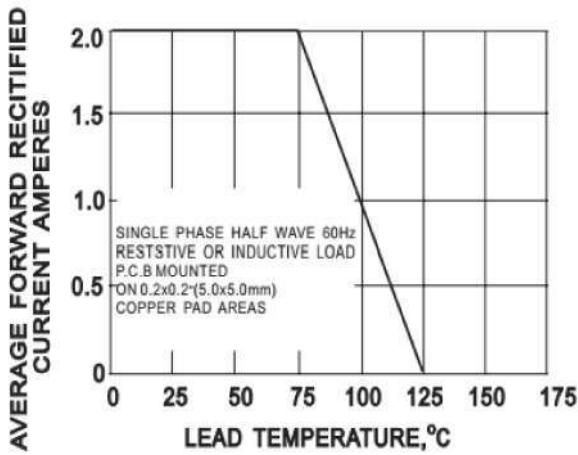


Fig. 1 Forward Current Derating Curve

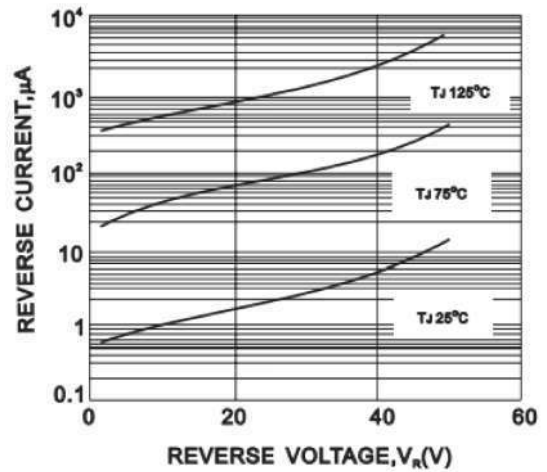


Fig. 2 Typical Junction Capacitance

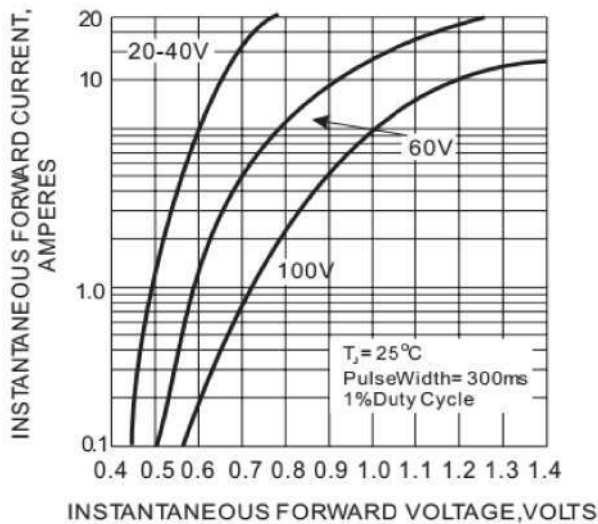
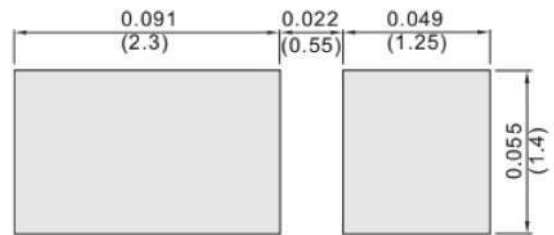


Fig. 3 Typical Reverse Characteristics

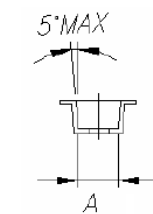
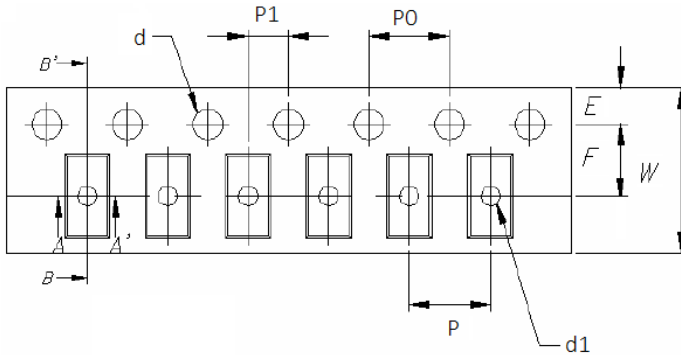
### Pad Layout



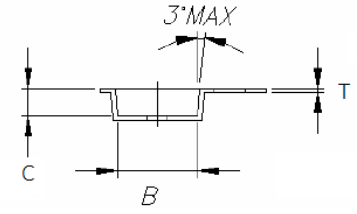
Unit: mm

### Packaging Specifications

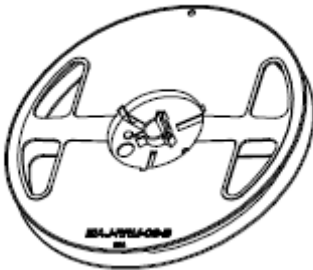
Package	W (mm)	A (mm)	B (mm)	C (mm)	d1 (mm)	d (mm)	E (mm)	F (mm)	P (mm)	P0 (mm)	P1 (mm)	T (mm)
SOD-123FL	8±0.2	2.00±0.1	3.85±0.1	1.1±0.1	1.0	1.50±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.05
SOD-123HE	8±0.3	2.00±0.1	4.00±0.1	1.45±0.1	1.0	1.55±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
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



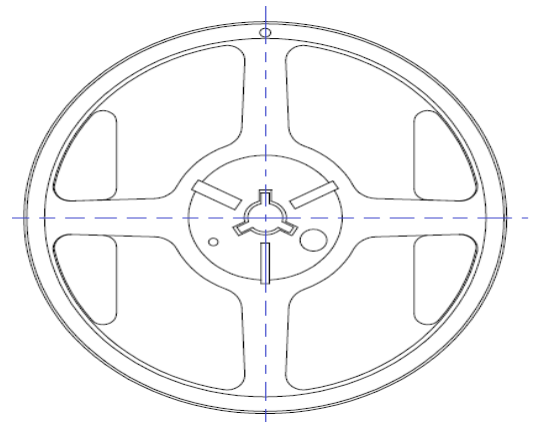
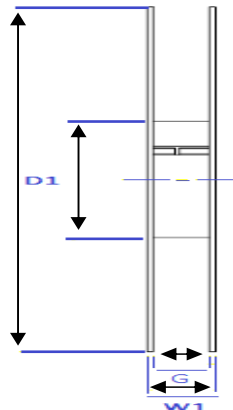
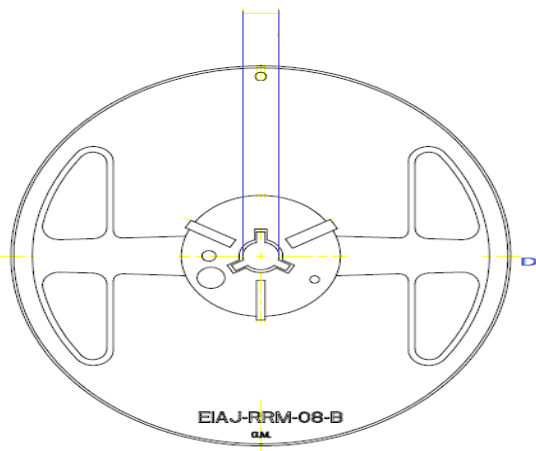
SECTION A-A'



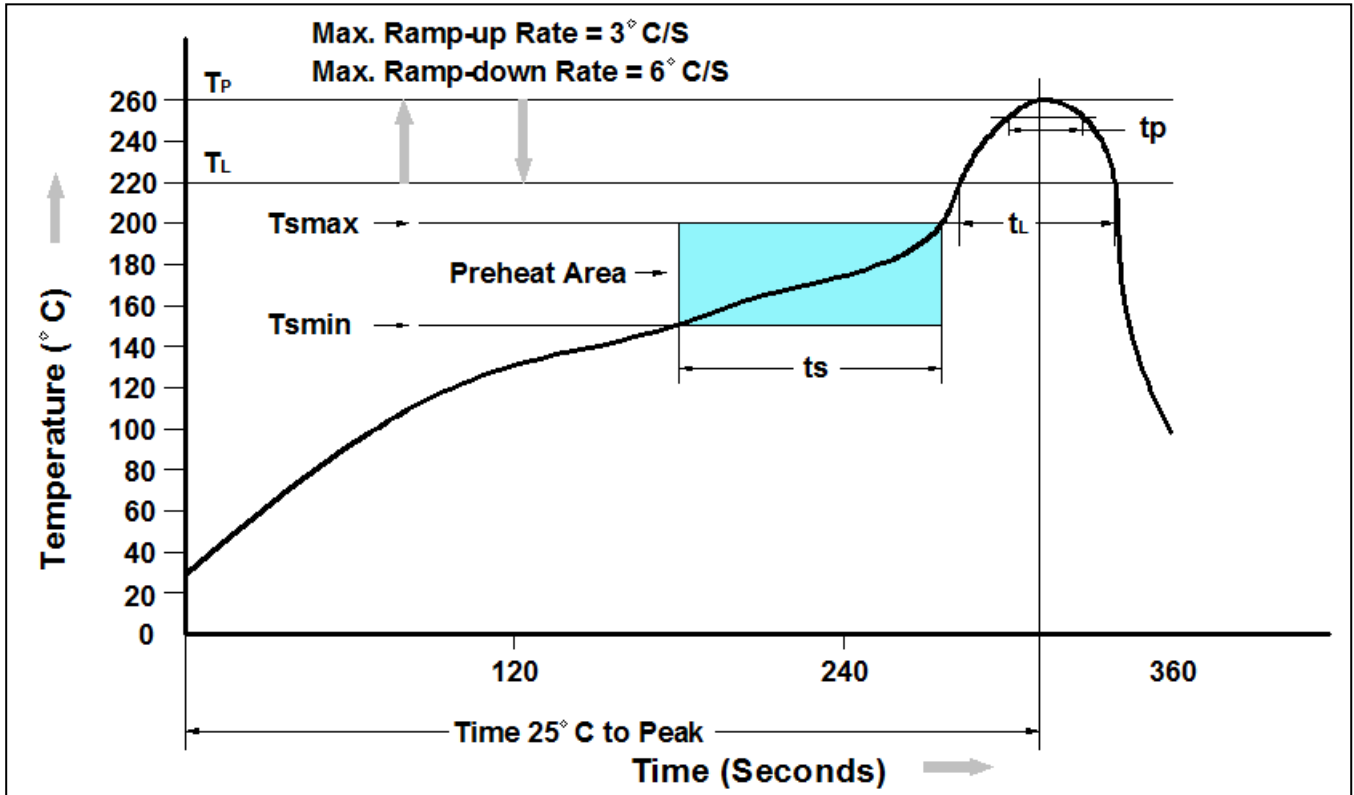
SECTION B-B'



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



### Recommend IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T Amin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (T Amin 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
SS2020HE~SS20100HE	SOD-123HE Reel	3000 pcs

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