

Fast Switching Diode

PRIMARY CHARACTERISTICS

VRRM	IO	VF(type)	I FSM	Tj max
75V	150mA	1.25V	2.0A	150°C

Features

- Fast switching speed (TRR < 4.0 nS)
- Low reverse leakage current
- High stability and high reliability
- Power dissipation of 500mW

Mechanical Data

- SOD-123 small outline plastic package
- Molded plastic body, UL 94V-0 approved
- Polarity: color band denotes cathode end
- Mounting position: any

SOD-123



Package Marking and Ordering Information

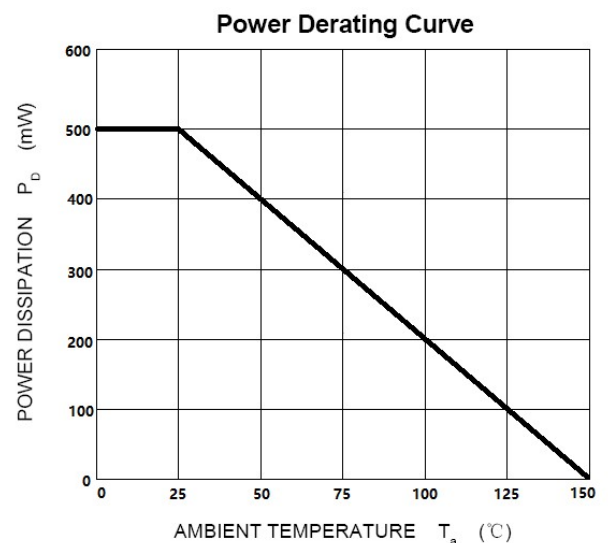
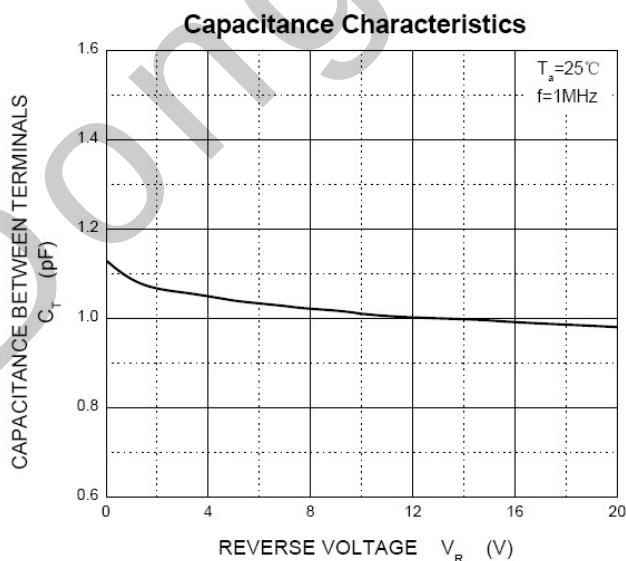
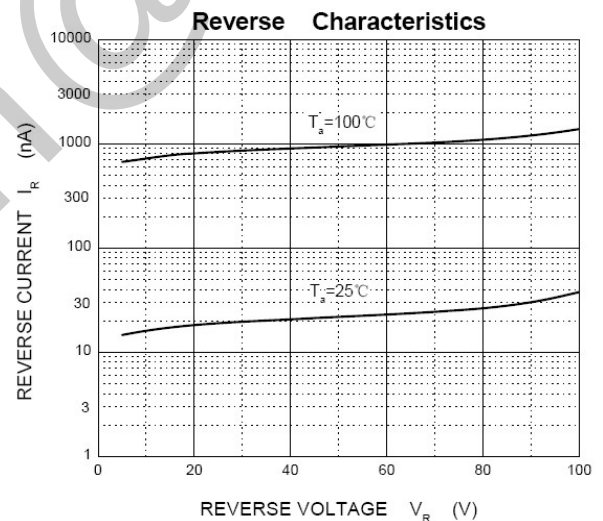
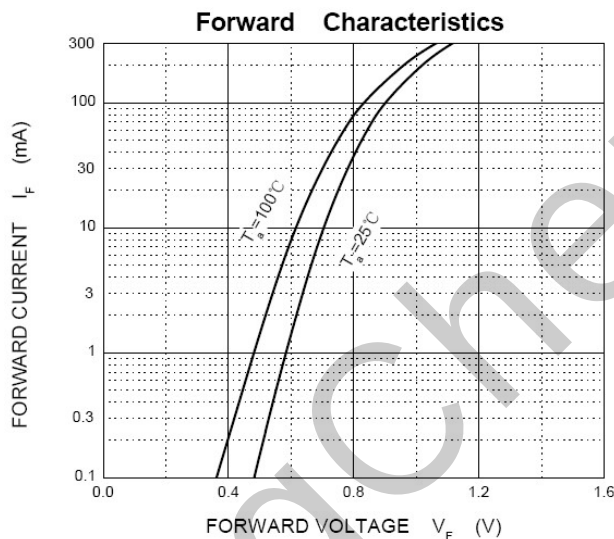
Product ID	Pack	Marking	Qty(PCS)
1N4148W	SOD-123	T4	3000

Absolute Maximum Ratings (TC=25°C unless otherwise noted)

Parameters	Symbols	Limits	Units
Maximum repetitive peak reverse voltage	VRRM	75	V
Reverse Voltage	VR	75	V
Maximum DC blocking voltage	VDC	75	V
Non-repetitive Peak Forward Current	IFM	300	mA
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	IFSM	2.0	A
Average Rectified Current	IO	150	mA
Power Dissipation	PD	500	mW
Typical junction capacitance (Note1)	CJ	4	pF
Typical thermal resistance (Note2)	RthJA	250	°C/W
Operating junction temperature range	TJ	150	°C
Storage temperature range	TSTG	-65~+150	°C

Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

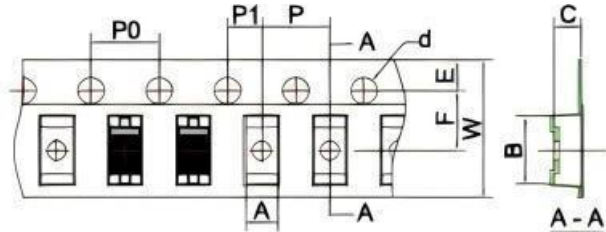
Parameter	Symbols	Test Conditions	Min	Type	Max	Units
Minimum reverse breakdown voltage	BV	$I_R=100\mu\text{A}$	100	-	-	V
Maximum instantaneous forward voltage	VF	$I_F=10\text{mA}$	-	-	1.00	V
		$I_F=100\text{mA}$	-	-	1.25	
Maximum DC reverse current at rated DC blocking voltage	I_R	$V_R=20\text{V}$	-	-	25	nA
Reverse Recovery Time	TRR	$I_F=I_R=10\text{mA}$	-	-	4	ns
Capacitance between terminals	CT	$V_R=0\text{V}$, $f=1\text{MHz}$	-	-	4	pF



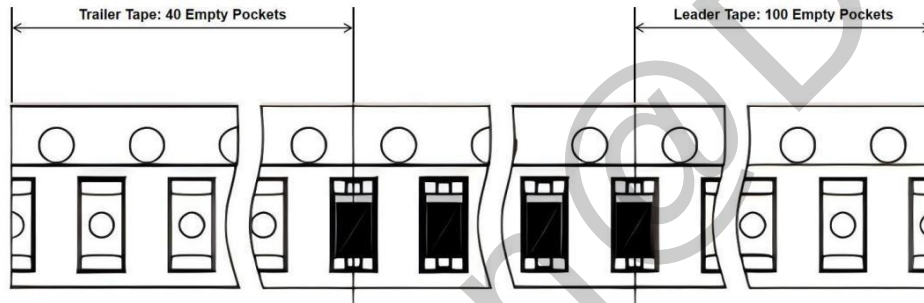
Fast Switching Diode

Package Information

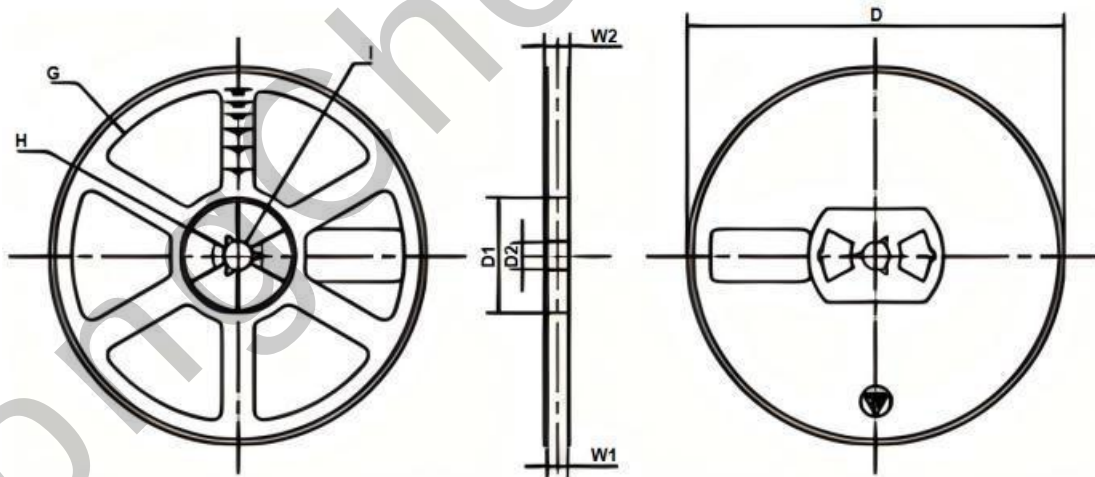
Carrier Dimension(mm)



Dimensions are in millimeter										
Pkg Type	A	B	C	d	E	F	P0	P	P1	W
SOD-123	1.85	3.94	1.57	1.55	1.75	3.50	4.00	4.00	2.00	8.00
(Tolerance)	±0.05	±0.05	±0.05	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	+0.06/-0.1



Reel Dimension(mm)



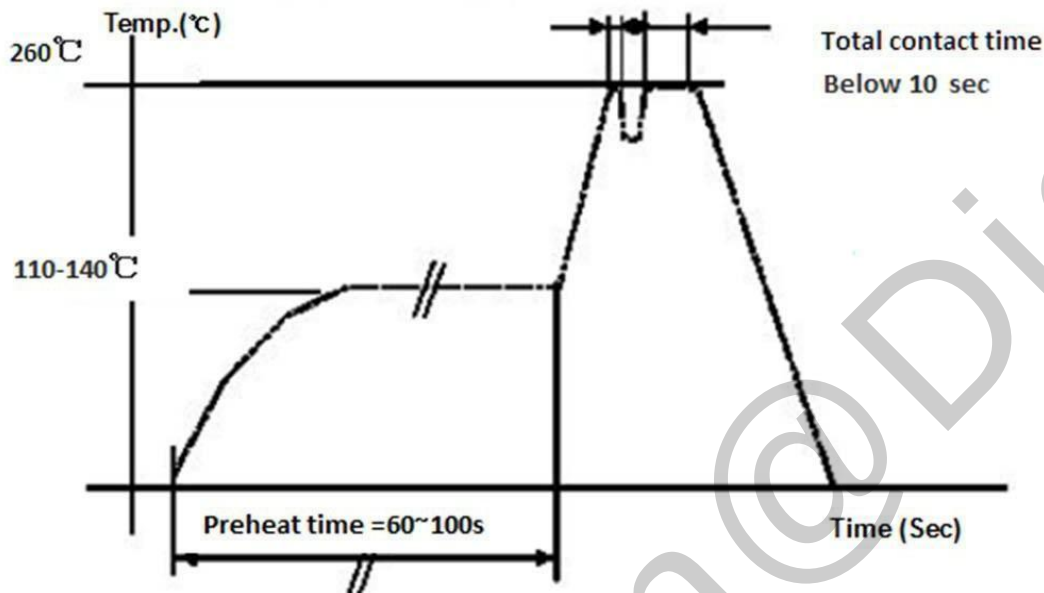
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

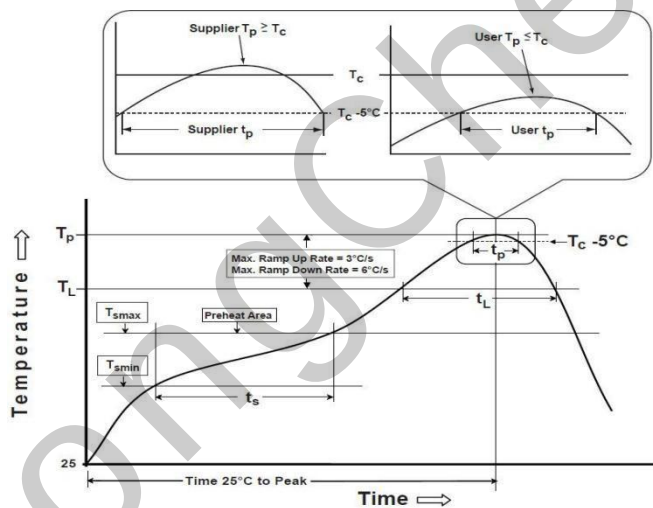
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOD123	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

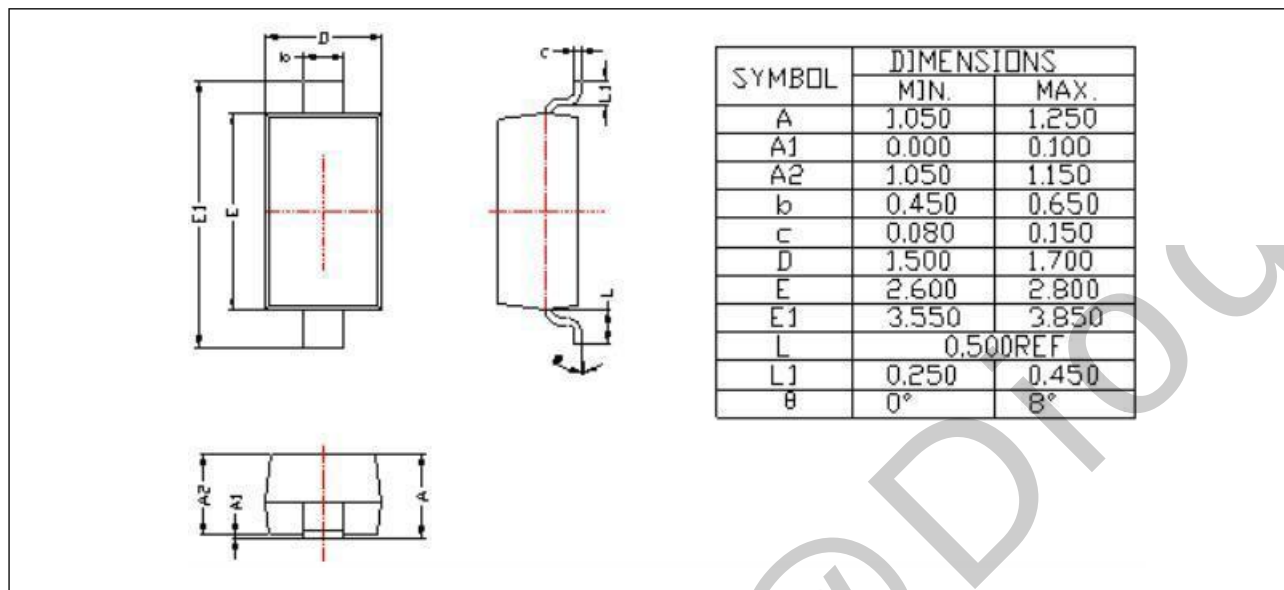


Preheat/Soak Temperature Min (T _{smin}) Temperature Max (T _{smax}) Time (ts) from (T _{smin} to T _{smax})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

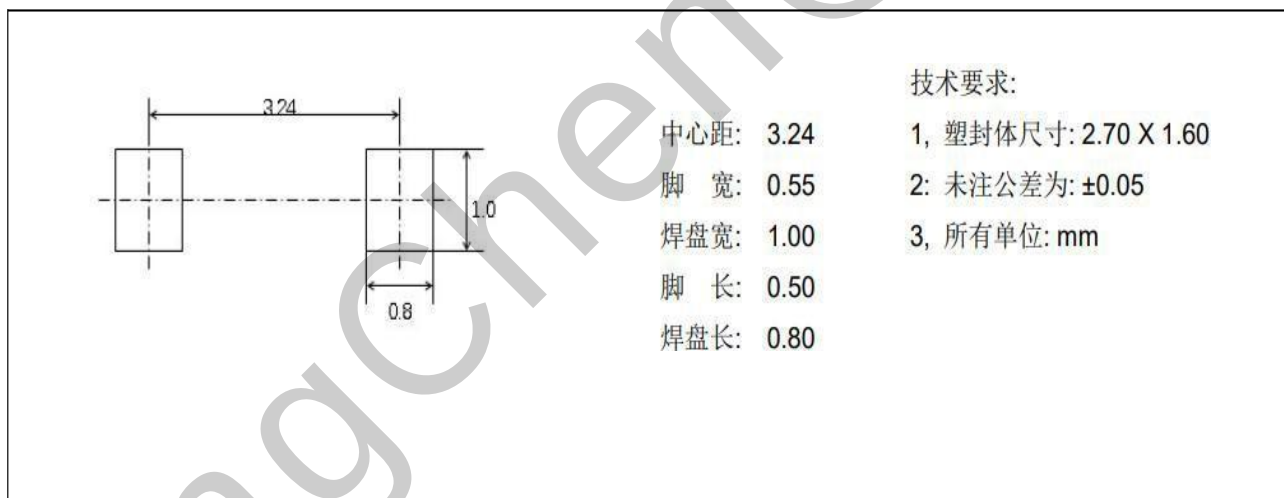
c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Dimensions



Pad Dimensions



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