

1N914, 1N4148-1, 1N4531



Silicon Switching Diode

Rev. V3

Features

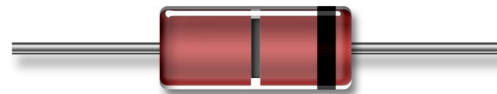
- Available in JAN, JANTX, and JANTXV per MIL-PRF-19500/116
- Metallurgically Bonded
- Hermetically Sealed
- Double Plug Construction

Maximum Ratings

Operating & Storage Temperature: -65°C to +175°C

Operating Current: 200 mA @ T_A = +25°C

Derating Factor: 1.14 mA/°C above T_A = +25°C Surge Current A: 2.00 A, sinewave, Pw = 8.3 ms



Electrical Specifications @ T_A = +25°C (unless otherwise specified)

JEDEC TYPE#	V _{BR} @ 100 μA	V _{RWM}	I _O (PCB) T _A = +75°C (1)	V _{F1} I _F = 10 mA	V _{F2} I _F = 100* mA	T _{rr} ¹	I _{R1} @ 20 Vdc	I _{R2} @ 75 Vdc	I _{R3} @ 20 Vdc T _A = 150°C	I _{R4} @ 75 Vdc T _A = 150°C	Capacitance @ 0 V	Capacitance @ 1.5 V
	Volts	Volts (pk)	mA	Vdc	Vdc	nsec	nA	nA	μA	μA	pF	pF
1N914	100	75	200	0.8	1.2	5	25	500	35	75	4.0	2.8
1N4148-1	100	75	200	0.8	1.2	5	35	500	35	75	4.0	2.8
1N4531	100	75	200	0.8	1.2	5	35	500	35	75	4.0	2.8

1. I_F = I_R = 10 mA, R_L = 100 ohms.

* For 1N914 V_{F2} is measured at I_F = 50 mA dc

Thermal Characteristics

Parameter	Absolute Maximum
R _{θJL} (2) (L = .375 inch)	250°C/W
R _{θJA} (PCB) (2) (3)	325°C/W

(2) See figures 11, 12, and 13 of MIL-PRF-19500/116 for thermal impedance curves.

(3) T_A = +75°C for axial leaded devices on printed circuit board. PCB = FR4- .0625 inch (1.59 mm) 1 layer, 1 oz Cu, horizontal, in still air; pads for axial device = .092 inch (2.34mm) diameter, strip = 0.30 inch (0.76 mm) x 1 inch (25.4 mm) long, lead length L ≤ 0.187 inch (≤ 4.75 mm); R_{θJA} with a defined PCB thermal resistance condition included, is measured at I_O = 200 mA dc.

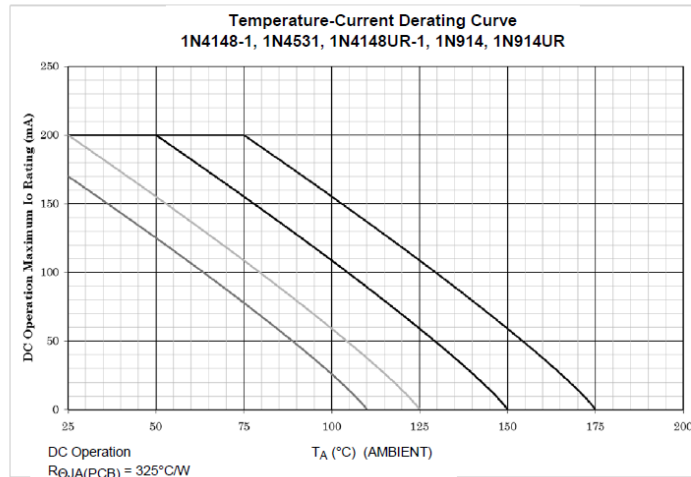
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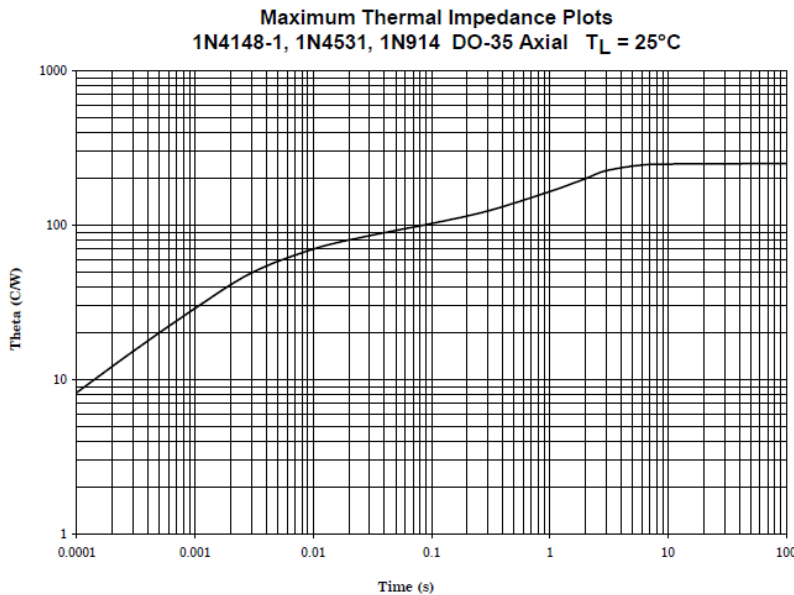
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Graphs



NOTES:

1. This is the true inverse of the worst case thermal resistance value. All devices are capable of operating at $\leq T_J$ specified on this curve. Any parallel line to this curve will intersect the appropriate current for the desired maximum T_J allowed.
2. Derate design curve constrained by the maximum junction temperature ($T_J \leq +175^{\circ}\text{C}$) and current rating specified. (See 1.3.)
3. Derate design curve chosen at $T_J \leq +150^{\circ}\text{C}$, where the maximum temperature of electrical test is performed.
4. Derate design curves chosen at $T_J \leq +125^{\circ}\text{C}$, and 110°C to show current rating where most users want to limit T_J in their application.



$R_{\theta JL} = 250^{\circ}\text{C/W}$

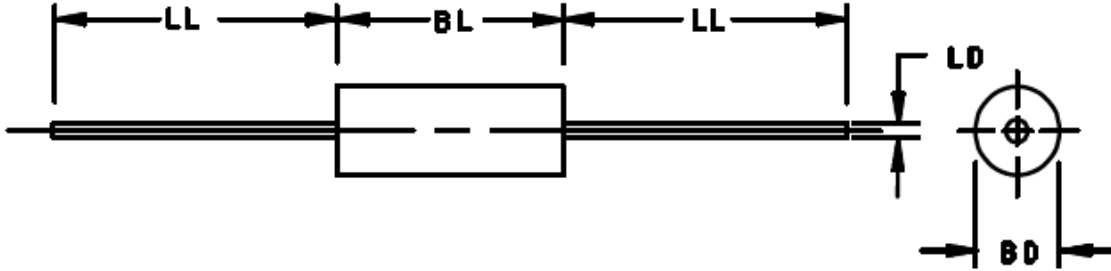
NOTE: $Z_{\theta JX} = 70^{\circ}\text{C/W}$ maximum at $t_H = 10$ ms.

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Outline Drawing (DO-35, DO-34)



Types	Dimensions				
	Ltr	Inches		Millimeters	
		Min	Max	Min	Max
1N4148-1 1N914 (DO-35)	BD	.056	.075	1.42	1.91
	BL	.140	.180	3.56	4.57
	LD	.018	.022	0.46	0.56
1N4531 (DO-34)	LL	1.000	1.500	25.40	38.10
	BD	.050	.075	1.27	1.90
	BL	.080	.120	2.03	3.05
	LD	.018	.022	0.46	0.56
	LL	1.000	1.500	25.40	38.10

NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.

TYPES 1N4148-1, 1N914, AND 1N4531.

FIGURE 1. Physical dimensions (DO-34 and DO-35).

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