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200 and 500 mA Schottky Barrier Rectifiers

Qualified per MIL-PRF-19500/610

Qualified Levels*:
JAN, JANTX,
JANTXV and JANS

DESCRIPTION

The 1N6675-1 through 1N6677-1 series of Schottky barrier rectifiers provides a selection of 200 or 500 mA ratings in an axial-leaded, hard glass DO-35 package. The 1N6677-1 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 qualification are available per MIL-PRF-19500/610 for 1N6677-1 only.
- RoHs compliant versions are available on all commercial types.

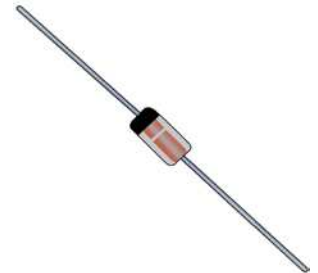
APPLICATIONS / BENEFITS

- Flexible axial-lead mounting terminals.
- 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-Lead @ lead length = 0.375 inch (9.52 mm) from body	$R_{\theta JL}$	250	$^\circ\text{C}/\text{W}$
Surge Peak Forward Current at 8.3 ms half-sine wave for 1N6677-1	I_{FSM}	5	A (pk)
Average Rectified Output Current: 1N6675-1 – 1N6677-1 ⁽¹⁾ DSB0.5A20 – DSB0.5A40	I_O	200 500	mA
Solder Temperature @ 10 s		260	$^\circ\text{C}$

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



**DO-35 (DO-204AH)
Package**

Also available in:

 **DO-213AA MELF**
(surface mount)
[1N6675UR-1 – 1N6677UR-1](#)

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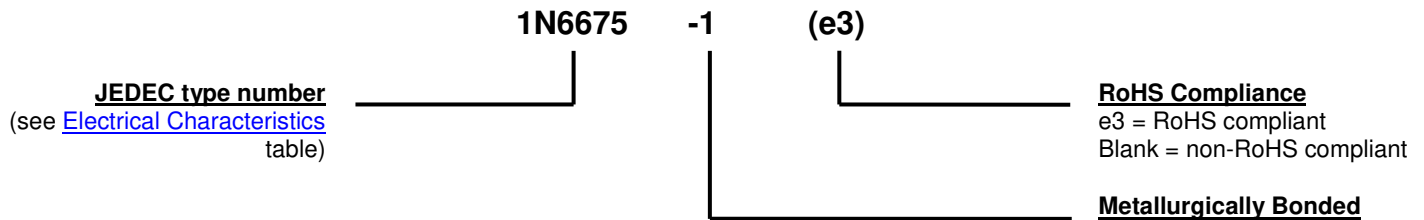
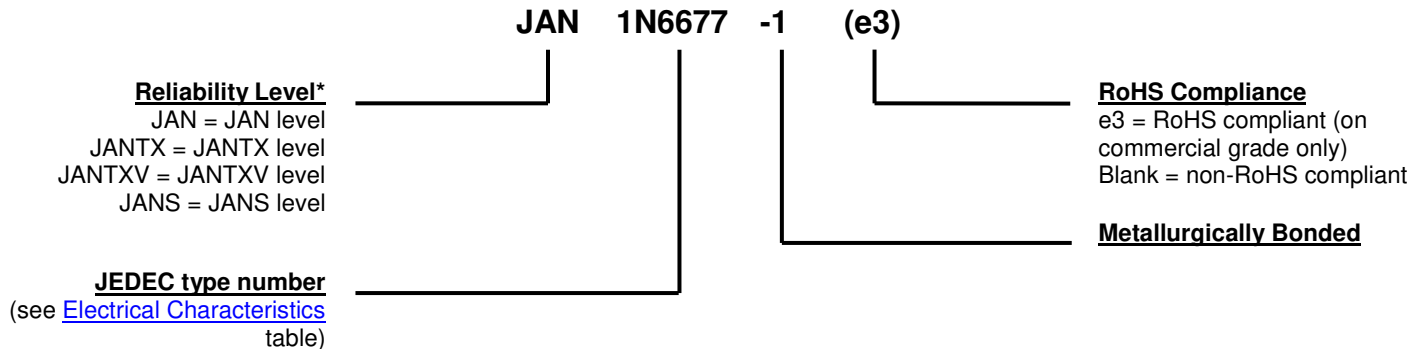
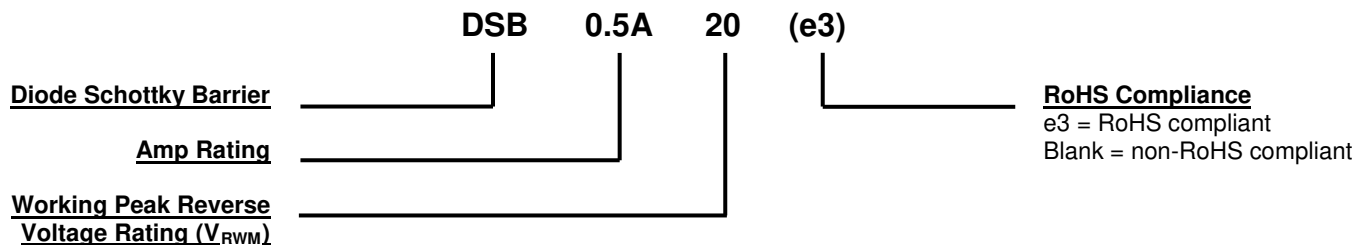
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MECHANICAL and PACKAGING

- CASE: Hermetically sealed glass case. DO-35 (DO-204AH) package.
- TERMINALS: Tin-lead or RoHS compliant annealed matte-tin plating (commercial grade only) over copper clad steel. Solderable per MIL-STD-750, method 2026.
- MARKING: Part number and cathode band.
- POLARITY: Reference diode to be operated with the banded (cathode) end positive with respect to the opposite end.
- TAPE & REEL option: Standard per EIA-296 (add "TR" suffix to part number). Consult factory for quantities.
- WEIGHT: Approximately 0.2 grams.
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE
1N6675-1 – 1N6677-1:

1N6677-1 only:

DSB0.5A20 – DSB0.5A40:


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
	V (pk)	Volts	Volts	Volts	µA	mA	pF
1N6675-1	20	0.37	0.50	0.70	5.0	0.60	50
1N6676-1	30	0.37	0.50	0.70	5.0	0.60	50
1N6677-1	40	0.37	0.50	0.70	5.0	0.60	50

NOTE: 1. These numbers can also be ordered as DSB0.2A20, DSB0.2A30, and DSB0.2A40.

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
DSB0.5A20	20	0.50	0.65	10.0	1.0	60
DSB0.5A30	30	0.50	0.65	10.0	1.0	60
DSB0.5A40	40	0.50	0.65	10.0	1.0	60

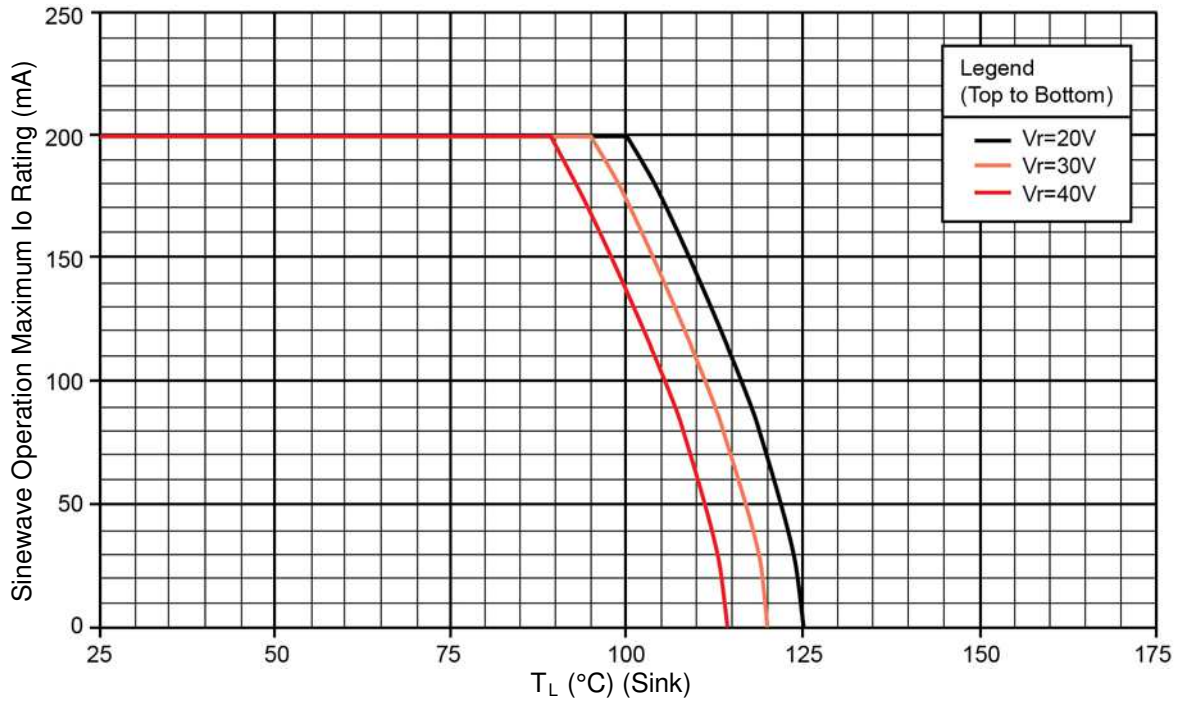
GRAPHS


FIGURE 1
Temperature power derating for 1N6677-1

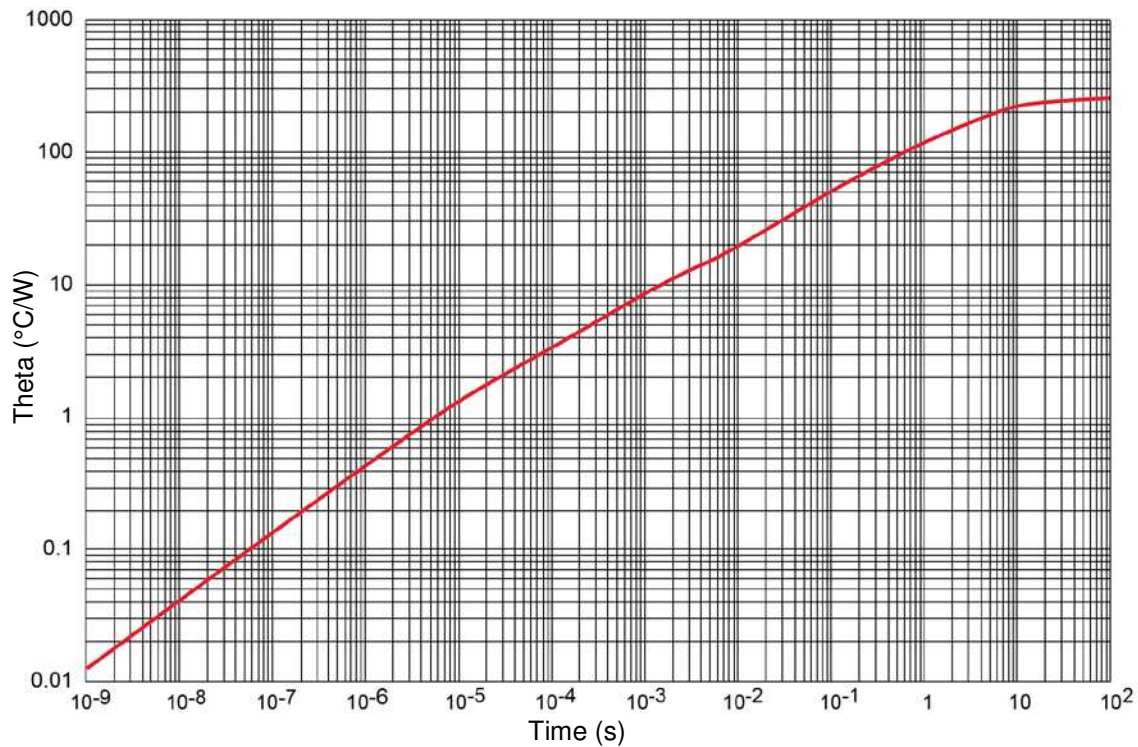
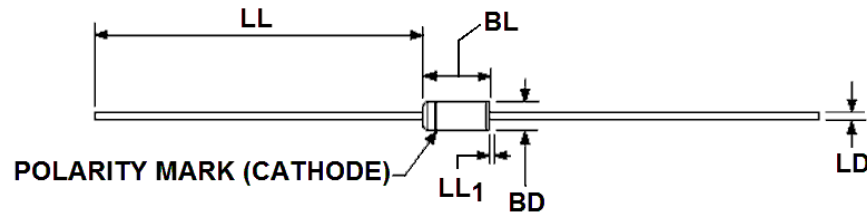


FIGURE 3
Thermal impedance curve for 1N6677-1

PACKAGE DIMENSIONS


Ltr	Dimensions				Notes
	Inch		Millimeters		
	Min	Max	Min	Max	
BD	0.060	0.075	1.52	1.91	3
BL	0.140	0.180	3.56	4.57	3
LD	0.018	0.022	0.46	0.56	
LL	1.000	1.500	25.40	38.10	
LL₁		0.050		1.27	4

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for information only.
3. Package contour optional within BD and length BL. Heat slugs, if any shall be included within this cylinder but shall not be subject to minimum limit of BD.
4. Within this zone, lead diameter may vary to allow for lead finishes and irregularities, other than heat slugs.
5. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.
6. The dimensions shown are tighter in tolerance than dimensions shown in the military slash sheet (/156) since Microsemi now only offers the smaller DO-35 package option rather than the larger DO-7.