

1N4148WT

High Speed Switching Rectifiers



Voltage: 100 Volts

Power: 150 mW

Package: SOD-523

Features

- NH'S High Speed Switching Rectifier Chip Technology
- Fast Switching For High Efficiency
- Small Package
- Low Cost

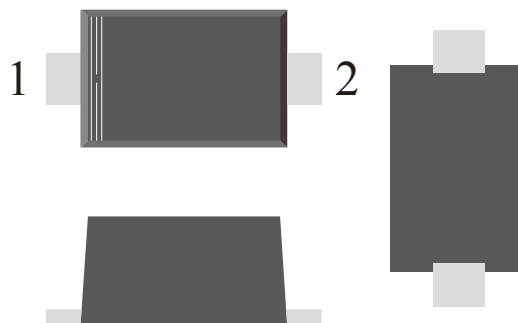
Mechanical Data

- **Case:** Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- **Polarity:** Look At The Diagram And Polarity On The Right
- **Terminals:** Tin Plated Leads,Solderable Per J-STD-002 And JESD22-B102

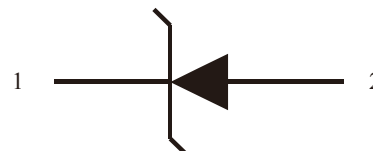
Typical Applications

- Small Signal Control Circuit
- Auxiliary Control Circuit
- Switch Mode Power Supplies (SMPS)
- Battery Management System(BMS)

Diagram:



Polarity:



Single Phase,Half Wave,60Hz,Resistive Or Inductive Load.For Capacitive Load,Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	100	V
Maximum RMS Voltag		V_{RMS}	75	V
Maximum Non-Repetitive Peak Reverse Voltage		V_{NRM}	100	V
Maximum Average Forward Rectified		$I_{F(AV)}$	150	mA
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	2	A
Power Dissipation		P_D	150	mW

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings			Unit
			Min.	Typ.	Max.	
Breakdown Voltage	$I_R=100\mu A$	BV_R	100	-	-	V
Maximum Instantaneous Forward Voltage	$I_F=1\text{ mA}$	V_F	-	-	0.715	V
	$I_F=10\text{ mA}$		-	-	0.855	
	$I_F=50\text{ mA}$		-	-	1.000	
	$I_F=150\text{ mA}$		-	-	1.250	
Reverse Leakage Current	25°C, $V_R=75\text{ V}$	I_{RRM}	-	-	1.00	uA
	25°C, $V_R=20\text{ V}$		-	-	25.00	nA
	150°C, $V_R=75\text{ V}$		-	-	50.00	uA
Typical Junction Capacitance	0 V,1MHz	C_T	-	-	2.00	pF
Maximum Reverse Recovery Time	$I_F=I_R=10\text{mA}, I_{RR}=1\text{mA}, R_L=100\Omega$	T_{rr}	-	-	4.00	nS

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings	Unit
Operating Junction Temperature Range		T_J	-55 to 150	°C
Storage Temperature Range		T_{STD}	-55 to 150	

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Typical Characteristics Curves

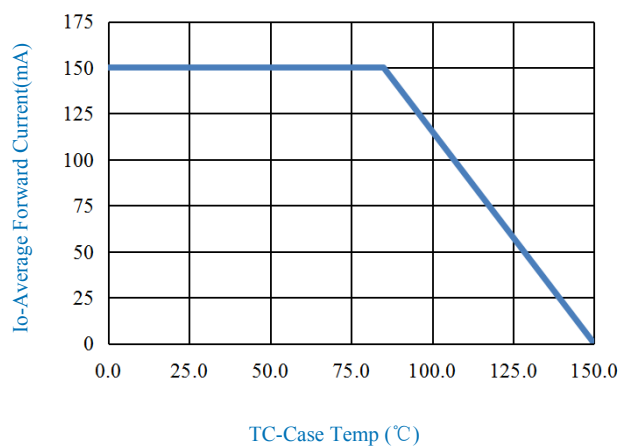


Fig.1-Forward Current Derating Curve

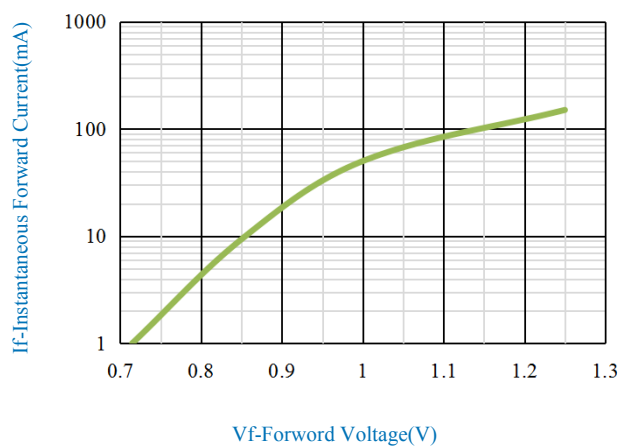


Fig.2-Typical Instantaneous Forward

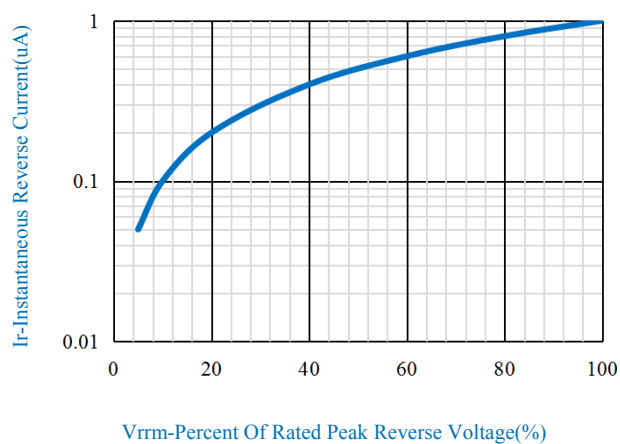


Fig.3-Typical Reverse Characteristics

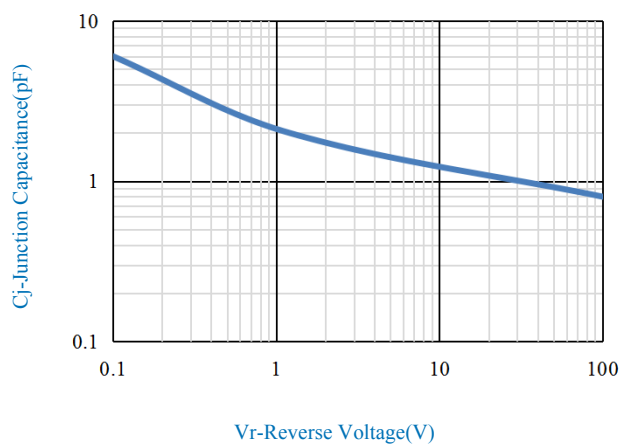


Fig.4- Typical Junction Capacitance

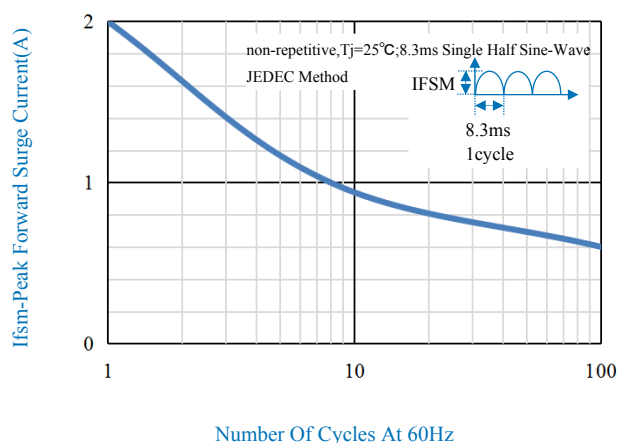


Fig.5-Max. Non-Repetitive Surge Current

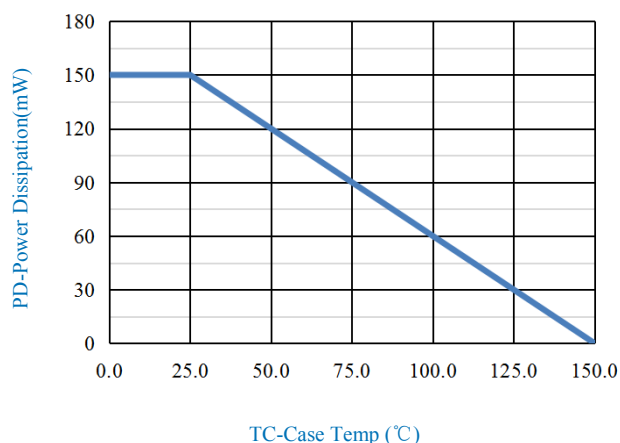


Fig.6-Power Dissipation Vs. Ambient Temp.

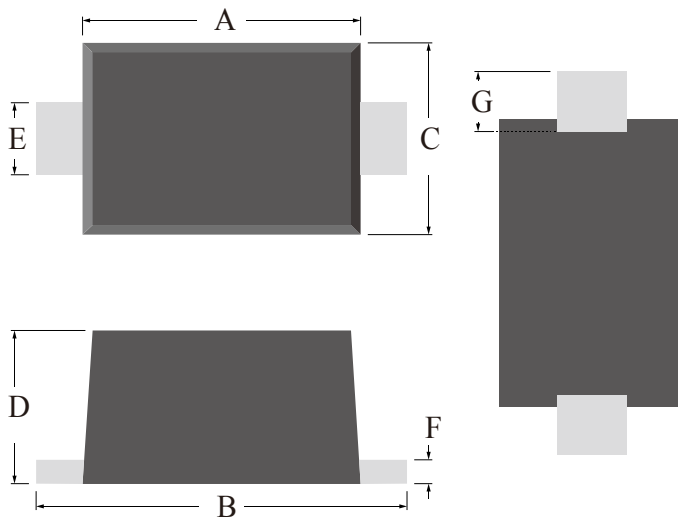
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OUTLINE DRAWINGS

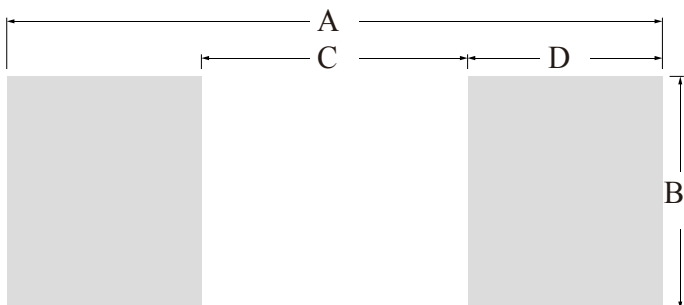
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OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.10	-	1.30	0.0433	-	0.0512
B	1.50	-	1.70	0.0591	-	0.0669
C	0.75	-	0.85	0.0295	-	0.0335
D	0.51	-	0.77	0.0201	-	0.0303
E	0.25	-	0.35	0.0098	-	0.0138
F	0.03	-	0.15	0.0012	-	0.0059
G	-	0.25	-	-	0.0098	-

RECOMMEDND LAYOUT DRAWINGS

SOD-523



OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	2.02	-	-	0.0795	-
B	-	0.70	-	-	0.0276	-
C	-	0.82	-	-	0.0323	-
D	-	0.60	-	-	0.0236	-

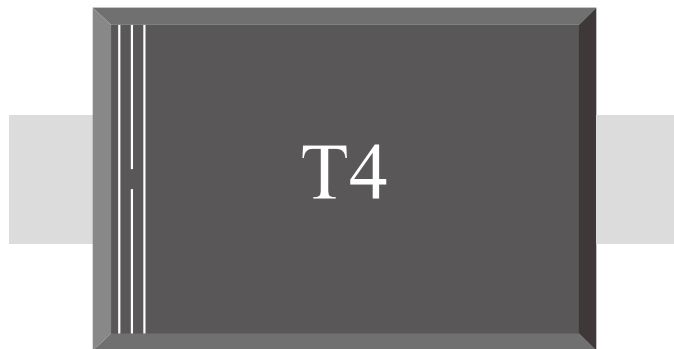
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MARKING

MARKING INSTRUCTION



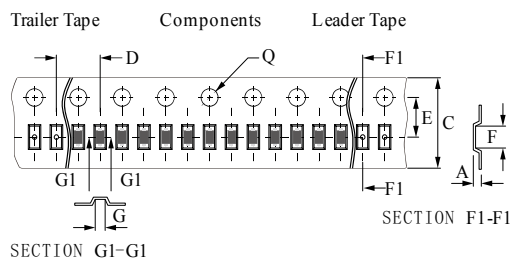
T4=mark

White band denotes cathode

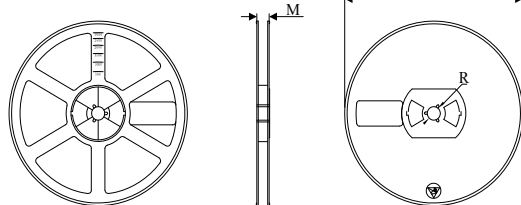
PACKAGING

SOD-523

TAPE



REEL



OUTLINE DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
TAPE						
A	0.63	0.73	0.83	0.0248	-	0.0327
C	7.70	8.00	8.30	0.3031	-	0.3268
D	1.90	2.00	2.10	0.0748	-	0.0827
E	3.40	3.50	3.60	0.1339	-	0.1417
F	1.84	1.94	2.04	0.0724	-	0.0803
G	0.80	0.90	1.00	0.0315	-	0.0394
Q Φ	1.40	1.50	1.60	0.0551	-	0.0630
REEL						
L Φ	176.00	-	180.00	6.929	-	7.087
R	12.00	-	14.00	0.4724	-	0.5512
M	11.00	-	13.00	0.4331	-	0.5118

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SOD-523	P1	0.02	7" Reel	8000	40000	480000

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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow

	Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
	Average ramp-up rate (T _{Smax} to T _P)	3°C/second max.	3°C/second max.
	Preheat-Temperature Min (T _{Smin}) -Temperature Max (T _{Smax}) -Time(t _s min to t _s max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
	Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
	Peak Temperature(T _P)	240 +0/-5 °C	260 +0/-5 °C
	Time within 5°C of actual peak temperature (t _p)	10-30 seconds	20-40 seconds
	Ramp down rate	6°C/second max.	6°C/second max.
	Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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Specification Revision History

Rev.	Date	Changed Items	Pre-Changed Content	Changed Content
A/1	2014-10-20	First Issue		
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