RoHS
Available on commercial versions

1 Amp Schottky Barrier Rectifiers

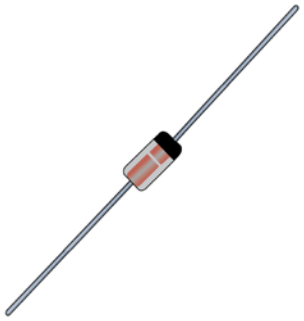
Qualified per MIL-PRF-19500/586

Qualified Levels:*
JAN, JANTX, JANTXV and JANS

DESCRIPTION

This 1 Amp Schottky barrier rectifier is metallurgically bonded and offers military grade qualifications for the part numbers of 1N5819-1 and 1N6761-1 for high-reliability applications. This small diode is hermetically sealed and bonded into a DO-41 glass package.

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



DO-41 Package

Also available in:

DO-213AB package
(surface mount)
1N5819UR-1, 1N6761UR-1 and CDLL variants

FEATURES

- JEDEC registered 1N5818, 1N5819 and 1N6759 through 1N6761 numbers.
- Hermetically sealed DO-41 glass package.
- Metallurgically bonded.
- *1N5819-1 and 1N6761-1 only are available in JAN, JANTX, JANTXV and JANS qualifications per MIL-PRF-19500/586.
  (See part nomenclature for all available options.)
- RoHS compliant versions available (commercial grade only).

APPLICATIONS / BENEFITS

- Small size for high density mounting using flexible thru-hole leads (see package illustration).
- Low reverse (leakage) currents.
- Non-sensitive to ESD per MIL-STD-750 test method 1020 (human body model).
- Inherently radiation hard as described in Microsemi "MicroNote 050".

MAXIMUM RATINGS @ T_A = +25 ºC unless otherwise specified

Parameters/Test Conditions		Symbol	Value	Unit
Storage Temperature		T_{STG}	-65 to +150	ºC
Junction Temperature	1N5819-1 1N6761-1	T_J	-65 to +125 -65 to +150	ºC
Thermal Resistance, Junction-to-Lead @ lead length = 0.375 inch (9.52 mm) from body		$R_{\Theta JL}$	70	ºC/W
Thermal Resistance, Junction-to-Ambient		$R_{\Theta JA}$	220	ºC/W
Average Rectified Output Current (1)		I_O	1.0	A
Surge Peak Forward Current		I_{FSM}	25	A
Solder Temperature @ 10 s			260	ºC

NOTE: 1. T_L = 45ºC for the 1N5819-1 and T_L = 55ºC for the 1N6761-1.

MSC – Lawrence
6 Lake Street,
Lawrence, MA 01841
Tel: 1-800-446-1158 or
(978) 620-2600
Fax: (978) 689-0803

MSC – Ireland
Gort Road Business Park,
Ennis, Co. Clare, Ireland
Tel: +353 (0) 65 6840044
Fax: +353 (0) 65 6822298

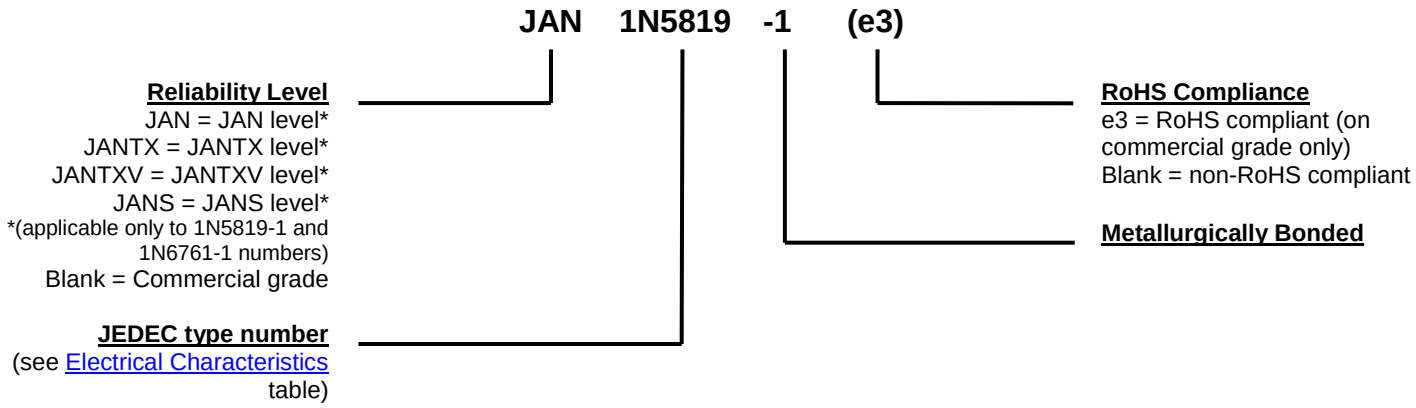
Website:
www.microsemi.com

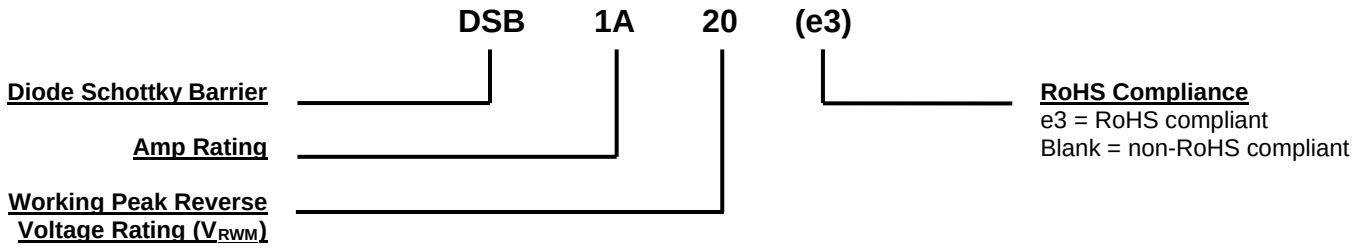
©2013 Microsemi Corporation

MECHANICAL and PACKAGING

- CASE: Hermetically sealed voidless hard glass with tungsten slugs.
- TERMINALS: Tin/lead or RoHS compliant matte/tin (commercial grade only) over copper.
- MARKING: Body coated in blue with part number.
- POLARITY: Cathode indicated by band.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: Approximately 340 milligrams.
- See Package Dimensions on last page.

PART NOMENCLATURE





SYMBOLS & DEFINITIONS

Symbol	Definition
C_T	Total Capacitance: The total small signal capacitance between the diode terminals of a complete device.
f	frequency
I_{FSM}	Surge Peak Forward Current: The forward current including all nonrepetitive transient currents but excluding all repetitive transients (ref JESD282-B)
I_R	Reverse Current: The dc current flowing from the external circuit into the cathode terminal at the specified voltage V_R.
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.
$V_{(BR)}$	Minimum Breakdown Voltage: The minimum voltage the device will exhibit at a specified current.
V_F	Forward Voltage: The positive anode-cathode voltage the device will exhibit at a specified I_F current.
V_R	Reverse Voltage: The dc voltage applied in the reverse direction below the breakdown region.
V_{RWM}	Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range excluding all transient voltages (ref JESD282-B). Also sometimes known as PIV.

©2013 Microsemi Corporation

***ELECTRICAL CHARACTERISTICS** @ T_A = 25 °C unless otherwise specified

TYPE NUMBER	WORKING PEAK REVERSE VOLTAGE (1)	MAXIMUM FORWARD VOLTAGE			MAXIMUM REVERSE LEAKAGE CURRENT AT RATED VOLTAGE		MAXIMUM CAPACITANCE @ V_R = 5 VOLTS f ≤ 1.0 MHz
	V_{RWM}	V_F @ 0.1A	V_F @ 1.0 A	C_T	I_{RM} @ 25°C	I_{RM} @ 100°C	C_T
	Volts	Volts	Volts	pF	mA	mA	pF
1N5818-1*	30	0.36	0.60	0.9	0.10	5.0	
†1N5819-1	45	0.34	0.49	0.8	0.05	5.0	70
1N6759-1	60	0.38	0.69	NA	0.10	6.0	
1N6760-1	80	0.38	0.69	NA	0.10	6.0	
†1N6761-1	100	0.38	0.69	NA	0.10	12.0	70
DSB1A20	20	0.36	0.60	0.9	0.10	5.0	
DSB1A30	30	0.36	0.60	0.9	0.10	5.0	
DSB1A40	40	0.36	0.60	0.9	0.10	5.0	
DSB1A50	50	0.36	0.60	0.9	0.10	5.0	
DSB1A60	60	0.38	0.69	NA	0.10	12.0	
DSB1A80	80	0.38	0.69	NA	0.10	12.0	
DSB1A100	100	0.38	0.69	NA	0.10	12.0	

***This part number may also be ordered through the number of DSB5818.**

†Also available with JAN, JANTX, JANTXV, and JANS military qualifications.

©2013 Microsemi Corporation

GRAPHS

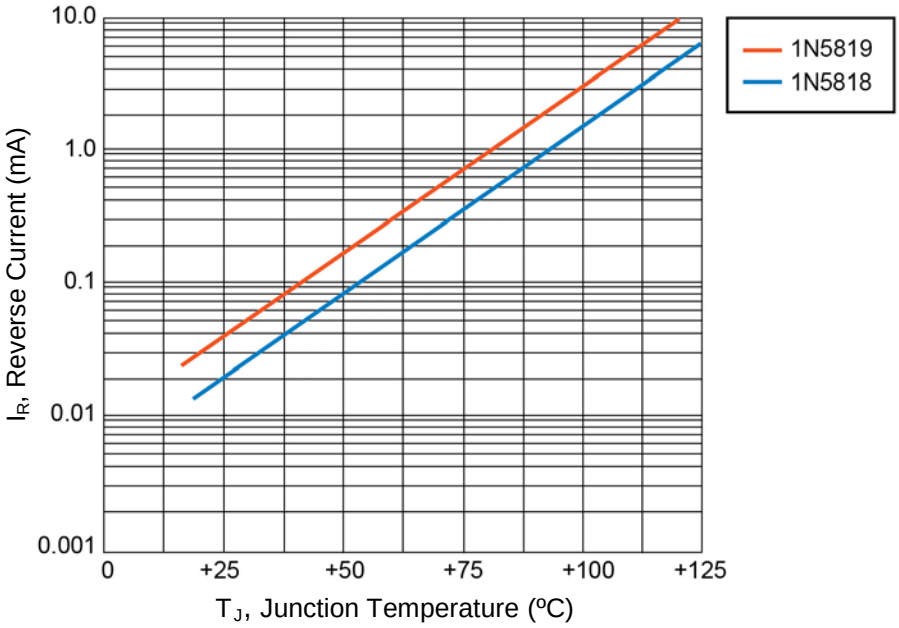


FIGURE 1
Typical Reverse Leakage Current at Rated PIV (PULSED)

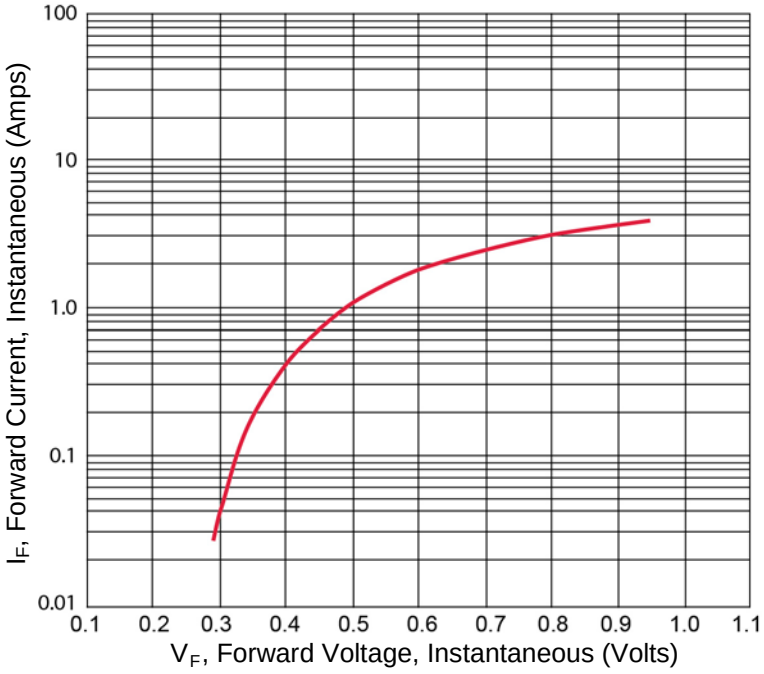


FIGURE 2
Typical Forward Voltage for 1N5819-1

©2013 Microsemi Corporation

GRAPHS (continued)

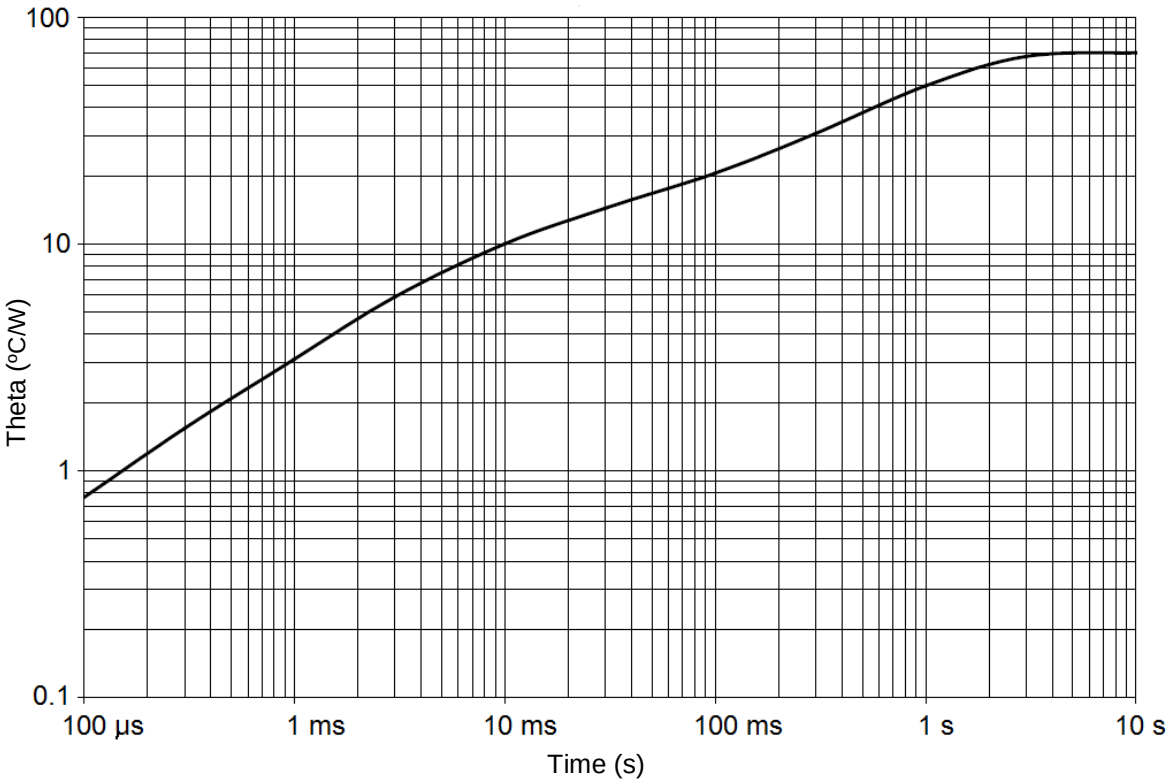
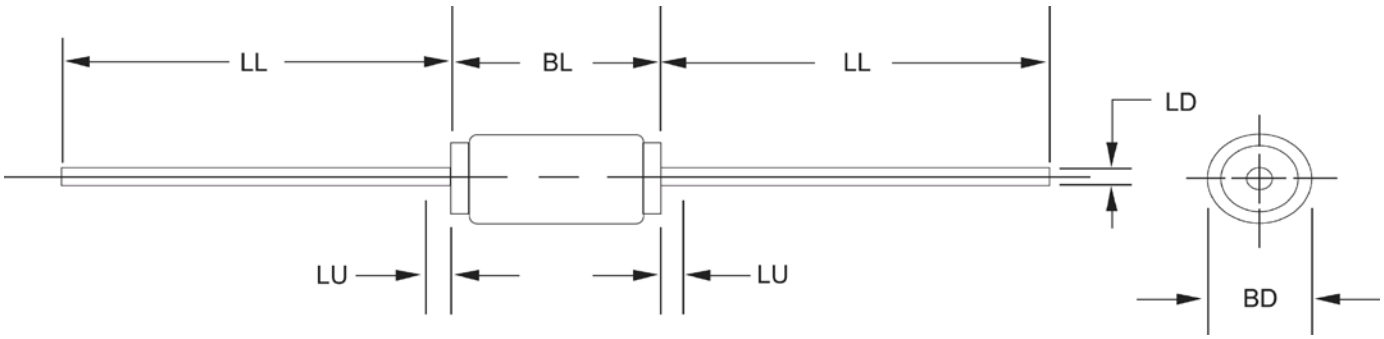


FIGURE 3
Thermal impedance for 1N5819-1 and 1N6761-1 (DO-41)

©2013 Microsemi Corporation

PACKAGE DIMENSIONS



NOTES:

1. Dimensions are in inches. Millimeters are given for information only.
2. Package contour optional with BD and length BL. Slugs, if any, shall be included within this cylinder length but shall not be subject to minimum limit of BD.
3. Lead diameter not controlled in this zone to allow for flash, lead finish build-up, and minor irregularities other than slugs.
4. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

Ltr	DIMENSIONS				Notes
	INCH		MILLIMETERS		
	Min	Max	Min	Max	
BD	0.080	0.107	2.03	2.72	2
BL	0.160	0.205	4.06	5.21	2
LD	0.028	0.034	0.71	0.86	
LL	1.000	-	25.40	-	
LU	-	0.050	-	1.27	3

©2013 Microsemi Corporation