RoHS
Available on commercial versions

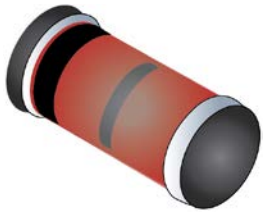
200 and 500 mA Schottky Barrier Rectifier

Qualified per MIL-PRF-19500/610

Qualified Levels:*
JAN, JANTX, JANTXV and JANS

DESCRIPTION

The 1N6675UR-1 through 1N6677UR-1 series of Schottky barrier rectifiers provides a selection of 200 or 500 mA ratiings in surface mount, hard glass DO-213AA MELF package. The 1N6677UR-1 is also available in JAN, JANTX, JANTXV, and JANS military qualifications.



DO-213AA MELF Package

Important: For the latest information, visit our website http://www.microsemi.com.

FEATURES

- JEDEC registered 1N6675 through 1N6677 number series.
- Hermetically sealed.
- Metallurgically bonded.
- Double plug construction.
- *JAN, JANTX, JANTXV and JANS qualifications are available per MIL-PRF-19500/610 on 1N6677UR-1 only.
- RoHS compliant versions are available on all commercial types.

Also available in:

DO-35 (DO-204AH) package
(axial-leaded)
1N6675-1 – 1N6677-1

APPLICATIONS / BENEFITS

- Leadless package for surface mounting.
- Ideal for high-density situations.
- Non-sensitive to ESD per MIL-STD-750 method 1020.

MAXIMUM RATINGS @ T_A = 25 ºC unless otherwise stated

Parameters/Test Conditions	Symbol	Value	Unit
Junction Temperature	T_J	-65 to +125	ºC
Storage Temperature	T_{STG}	-65 to +150	ºC
Thermal Resistance, Junction-to-End Cap	$R_{\Theta JEC}$	100	ºC/W
Surge Peak Forward Current at 8.3 ms half-sine wave for 1N6677UR-1	I_{FSM}	5	A (pk)
Average Rectified Output Current: 1N6675UR-1 – 1N6677UR-1 (1) CDLL0.5A20 – CDLL0.5A40	I_O	 200 500	mA
Solder Temperature @ 10 s		260	ºC

NOTES: 1. See Figure 1 for derating.

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MECHANICAL and PACKAGING

- CASE: Hermetically sealed glass case package.
- TERMINALS: Tin/lead plated or RoHS compliant matte-tin (commercial grade only) over copper clad steel. Solderable per MIL-STD-750, method 2026.
- POLARITY: Cathode end is banded.
- MOUNTING: The axial coefficient of expansion (COE) of this device is approximately +6PPM/°C. The COE of the mounting surface system should be selected to provide a suitable match with this device.
- MARKING: Part number.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: Approximately 0.04 grams.
- See Package Dimensions on last page.

PART NOMENCLATURE

1N6675UR-1 – 1N6677UR-1:

1N6675 UR -1 (e3)

JEDEC type number
(see Electrical Characteristics table)

MELF Surface Mount

RoHS Compliance
e3 = RoHS compliant
Blank = non-RoHS compliant

Metallurgically Bonded

1N6677UR-1 only:

JAN 1N6677 UR -1 (e3)

Reliability Level*
JAN = JAN level
JANTX = JANTX level
JANTXV = JANTXV level
JANS = JANS level

JEDEC type number
(see Electrical Characteristics table)

RoHS Compliance
e3 = RoHS compliant (on commercial grade only)
Blank = non-RoHS compliant

Metallurgically Bonded

MELF Surface Mount

CDLL0.5A20 – CDLL0.5A40:

CDLL 0.2A 20 (e3)

Microsemi Designation

Amp Rating

Working Peak Reverse Voltage Rating (V_{RWM})

RoHS Compliance
e3 = RoHS compliant
Blank = non-RoHS compliant

SYMBOLS & DEFINITIONS	
Symbol	**Definition**
C	Capacitance: The capacitance in pF at a frequency of 1 MHz and specified voltage.
f	frequency
I_R	Reverse Current: The dc current flowing from the external circuit into the cathode terminal at the specified voltage V_R.
I_{FSM}	Surge Peak Forward Current: The forward current including all nonrepetitive transient currents but excluding all repetitive transients (ref JESD282-B)
I_O	Average Rectified Output Current: The Output Current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
$V_{(BR)}$	Breakdown Voltage: A voltage in the breakdown region.
V_F	Forward Voltage: A positive dc anode-cathode voltage the device will exhibit at a specified forward current.
V_R	Reverse Voltage: A positive dc cathode-anode voltage below the breakdown region.
V_{RWM}	Working Peak Reverse Voltage: The peak voltage excluding all transient voltages (ref JESD282-B). Also sometimes known historically as PIV.

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise specified

200 mA options:

TYPE NUMBER (Note 1)	WORKING PEAK REVERSE VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT I_{RM} @ V_{RM}		MAXIMUM CAPACITANCE @ V_R = 0 VOLTS f = 1.0 MHz
	V_{RWM}	V_F @ 20 mA	V_F @ 200 mA	V_F @ 630 mA	T_J = +25 °C	T_J = 100 °C	C_T
	V (pk)	Volts	Volts	Volts	µA	mA	pF
1N6675UR-1	20	0.37	0.50	0.70	5.0	0.60	50
1N6676UR-1	30	0.37	0.50	0.70	5.0	0.60	50
1N6677UR-1	40	0.37	0.50	0.70	5.0	0.60	50

NOTE: 1. These numbers can also be ordered as CDLL6675 or CDLL0.2A20, CDLL6676 or CDLL0.2A30, and CDLL6677 or CDLL0.2A40.

500 mA options:

TYPE NUMBER	WORKING PEAK REVERSE VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT I_{RM} @ V_{RM}		MAXIMUM CAPACITANCE @ V_R = 0 VOLTS f = 1.0 MHz
	V_{RWM}	V_F @ 100 mA	V_F @ 500 mA	T_J = +25 °C	T_J = 100 °C	C_T
	V (pk)	Volts	Volts	µA	mA	pF
CDLL0.5A20	20	0.50	0.65	10.0	1.0	50
CDLL0.5A30	30	0.50	0.65	10.0	1.0	50
CDLL0.5A40	40	0.50	0.65	10.0	1.0	50

GRAPHS

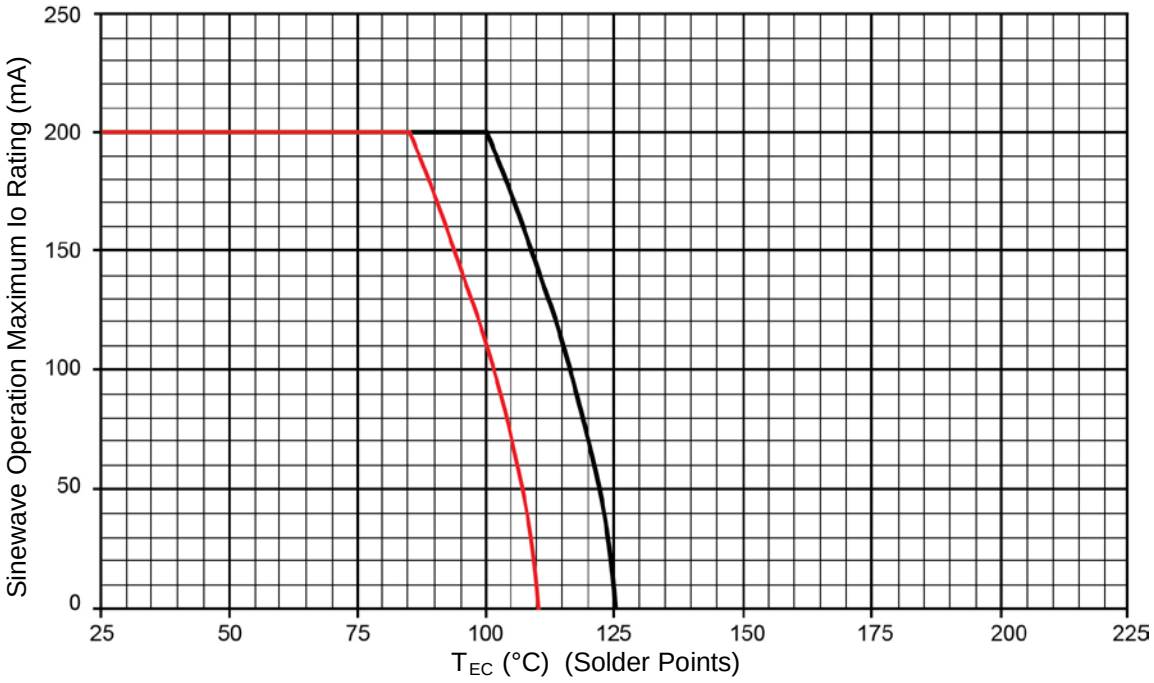


FIGURE 1
Temperature power derating for 1N6677UR-1

NOTES:

1. Maximum theoretical derate design curve. 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 power for the desired maximum T_J allowed.
2. Derate design curve constrained by the maximum junction temperatures and power rating specified. (See Maximum Ratings.)
3. Derate design curve chosen at T_J ≤ 110 °C to show power rating where most users want to limit T_J in their application.

GRAPHS

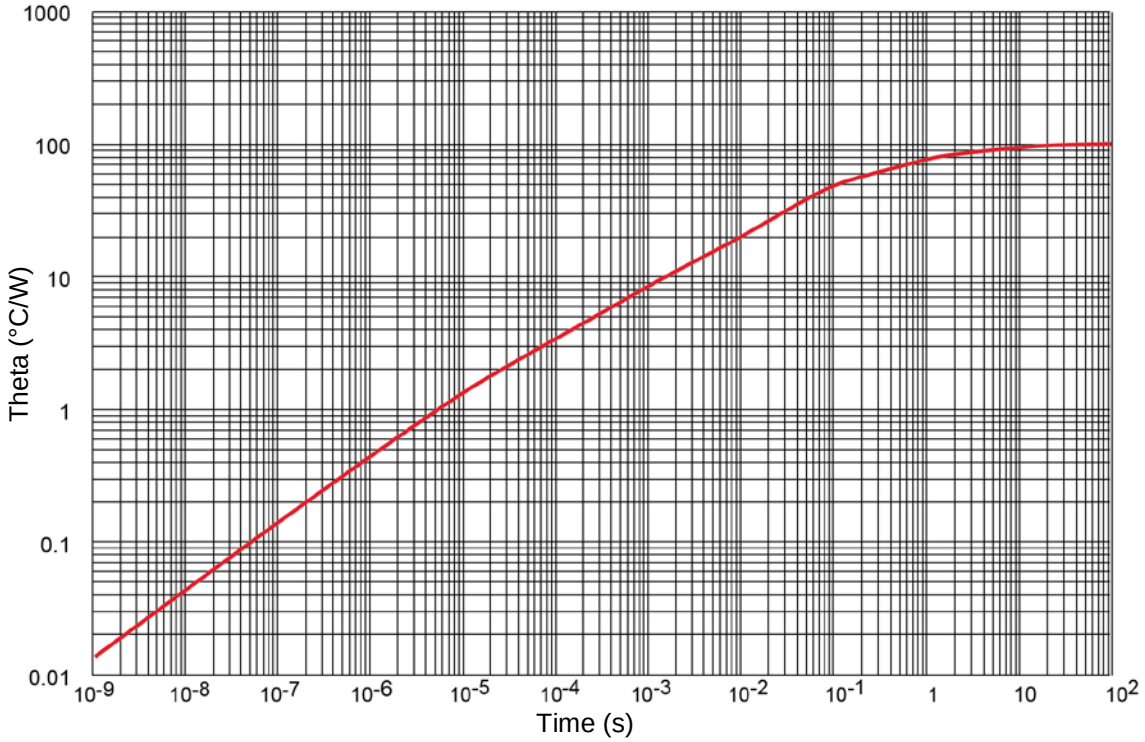
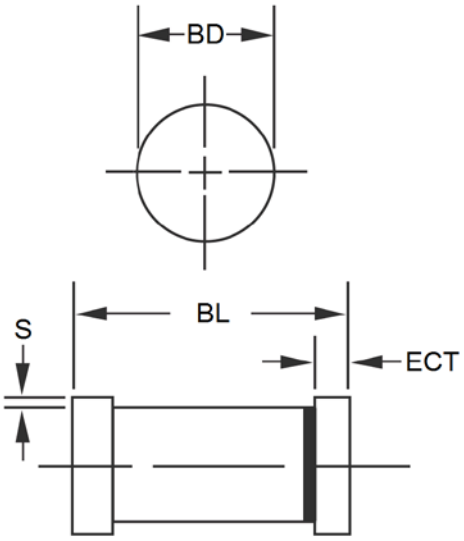


FIGURE 2
Thermal impedance curve for 1N6677UR-1

PACKAGE DIMENSIONS

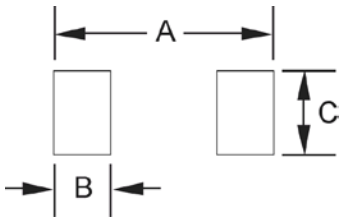


DIM	INCH		MILLIMETERS	
	MIN	MAX	MIN	MAX
BD	0.063	0.067	1.60	1.70
BL	0.130	0.146	3.30	3.71
ECT	0.016	0.022	0.41	0.56
S	0.001	-	0.03	-

NOTES:

1. Dimensions are in inches. Millimeters are given for 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.

PAD LAYOUT



	INCH	mm
A	0.200	5.08
B	0.055	1.40
C	0.080	2.03