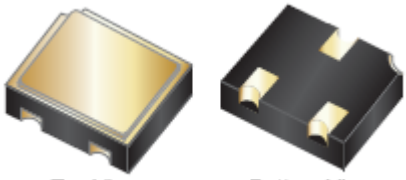
1N66xxUB Series

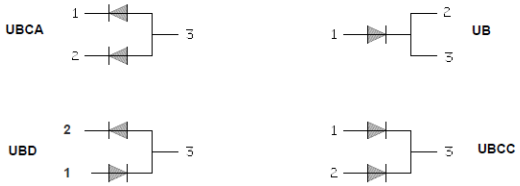
Silicon Switching Diode

Rev. V6

Features

- JAN, JANTX, JANTXV and JANS Qualification is available per MIL-PRF-19500/578/609 (see part nomenclature for all available options)
- Surface Mount Equivalent of JEDEC registered 1N6638 - 1N6643
- Very Low Capacitance
- Very Fast Switching Speeds with Minimal Reverse Recovery Times
- Unidirectional as well as Doubler, Common Anode and Common Cathode Polarities are Available
- RoHS Compliant by Design





Description

The 1N66xxUB Series of switching/signal diodes feature ceramic bodied construction for military grade products per MIL-PRF-19500/578/609. These small, low capacitance diodes, with very fast switching speeds, are featured in a surface mount UB package with various polarities available.

These devices are ideally suited for high frequency data lines, RS-232 & RS-422 interface networks, and Ethernet 10 Base T, LAN & computers.

Electrical Specifications

Part # (add UB, UBCA, UBCC, UBD as per part nomenclature)	V_{BR} @ I_R		V_{RWM}	V_{FR} / t_{FR} @ I_F = 200 mA		C_T1 V_R = 0.0 V	C_T2 V_R = 1.5 V	trr I_R= 10 mA, I_F = 10 mA
	V(pk)	µA	V(pk)	V(pk)	ns	pF	pF	ns
1N6638	150	100	125	5	20	2.5	2.0	4.5
1N6639	100	10	75	5	10	2.5	—	4
1N6640	75	10	50	5	10	2.5	—	4
1N6641	75	10	50	5	10	3.0	—	5
1N6642	100	100	75	5	20	5.0	2.8	5
1N6643	75	100	50	5	20	5.0	2.8	6

1N66xxUB Series

Silicon Switching Diode

Rev. V6

Electrical Specifications

Part # (add UB, UBCA, UBCC, UBD as per part nomenclature)	I_R				V_F @ I_F				I_F
	V_R = 20 V	V_R = V_{RWM}	V_R = 20 V T_A = +150° C	V_R = V_{RWM}, T_A = +150° C			T_A = +150°C	T_A = -55°C	
	nA	nA	µA	µA	V	V	V	V	mA
					Min.	Max.	Max.	Max.	(pulsed)
1N6638	35	500	50	100	—	1.1 0.8	- 0.65	1.2 —	200 10
1N6639	—	100	—	90	—	1.2		1.3	500
1N6640	—	100	—	90	0.54 0.76 0.82 0.87	0.62 0.86 0.92 1.0	—	— — — 1.1	1 50 100 200
1N6641	—	100	—	90	0.87	1.1	—	1.2	200
1N6642	25	500	50	100	—	0.8 1.2	0.8 —	— 1.2	10 100
1N6643	50	500	75	100	—	0.8 1.2	0.8 —	— 1.4	10 100

Absolute Maximum Ratings @ +25°C (unless otherwise specified)

Part # (add UB, UBCA, UBCC, UBD as per part nomenclature)	Breakdown Voltage	Working Peak Reverse Voltage	Average Rectified Current @ T_A = +75°C[1]	Non-Repetitive Sinusoidal Surge Current (tp = 8.3 ms)	Junction & Storage Temperature Range
1N6638	150	125	300 mA	2.5 A (pk)	-65°C to +200°C
1N6639	100	75			
1N6640	75	50			
1N6641	75	50			
1N6642	100	75			
1N6643	75	50			

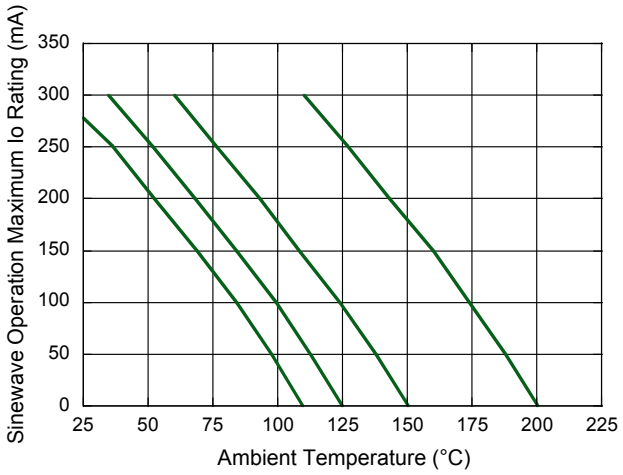
1. See derating curve.

Thermal Characteristics[2]

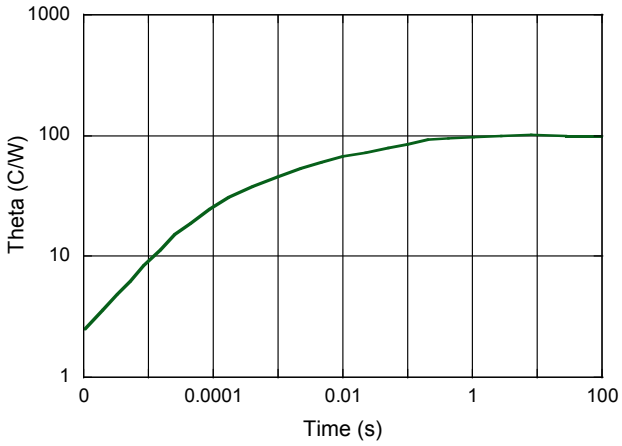
Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	325°C/W
Thermal Resistance, Junction to Solder Pad	$R_{\theta JSP}$	100°C/W

2. See thermal impedance curve.

Temperature - Current Derating

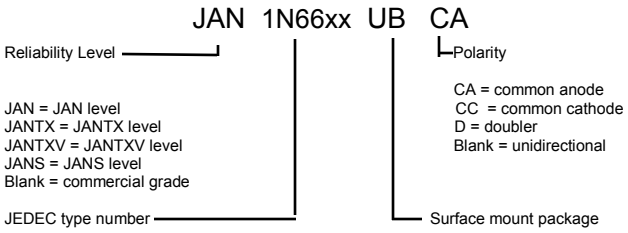


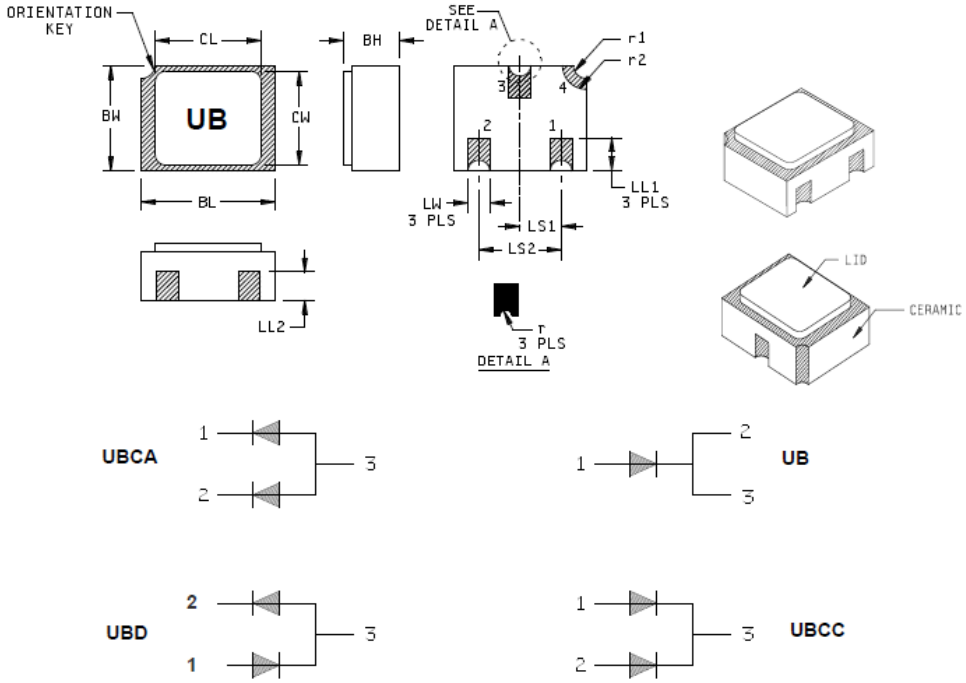
Thermal Impedance



Sinewave Operation 50% Duty Cycle, $R_{\theta JA}$ (PCB) = 325°C/W.
Maximum Finish-Alloy Temperature = 175°C

Parts Nomenclature





Symbol	Dimensions				Symbol	Dimensions			
	Inches		Millimeters			Inches		Millimeters	
	Min	Max	Min	Max		Min	Max	Min	Max
BH	.046	.056	1.17	1.42	LS1	.035	.039	0.89	0.99
BL	.115	.128	2.92	3.25	LS2	.071	.079	1.80	2.01
BW	.085	.108	2.16	2.74	LW	.016	.024	0.41	0.61
CL		.128		3.25	r		.008		0.20
CW		.108		2.74	r1		.012		0.31
LL1	.022	.038	0.56	0.97	r2		.022		0.56
LL2	.017	.035	0.43	0.89					

NOTES:
1. Dimensions are in inches. Millimeters are given for general information only.
2. Ceramic package only.
3. Hatched areas on package denote metallized areas. Pad 4 = shielding, connected to the lid.
4. Dimensions are pre-solder dip.
5. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

FIGURE 3. Physical dimensions, surface mount (UB version).