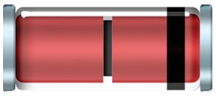
1N914UR, 1N4148UR-1, 1N4531UR

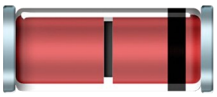
Silicon Switching Diode

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°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} 4	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
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

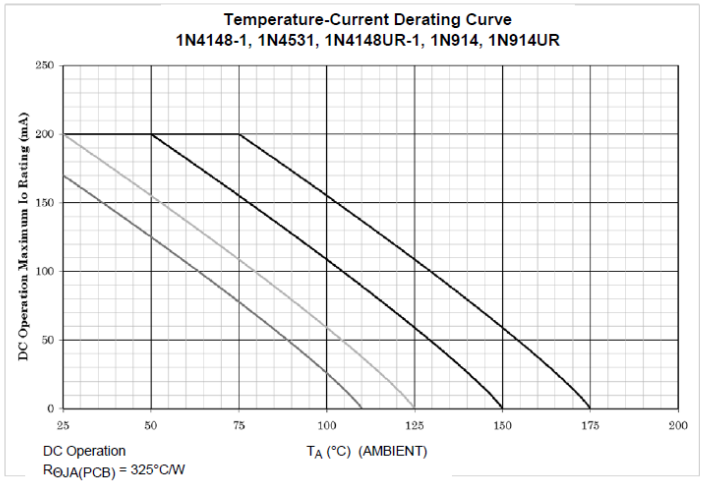
4. I_F = I_R = 10 mA, R_L = 100 ohms.
* For 1N914 V_{F2} is measured at I_F = 50 mA dc

Thermal Characteristics

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

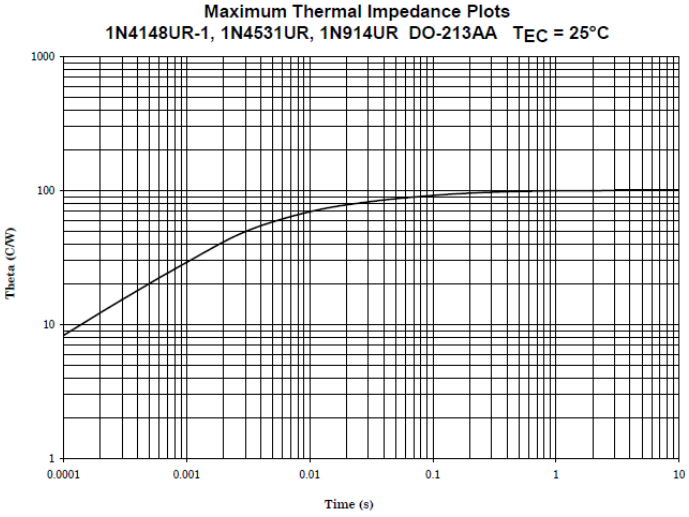
(1) For temperature-current derating curves, see figures 9 and 10.
(2) See figures 11, 12, and 13 of MIL-PRF-19500/116 for thermal impedance curves.
(3) T_A = +75°C for MELF (UR) devices on printed circuit board. PCB = FR4- .0625 inch (1.59 mm) 1 layer,1 oz Cu, horizontal, in still air; pads for (UR) 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 ≤ 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 ≤ +175°C) and current rating specified. (See 1.3.)
3. Derate design curve chosen at T_J ≤ +150°C, where the maximum temperature of electrical test is performed.
4. Derate design curves chosen at T_J ≤ +125°C, and 110°C to show current rating where most users want to limit T_J in their application.

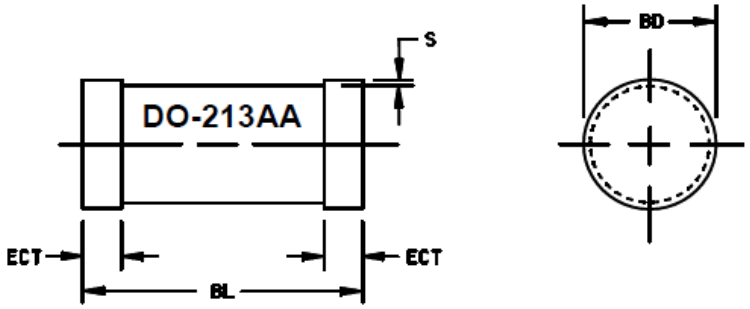


$R_{\theta JEC}$ = 100°C/W

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

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 Φx symbology.

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

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