SM5817WS THRU SM5819WS

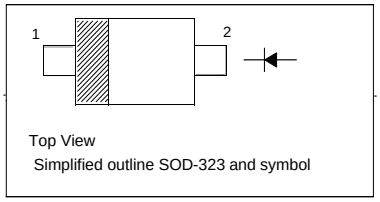
SOD-323 Plastic-Encapsulate Diodes
SCHOTTKY BARRIER DIODE

Primary Characteristics

Io	1.0	A
VRRM	20~40	V
IFSM	9.0	A
VF	0.45~0.9	V

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Top View
Simplified outline SOD-323 and symbol

FEATURES

For use in low voltage, high frequency inverters Free wheeling, and polarity protection applications.

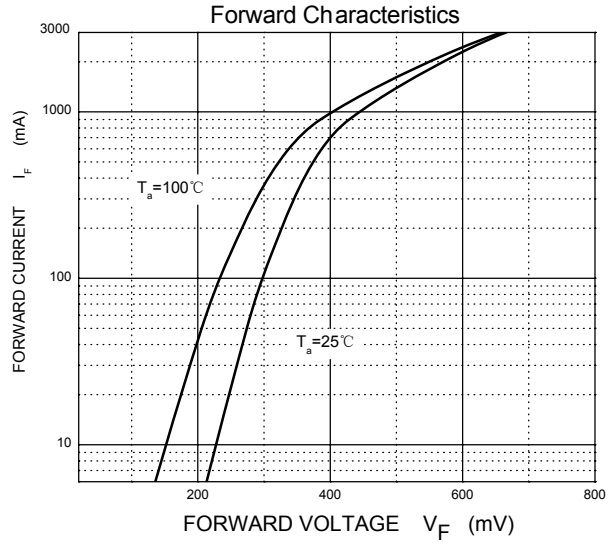
Maximum Ratings and Electrical Characteristics, Single Diode @Ta=25℃

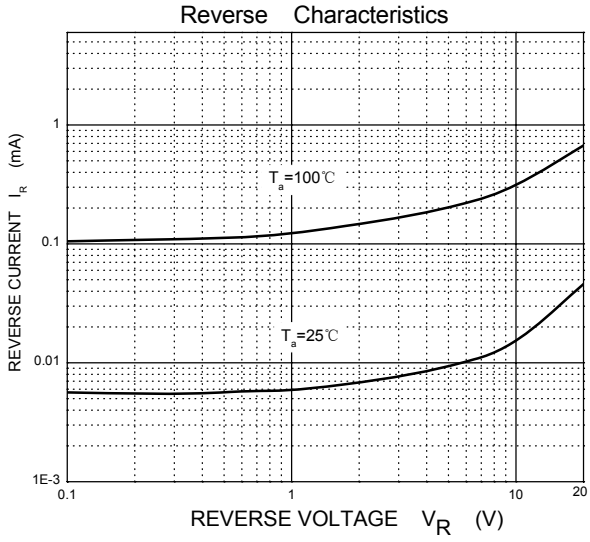
Parameter	Symbol	SM5817WS	SM5818WS	SM5819WS	Unit
Non-repetitive peak reverse voltage	V_{RM}	20	30	40	V
Peak repetitive peak reverse voltage **Working peak reverse voltage** **DC blocking voltage**	V_{RRM} V_{RWM} V_R	20	30	40	V
RMS reverse voltage	$V_{R(RMS)}$	14	21	28	V
Average rectified output current	I_O	1			A
Non-repetitive Peak Forward Surge Current @t=8.3ms	I_{FSM}	9			A
Repetitive peak forward current	I_{FRM}	1.5			A
Power dissipation	Pd	250			mW
Thermal resistance junction to ambient	$R_{\theta JA}$	400			℃/W
Junction temperature	TJ	125			℃
Storage temperature	TSTG	-55~+150			℃

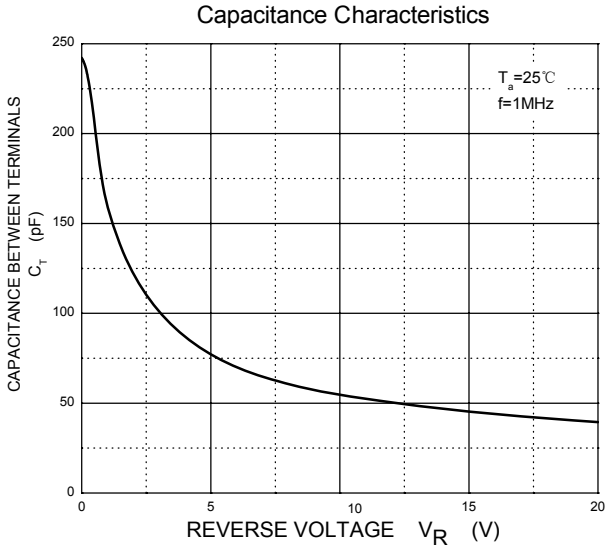
ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

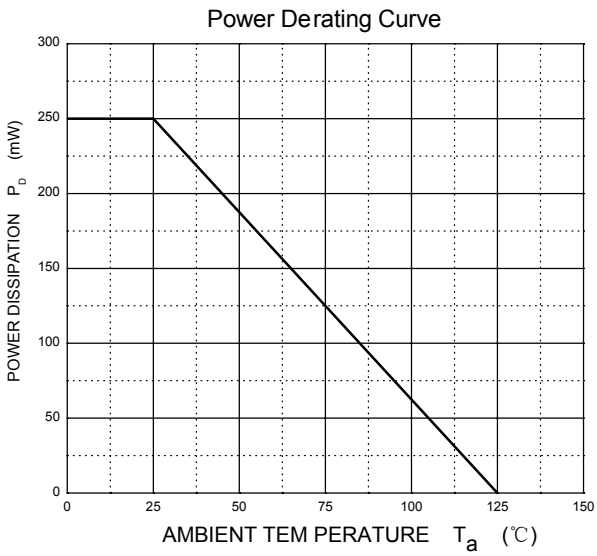
Parameter	Symbol	Test conditions		Min	Max	Unit
Reverse breakdown voltage	V(BR)	I_R= 1mA	SM5817WS	20		V
			SM5818WS	30		
			SM5819WS	40		
Reverse voltage leakage current	I_R	V_R=20V	SM5817WS		1	mA
		V_R=30V	SM5818WS			
		V_R=40V	SM5819WS			
Forward voltage	VF	SM5817WS	I_F=1A		0.45	V
			I_F=3A		0.75	
		SM5818WS	I_F=1A		0.55	V
			I_F=3A		0.875	
		SM5819WS	I_F=1A		0.6	V
			I_F=3A		0.9	
Diode capacitance	C_D	VR=4V, f=1MHz			120	pF

Typical Characteristics SM5817WS

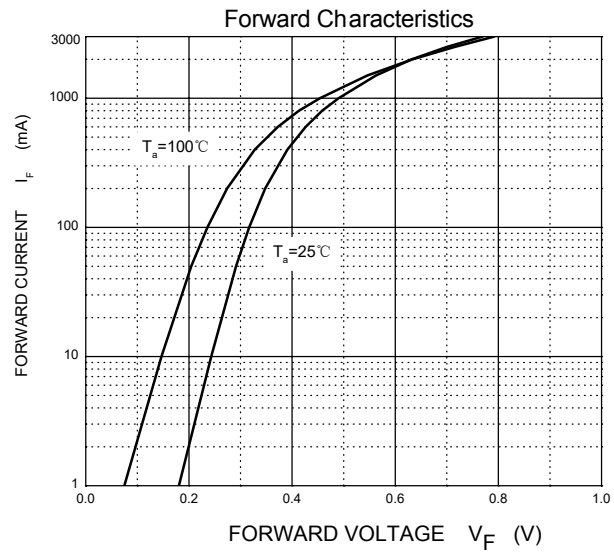


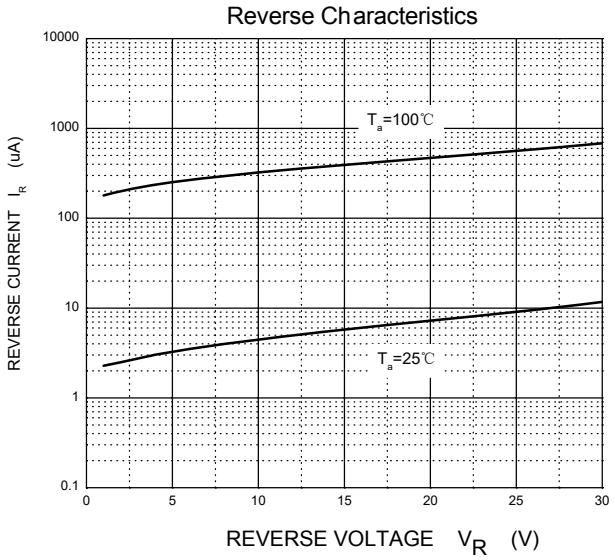


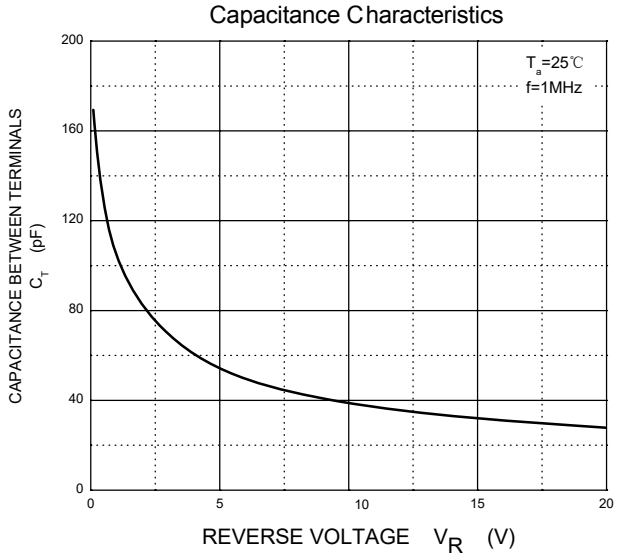


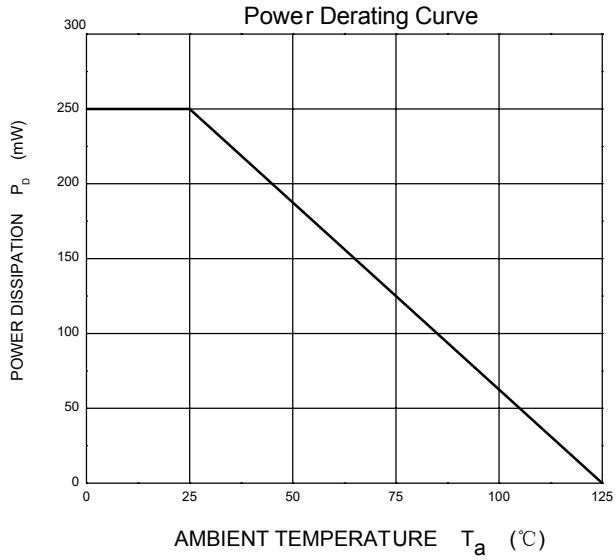


Typical Characteristics SM5818WS

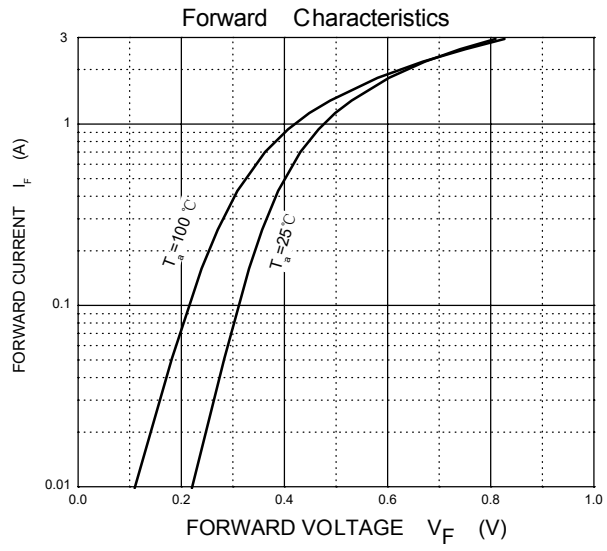


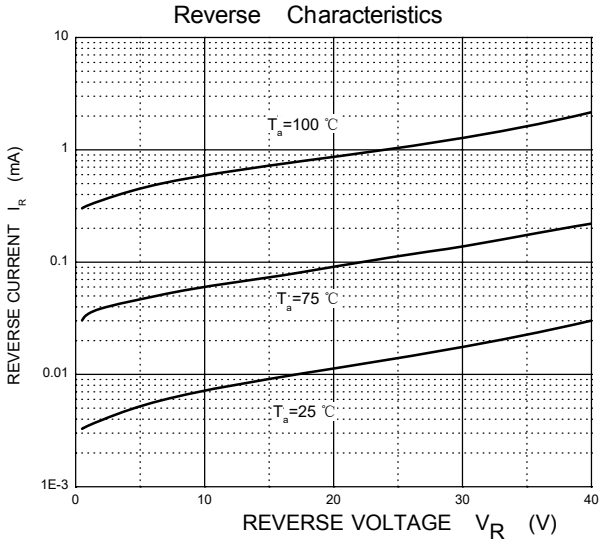


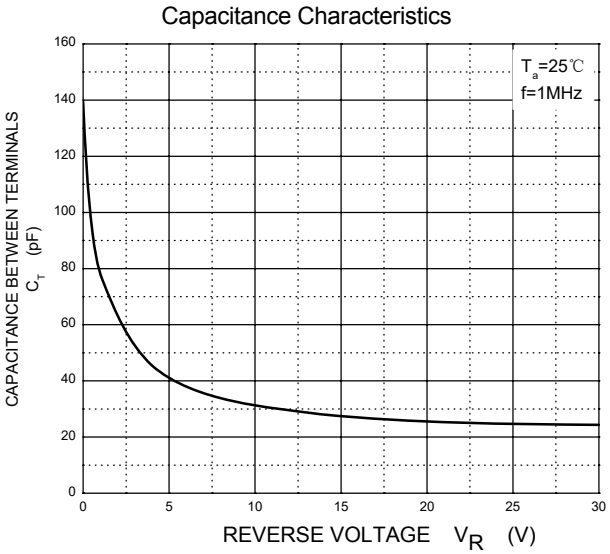


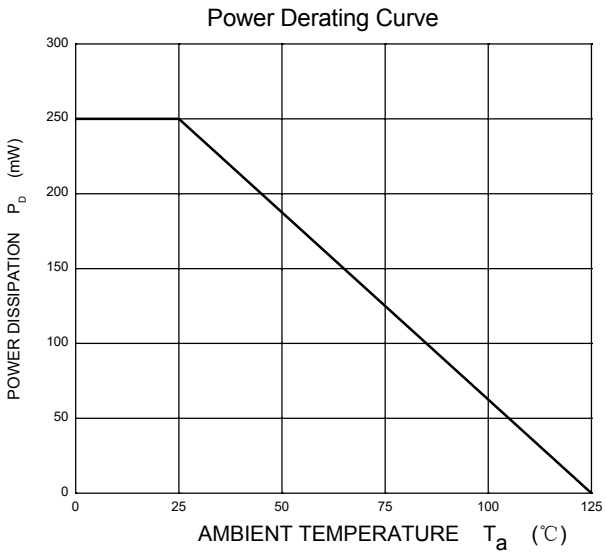


Typical Characteristics SM5819WS



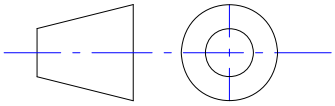


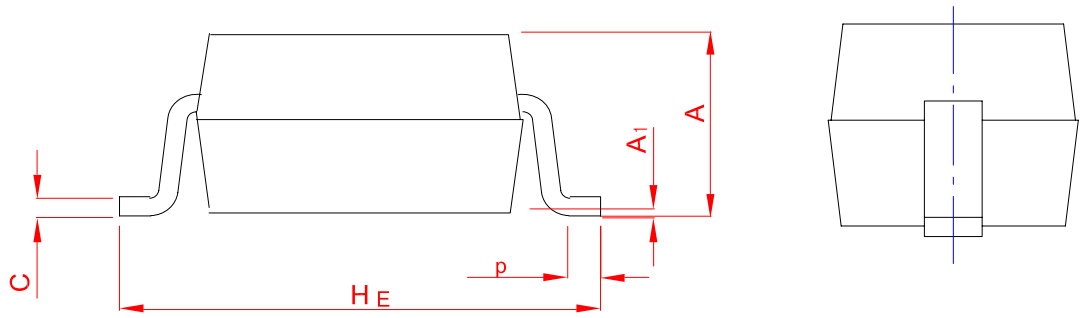


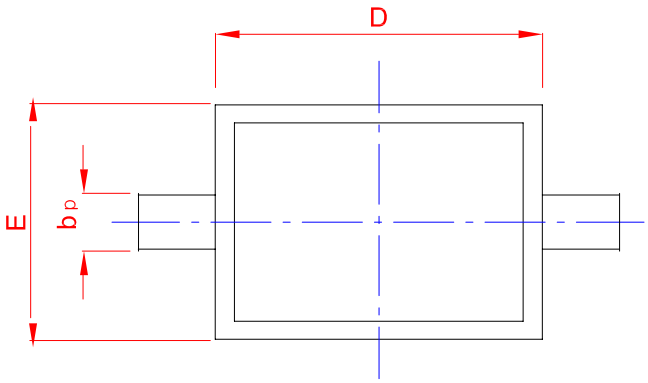


PACKAGE OUTLINE SOD-323

Plastic surface mounted package : 2 leads



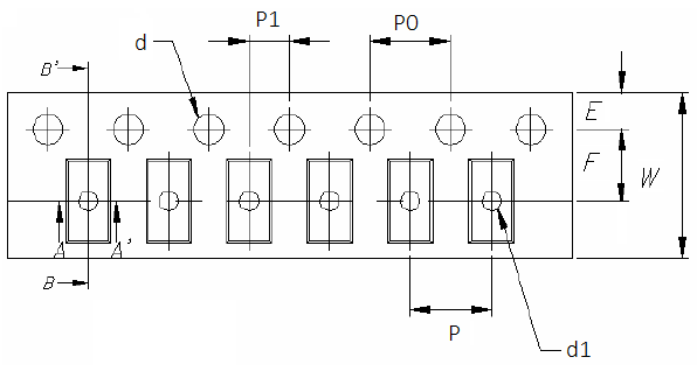


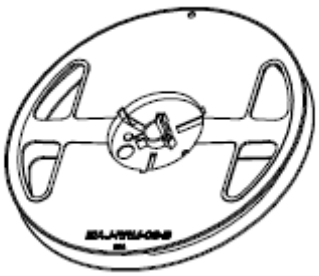


UNIT	A	bp	C	D	E	HE	A1	Lp
mm	1.20 0.90	0.40 0.25	0.15 0.10	1.80 1.60	1.35 1.15	2.80 2.30	0.10 0.01	0.50 0.20

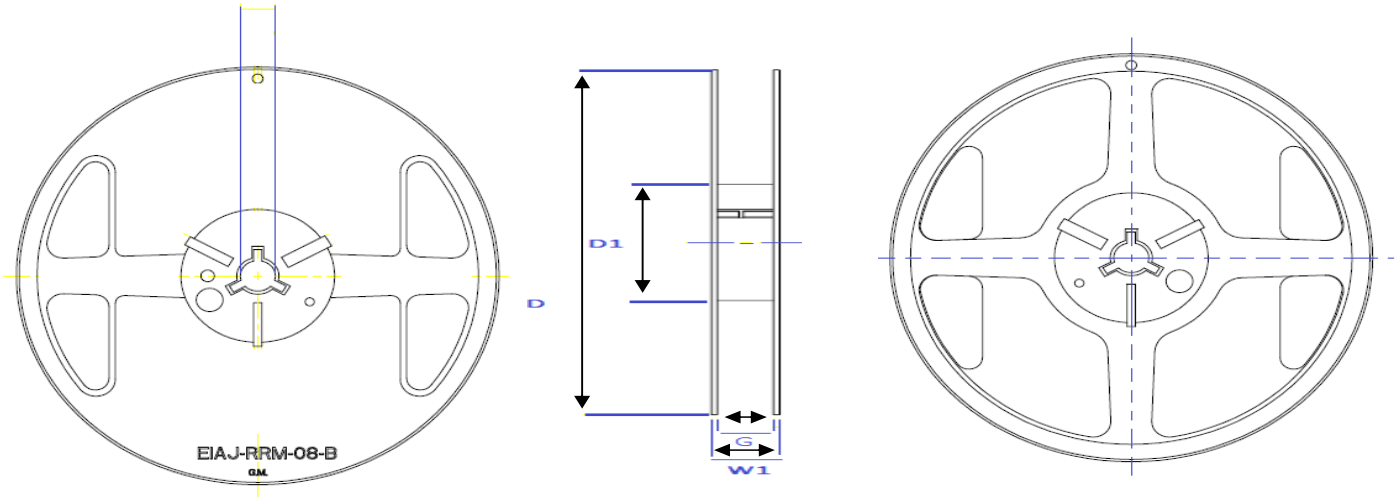
Packaging Specifications

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-123	8Ñ0.2	2.00Ñ0.1	3.85Ñ0.1	1.1Ñ0.1	1.0	1.50Ñ0.1	1.75Ñ0.1	3.5Ñ0.05	4Ñ0.1	4Ñ0.05	2Ñ0.05	0.23Ñ0.05
SOD-123FL	8Ñ0.2	2.00Ñ0.1	3.85Ñ0.1	1.1Ñ0.1	1.0	1.50Ñ0.1	1.75Ñ0.1	3.5Ñ0.05	4Ñ0.1	4Ñ0.05	2Ñ0.05	0.23Ñ0.05
SOD-123HE	8Ñ0.3	2.00Ñ0.1	4.00Ñ0.1	1.45Ñ0.1	1.0	1.55Ñ0.1	1.75Ñ0.1	3.5Ñ0.05	4Ñ0.1	4Ñ0.10	2Ñ0.05	0.23Ñ0.10
SOD-323	8Ñ0.2	1.37Ñ0.1	2.75Ñ0.1	0.85Ñ0.1	1.00	1.6 0Ñ0.1	1.75Ñ0.1	3.50Ñ0.05	4Ñ0.1	4Ñ0.10	-	0.20Ñ0.10
SOD-323FL	8Ñ0.2	1.37Ñ0.1	2.75Ñ0.1	0.85Ñ0.1	1.00	1.6 0Ñ0.1	1.75Ñ0.1	3.50Ñ0.05	4Ñ0.1	4Ñ0.10	-	0.20Ñ0.10
SOD-323HE	8Ñ0.3	1.60Ñ0.1	2.80Ñ0.1	0.95Ñ0.1	1.0	1.50Ñ0.1	1.75Ñ0.1	3.5Ñ0.05	4Ñ0.1	4Ñ0.10	2Ñ0.05	0.23Ñ0.10
SMAF	12Ñ0.3	2.9Ñ0.1	5.5Ñ0.1	2.1Ñ0.1	1.5	1.55Ñ0.1	1.75Ñ0.1	5.5Ñ0.05	4Ñ0.1	4Ñ0.10	2Ñ0.05	0.23Ñ0.10
SMA-S	12Ñ0.2	2.65Ñ0.1	5.25Ñ0.1	1.35Ñ0.1	1.0	1.55Ñ0.1	1.75Ñ0.1	5.5Ñ0.05	4Ñ0.1	4Ñ0.05	2Ñ0.05	0.23Ñ0.10
SMA-HE	12Ñ0.2	2.65Ñ0.1	5.25Ñ0.1	1.35Ñ0.1	1.0	1.55Ñ0.1	1.75Ñ0.1	5.5Ñ0.05	4Ñ0.1	4Ñ0.05	2Ñ0.05	0.23Ñ0.10

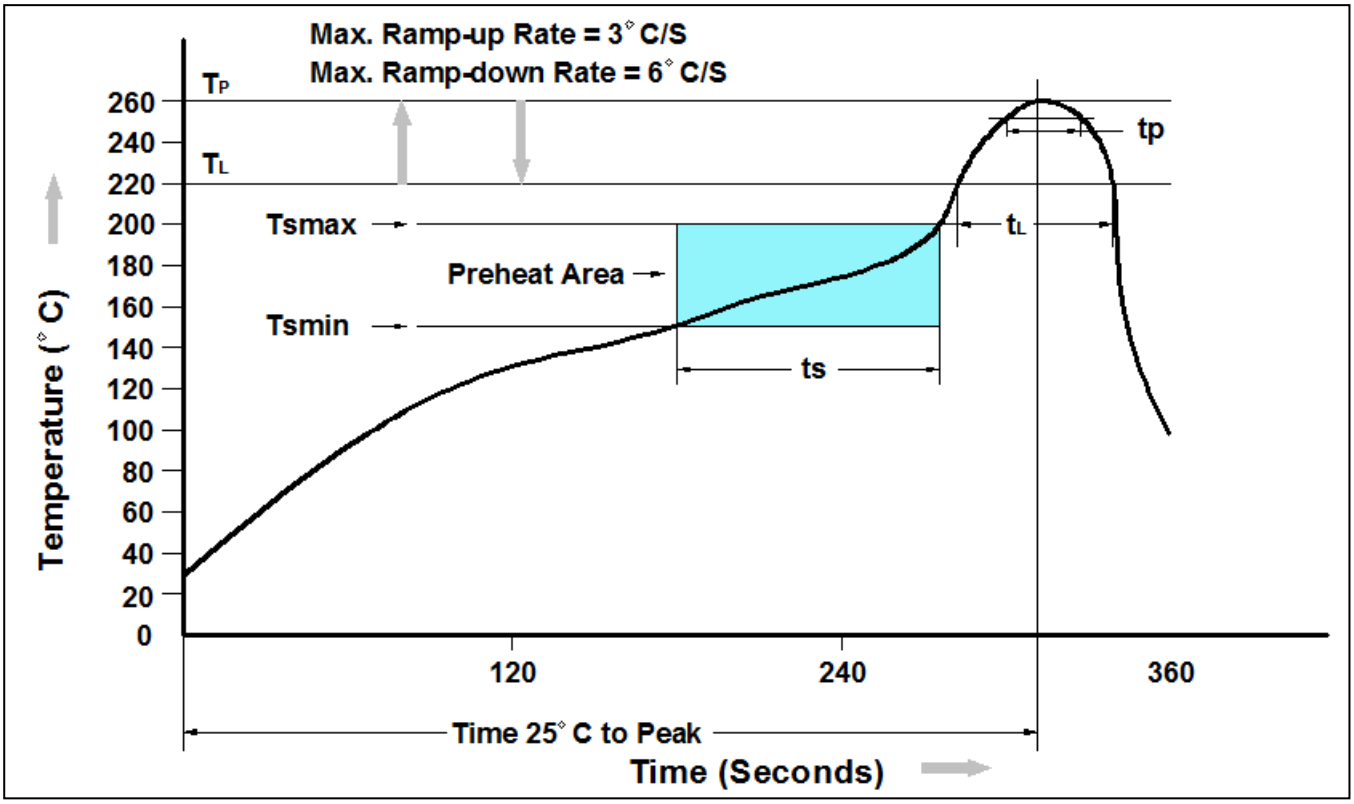




Package	D (max.) (mm)	D1 (min.) (mm)	D2 (mm)	G (min.) (mm)	W1 (min.) (mm)
SOD-123	178	50.0	13.0±0.2	8.4	11.4
SOD-123FL	178	50.0	13.0±0.2	8.4	11.4
SOD-123HE	178	50.0	13.0±0.2	8.4	11.4
SOD-323	178	50.2	13.0±0.2	8. 0	11.5
SOD-323FL	178	50.2	13.0±0.2	8. 0	11.5
SOD-323HE	178	50.0	13.0±0.2	8.4	11.4
SMAF	178	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
SM5817WS~SM5819WS	SOD-323 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.