



SOD-123 Plastic-Encapsulate Diodes

1N4148W Fast Switching Diodes

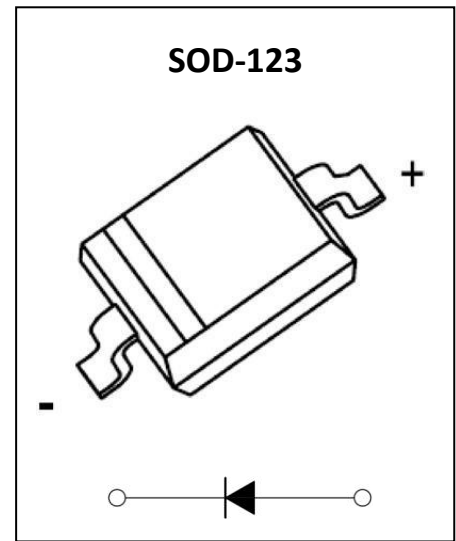
Feature

- V_{RSM} 100V; V_{RRM} 75V
- I_{FM} 300mA; I_{AV} 150mA
- AEC Q101 Qualified

Application

- Extreme fast switches

MARKING



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

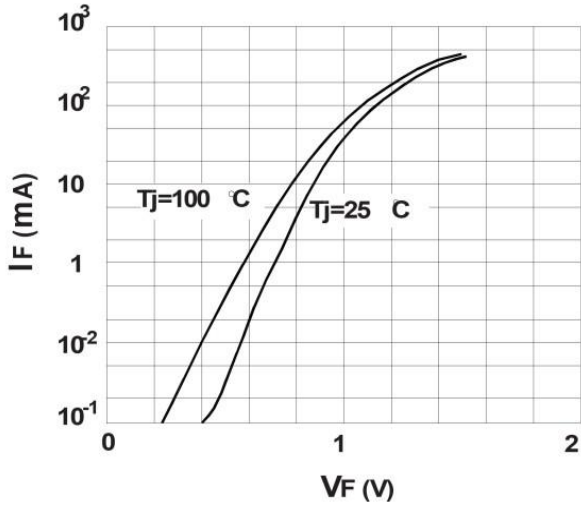
Parameter	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V_{RSM}	100	V
Repetitive Peak Reverse Voltage	V_{RRM}	75	V
Average rectified output current	I_o	0.15	A
Forward continuous current	I_{FM}	0.30	A
Non-repetitive Peak Forward Surge Current @ $t=1\ \mu\text{s}$	I_{FSM}	2	A
Non-repetitive Peak Forward Surge Current @ $t=1\ \text{s}$		1	A
Power Dissipation	P_D	0.4	W
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65 ~ +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

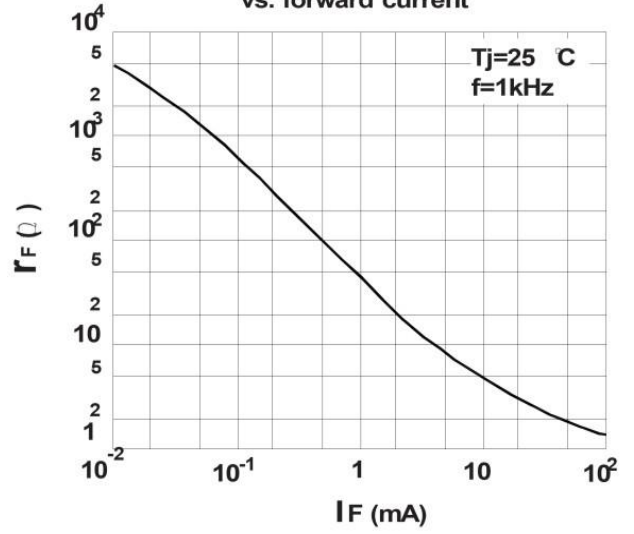
Parameter	Symbol	Test Condition	Min	Max	Unit
Forward voltage	V_F	$I_F = 1\text{mA}$		0.715	V
		$I_F = 10\text{mA}$		0.855	V
		$I_F = 50\text{mA}$		1.0	V
		$I_F = 150\text{mA}$		1.25	V
Reverse current	I_R	$V_R = 20\text{V}$		25	nA
		$V_R = 75\text{V}$		1	μA
Diode capacitance	C_D	$V_R=0\text{V}$, $f=1\text{MHz}$		2	pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=10\text{mA}$, $I_{rr}=0.1 \cdot I_R$, $R_L=100\Omega$		4	ns

Typical Electrical and Thermal Characteristics

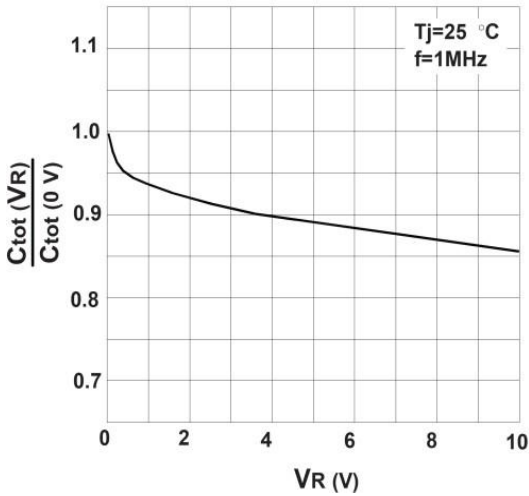
Forward characteristics



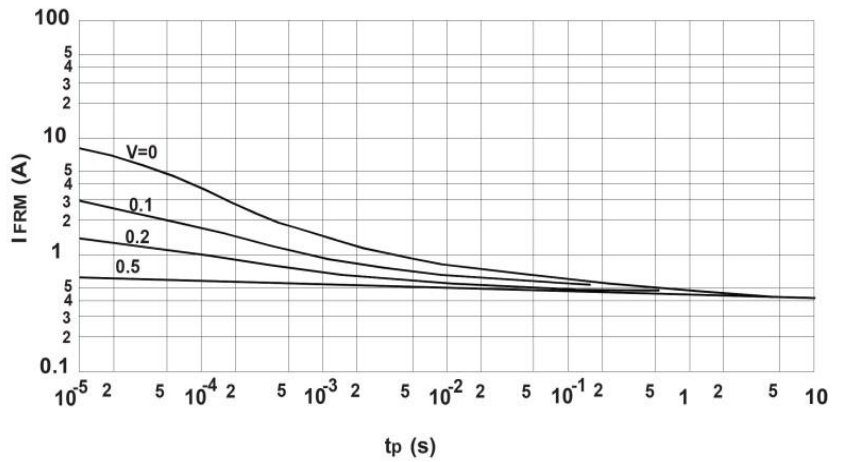
Dynamic forward resistance vs. forward current



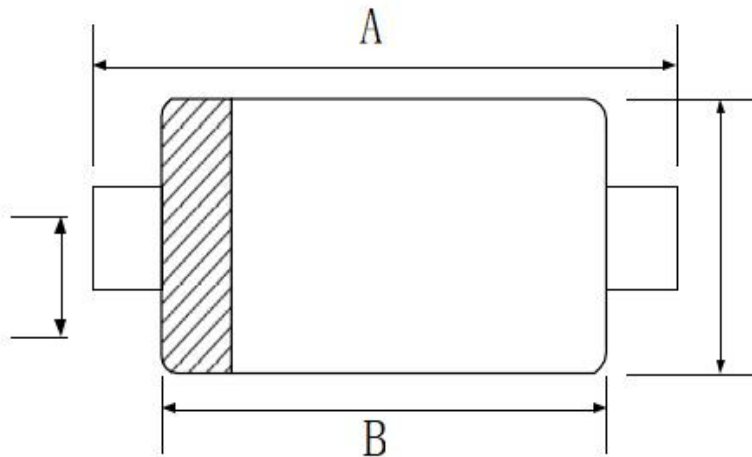
Reverse capacitance vs. reverse voltage



Ammissible repetitive peak forward current vs. pulse duration

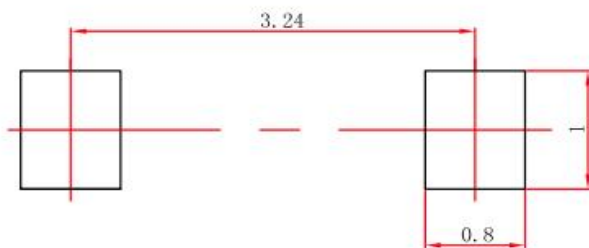


SOD-123 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	3.45	3.65	3.85
B	2.55	2.65	2.75
C	0.45	0.55	0.65
D	1.50	1.60	1.70
E	0.09	0.105	0.12
F	0.95	1.15	1.35

SOD-123 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

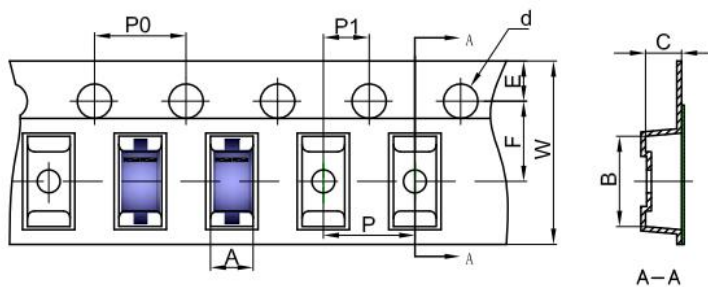
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Reel Taping Specifications For Surface Mount Devices-SOD-123

SOD-123 Embossed Carrier Tape

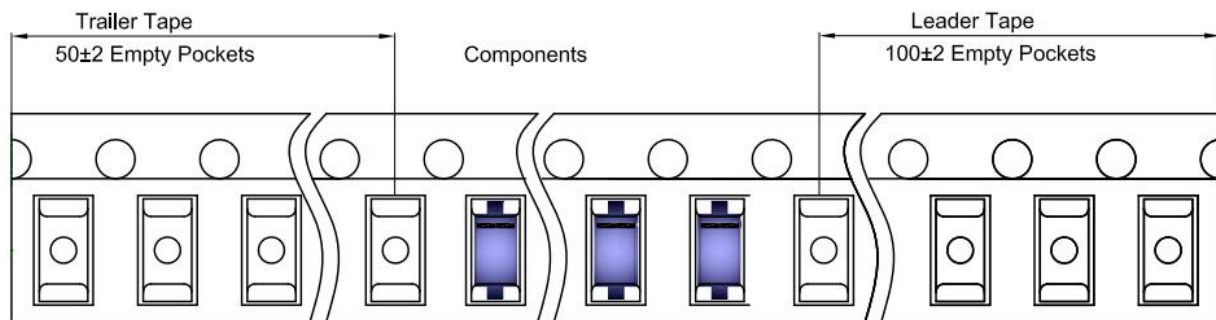


Packaging Description:

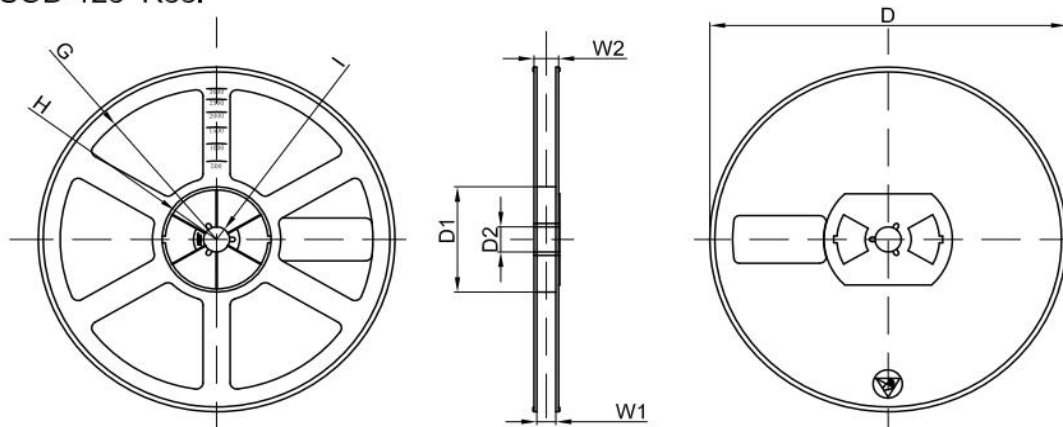
SOD-123 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-123	1.85	3.95	1.57	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOD-123 Tape Leader and Trailer



SOD-123 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"D1a	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	

Date of change	Rev #	revise content
2023/09/07	A/0	/