RoHS
Available on commercial versions

Schottky Barrier Diode

Qualified per MIL-PRF-19500/444

Qualified Levels:
JAN, JANTX, and JANTXV

DESCRIPTION

This Schottky barrier diode is metallurgically bonded and offers military grade qualifications for high-reliability applications on "1N" prefixed numbers. This small diode is hermetically sealed and bonded into a DO-35 glass package.

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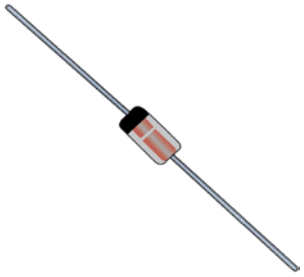

DO-35 (DO-204AH) Package

FEATURES

- JEDEC registered 1N5711-1, 1N5712-1, 1N6857-1, and 1N6858-1 numbers.
- Metallurgically bonded.
- JAN, JANTX, JANTXV and commercial qualifications also available per MIL-PRF-19500/444 on "1N" numbers only.
  (See Part Nomenclature for all available options).
- RoHS compliant versions available (commercial grade only).

Also available in:

UB package
(3-pin surface mount)
1N5711UB, 1N5712UB (B, CC, CA)

DO-213AA package
(surface mount)
1N5711UR-1, 1N5712UR-1, 1N6857UR-1, and 1N6858UR-1

APPLICATIONS / BENEFITS

- Low reverse leakage characteristics.
- Small size for high density mounting using flexible thru-hole leads (see package illustration).
- ESD sensitive to Class 1.

MAXIMUM RATINGS @ 25 ºC unless otherwise stated

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T_J and T_{STG}	-65 to +150	ºC
Thermal Resistance, Junction-to-Lead @ lead length = 0.375 inch (9.52 mm) from body	$R_{\Theta JL}$	250	ºC/W
Average Rectified Output Current: 1N5711 (1) DSB2810, DSB5712, 1N5712 & 1N6858 (2) 1N6857 (3)	I_O	 33 75 150	mA
Solder Temperature @ 10 s		260	ºC

NOTES: 1. At T_L = +130°C and L = 0.375 inch, derate I_O to 0 at +150°C.
2. At T_L = +110°C and L = 0.375 inch, derate I_O to 0 at +150°C.
3. At T_L = +70°C and L = 0.375 inch, derate I_O to 0 at +150°C.

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MECHANICAL and PACKAGING

- CASE: Hermetically sealed glass package.
- TERMINALS: Tin/lead plated or RoHS compliant matte-tin (on commercial grade only) over copper clad steel. Solderable per MIL-STD-750, method 2026.
- POLARITY: Cathode indicated by band.
- MARKING: Part number.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: Approximately 0.2 grams.
- See Package Dimensions on last page.

PART NOMENCLATURE

JAN 1N5711 -1 (e3)

Reliability Level
JAN = JAN level
JANTX = JANTX level
JANTXV = JANTXV level
CDS (reference JANS)*
Blank = Commercial grade
***Available only on 1N5711-1**

JEDEC type number
(see Electrical Characteristics table)

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

Metallurgically Bonded

DSB 2810 (e3)

Diode Schottky Barrier

Series number
(see Electrical Characteristics table)

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_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.
t_{rr}	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.
$V_{(BR)}$	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.

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ELECTRICAL CHARACTERISTICS @ 25 ºC unless otherwise noted

TYPE NUMBER	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM FORWARD VOLTAGE	WORKING PEAK REVERSE VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT		MAXIMUM CAPACITANCE @ V_R = 0 VOLTS f = 1.0 MHz
	$V_{(BR)}$ @ 10 µA	V_F @ 1 mA	V_F @ I_F	V_{RWM}	I_R @ V_R		C
	Volts	Volts	V @ mA	V (pk)	nA	Volts	pF
1N5711-1	70	0.41	1.0 @ 15	50	200	50	2.0
1N5712-1	20	0.41	1.0 @ 35	16	150	16	2.0
1N6857-1	20	0.35	0.75 @ 35	16	150	16	4.5
1N6858-1	70	0.36	0.65 @ 15	50	200	50	4.5
DSB2810	20	0.41	1.0 @ 35	16	100	15	2.0
DSB5712	20	0.41	1.0 @ 35	16	150	16	2.0

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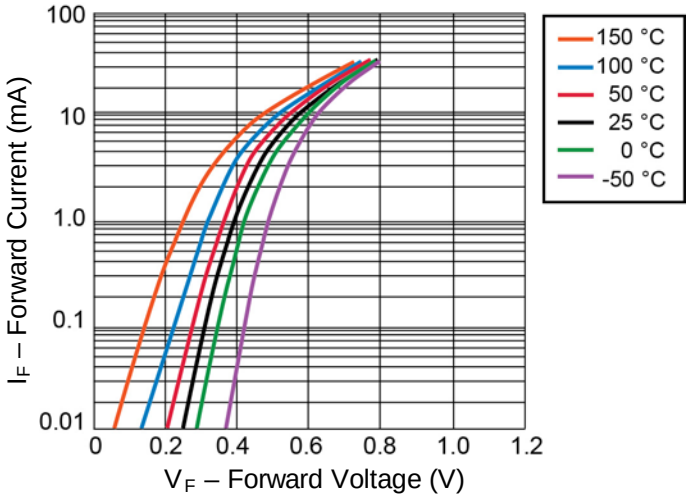

FIGURE 1
I-V Curve showing typical Forward Voltage Variation
Temperature for the 1N5712-1, DSB5712 and DSB2810 Schottky Diodes

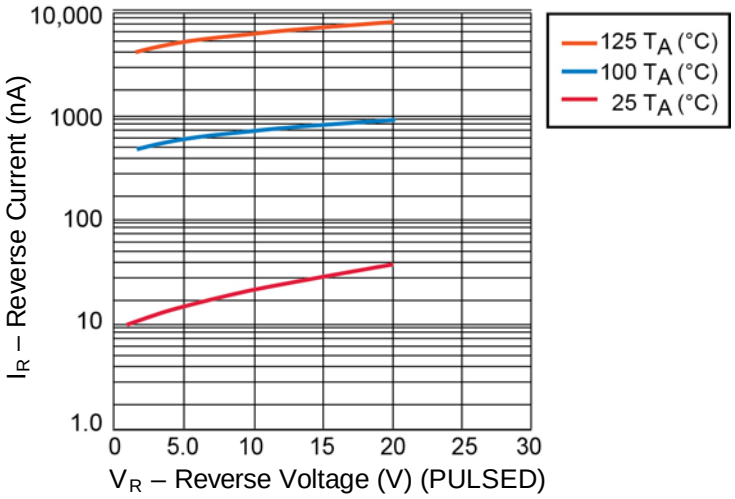

FIGURE 2
1N5712-1, DSB5712 and DSB2810 Typical variation of Reverse Current (I_R) vs Reverse Voltage (V_R) at Various Temperatures

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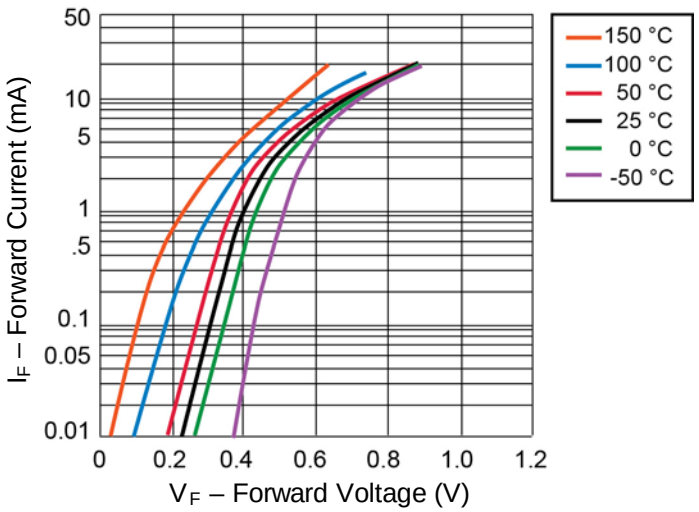

FIGURE 3
I – V curve showing typical Forward Voltage Variation
With Temperature Schottky Diode 1N5711

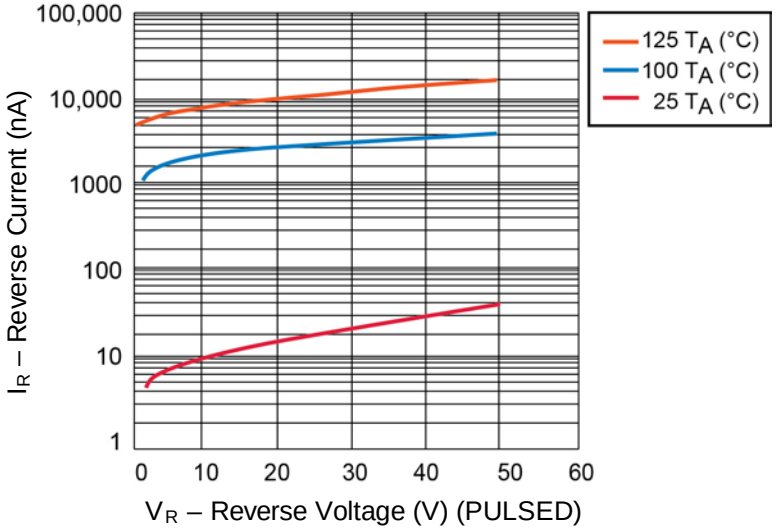

FIGURE 4
1N5711 Typical Variation of Reverse Current (I_R) vs Reverse Voltage (V_R)
at Various Temperatures

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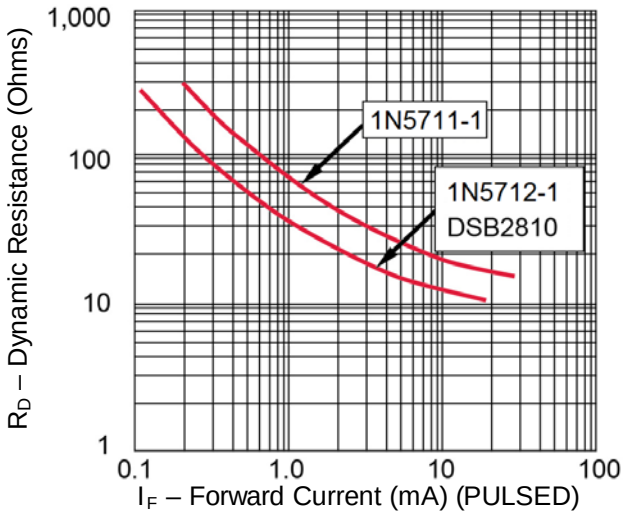

FIGURE 5
Typical Dynamic Resistance (R_D) vs Forward Current (I_F)

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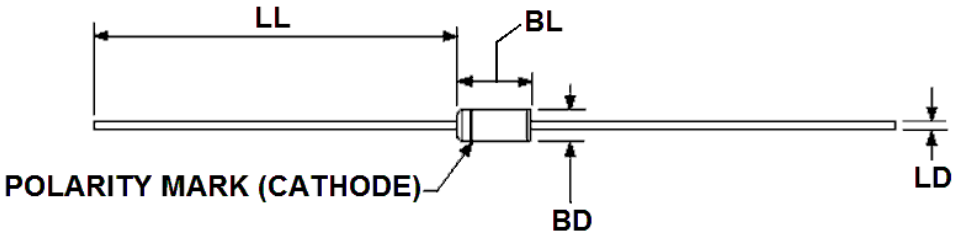
PACKAGE DIMENSIONS



NOTES:

1. Dimensions are in inches. Millimeters are given for information only.
2. Dimensions BL and LD includes all components of the diode periphery expect the section of the leads over which the diameter is controlled.
3. Dimension BD shall be measured at the largest diameter.
4. In accordance with ASME Y1.4M, diameters are equivalents to ϕx symbology.

Symbol	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
BD	0.068	0.076	1.73	1.93	2,3
BL	0.125	0.170	3.18	4.32	2
LD	0.014	0.022	0.36	0.56	
LL	1.000	1.500	25.40	38.10	

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1N5712 1N5712-1 1N6857-1 1N6858UR-1 1N6858-1 1N6857UR-1 CDLL2810/TR JANTX1N5712-1/TR 1N6858-1/TR JANTXV1N5711-1/TR JAN1N5712-1/TR CDLL2810e3/TR CDLL2810e3 JAN1N5711-1/TR 1N6857-1/TR 1N5712/TR 1N5712-1/TR 1N5712-1E3 1N5711e3 1N5712-1E3/TR 1N5711e3/TR 1N5711/TR 1N5711-1/TR

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