

# 1N914UR, 1N4148UR-1, 1N4531UR

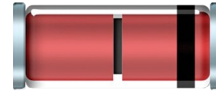


## Silicon Switching Diode

Rev. V1

### Features

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

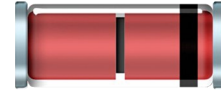


### Maximum Ratings

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

Operating Current: 200 mA @  $T_A = +25^\circ\text{C}$

Derating Factor: 1.14 mA/°C above  $T_A = +25^\circ\text{C}$  Surge Current A: 2.00 A, sinewave,  $P_w = 8.3$  ms



### Electrical Specifications @ $T_A = +25^\circ\text{C}$ (unless otherwise specified)

JEDEC TYPE#	$V_{BR}$ @ 100 $\mu\text{A}$	$V_{RWM}$	$I_{O(PCB)}$ $T_A = +75^\circ\text{C}$ (1)	$V_{F1}$ $I_F = 10$ mA	$V_{F2}$ $I_F = 100^*$ mA	$T_{rr}$ <sup>4</sup>	$I_{R1}$ @ 20 Vdc	$I_{R2}$ @ 75 Vdc	$I_{R3}$ @ 20 Vdc $T_A = 150^\circ\text{C}$	$I_{R4}$ @ 75 Vdc $T_A = 150^\circ\text{C}$	Capacitance @ 0 V	Capacitance @ 1.5 V
	Volts	Volts (pk)	mA	Vdc	Vdc	nsec	nA	nA	$\mu\text{A}$	$\mu\text{A}$	pF	pF
1N914UR	100	75	200	0.8	1.2	5	25	500	35	75	4.0	2.8
1N4148UR-1	100	75	200	0.8	1.2	5	35	500	35	75	4.0	2.8
1N4531UR	100	75	200	0.8	1.2	5	35	500	35	75	4.0	2.8

4.  $I_F = I_R = 10$  mA,  $R_L = 100$  ohms.

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

### Thermal Characteristics

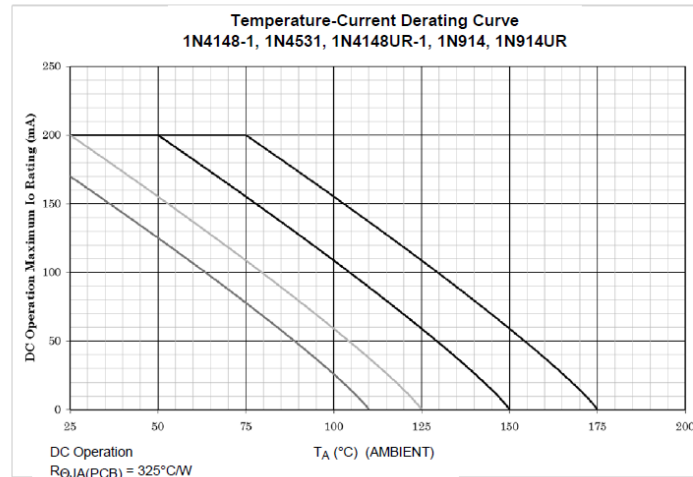
Parameter	Absolute Maximum
$R_{\theta JEC}$ (2)	100°C/W

(1) For temperature-current derating curves, see figures 9 and 10.

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

(3)  $T_A = +75^\circ\text{C}$  for MELF (UR) devices on printed circuit board. PCB = FR4- .0625 inch (1.59 mm) 1 layer, 1 oz Cu, horizontal, in still air; pads for (UR) device = .061 inch (1.55 mm) x .105 inch (2.67 mm).

### 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  $110^{\circ}\text{C}$  to show current rating where most users want to limit  $T_J$  in their application.

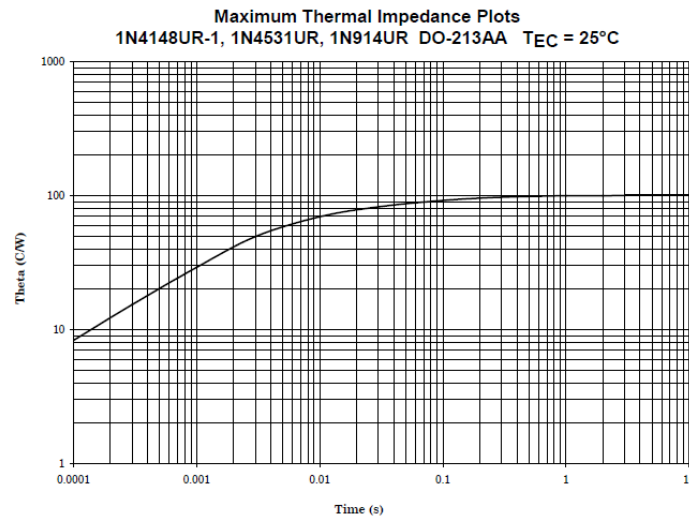
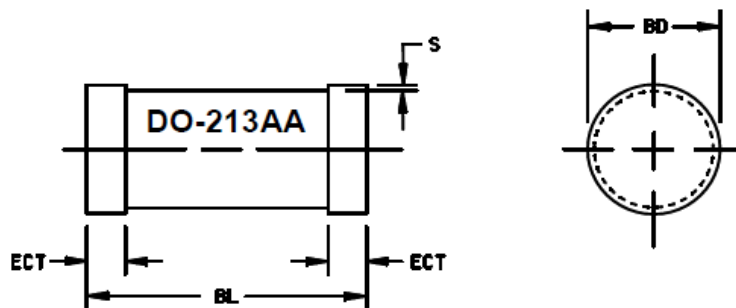


FIGURE 12. Thermal impedance (MELF surface mount).

## Outline Drawing (DO-213AA)



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	.063	.067	1.60	1.70
BL	.130	.146	3.30	3.71
ECT	.016	.022	0.41	0.56
S	.001		0.03	

**NOTES:**

1. Dimensions are in inches. Millimeters are given for general information only.
2. Dimensions are pre-solder dip.
3. Referencing to dimension S, minimum clearance of glass body to mounting surface on all orientations.
4. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi$ x symbology.

TYPES 1N914UR, 1N4148UR-1, AND 1N4531UR.

FIGURE 2. Physical dimensions (DO-213AA).

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