



## 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 ratings in surface mount, hard glass DO-213AA MELF package. The 1N6677UR-1 is also available in JAN, JANTX, JANTXV, and JANS military qualifications.

**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.

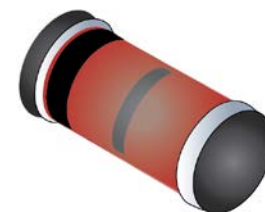
### APPLICATIONS / BENEFITS

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

### MAXIMUM RATINGS @ $T_A = 25^\circ\text{C}$ unless otherwise stated


Parameters/Test Conditions	Symbol	Value	Unit
Junction Temperature	$T_J$	-65 to +125	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-65 to +150	$^\circ\text{C}$
Thermal Resistance, Junction-to-End Cap	$R_{\theta JEC}$	100	$^\circ\text{C/W}$
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 <sup>(1)</sup> CDLL0.5A20 – CDLL0.5A40	$I_O$	200 500	mA
Solder Temperature @ 10 s		260	$^\circ\text{C}$

**NOTES:** 1. See [Figure 1](#) for derating.



**DO-213AA MELF  
Package**

Also available in:

 **DO-35 (DO-204AH)**  
package  
(axial-leaded)  
[1N6675-1 – 1N6677-1](#)

#### **MSC – Lawrence**

6 Lake Street,  
Lawrence, MA 01841  
1-800-446-1158  
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Fax: (978) 689-0803

#### **MSC – Ireland**

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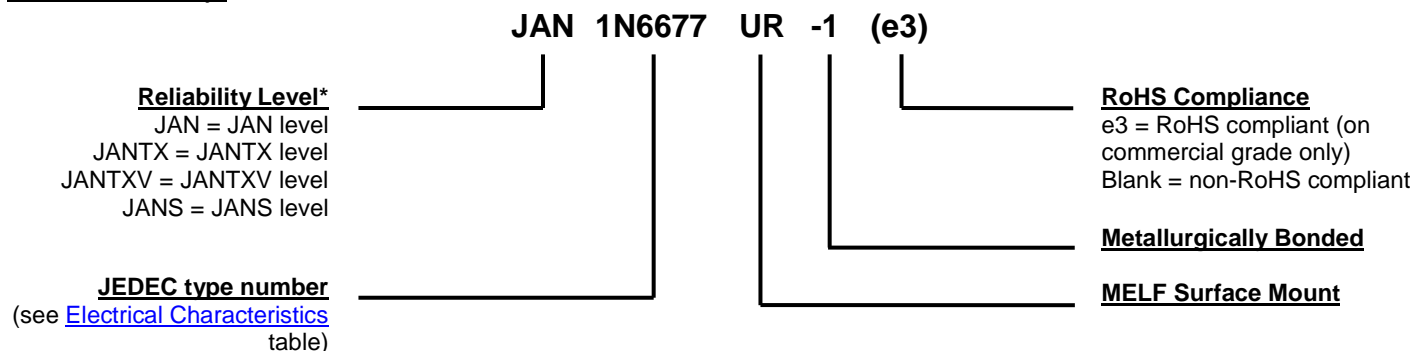
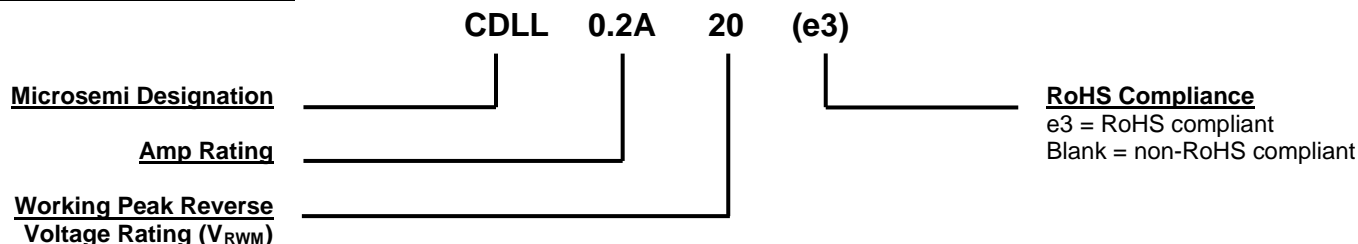
**Website:**

[www.microsemi.com](http://www.microsemi.com)

**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:

1N6677UR-1 only:

CDLL0.5A20 – CDLL0.5A40:


**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.

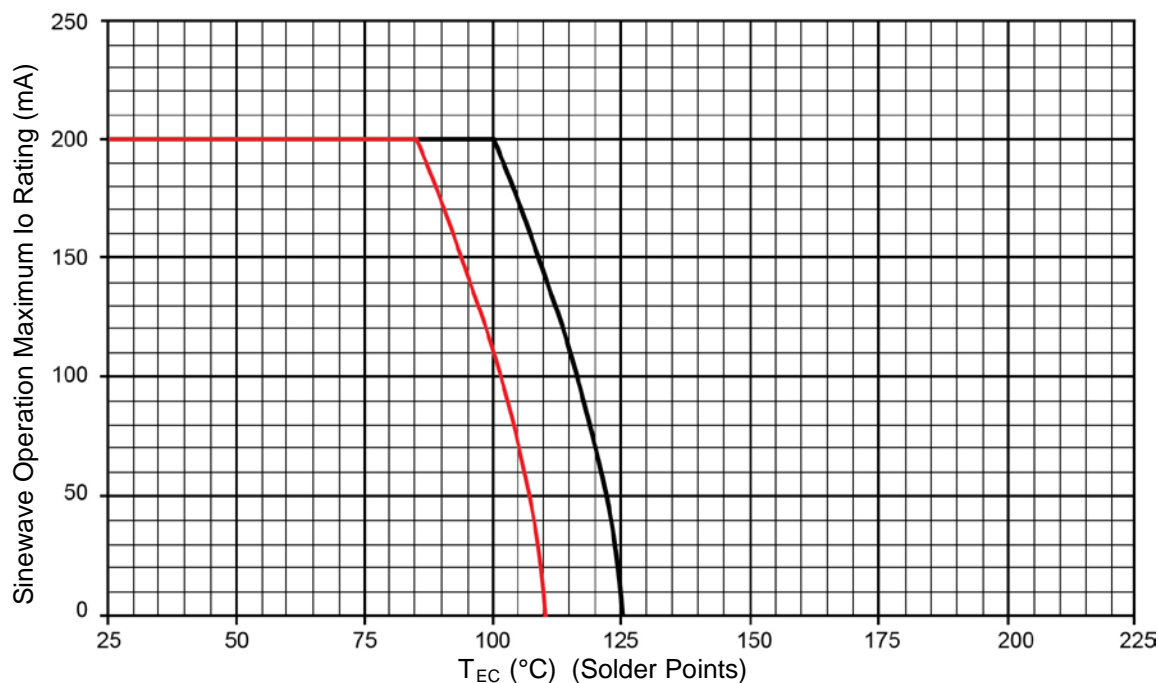
**ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise specified**
**200 mA options:**

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:**

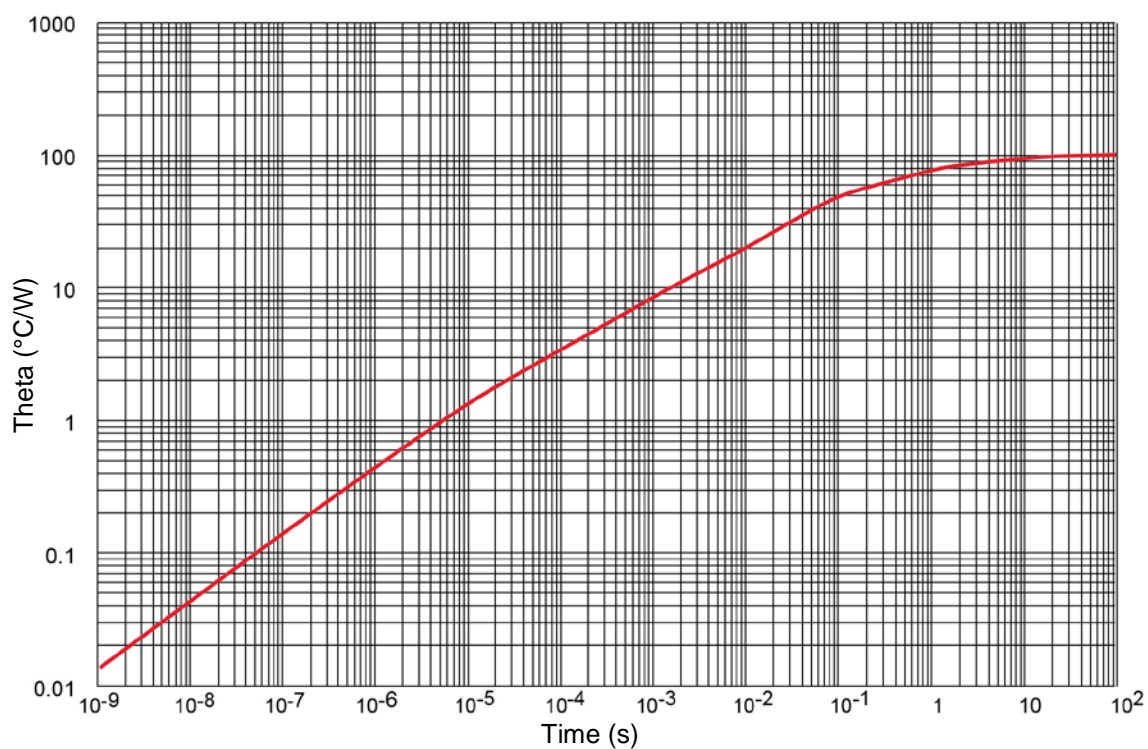
TYPE NUMBER	WORKING PEAK REVERSE VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT $I_{RM}$ @ $V_{RM}$		MAXIMUM CAPACITANCE @ $V_R = 0$ VOLTS $f = 1.0$ MHz
	$V_{RWM}$	$V_F$ @ 100 mA	$V_F$ @ 500 mA	$T_J = +25$ °C	$T_J = 100$ °C	$C_T$
	V (pk)	Volts	Volts	µA	mA	pF
CDLL0.5A20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


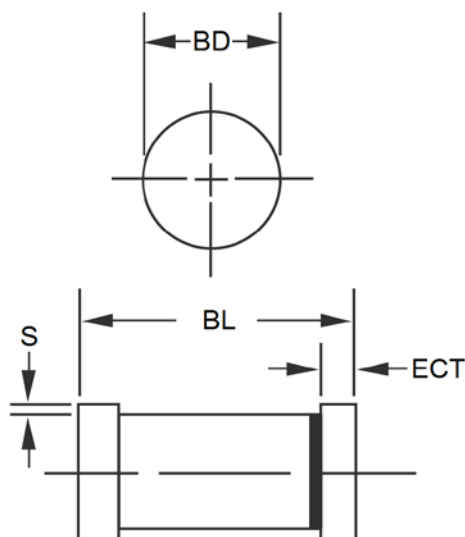
**FIGURE 1**  
Temperature power derating for 1N6677UR-1

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

**GRAPHS**

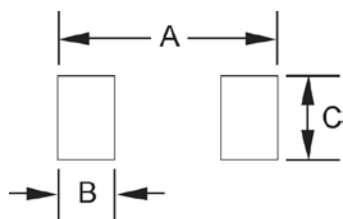
**FIGURE 2**  
Thermal impedance curve for 1N6677UR-1

**PACKAGE DIMENSIONS**


DIM	INCH		MILLIMETERS	
	MIN	MAX	MIN	MAX
<b>BD</b>	0.063	0.067	1.60	1.70
<b>BL</b>	0.130	0.146	3.30	3.71
<b>ECT</b>	0.016	0.022	0.41	0.56
<b>S</b>	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  $\Phi$ x symbology.

**PAD LAYOUT**


	INCH	mm
<b>A</b>	0.200	5.08
<b>B</b>	0.055	1.40
<b>C</b>	0.080	2.03

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[Jantx1N6677UR-1](#) [JANS1N6677UR-1](#)