

Schottky Barrier Diodes for General Purpose Applications

Technical Data

1N5711
1N5712
5082-2300 Series
5082-2800 Series
5082-2900

Features

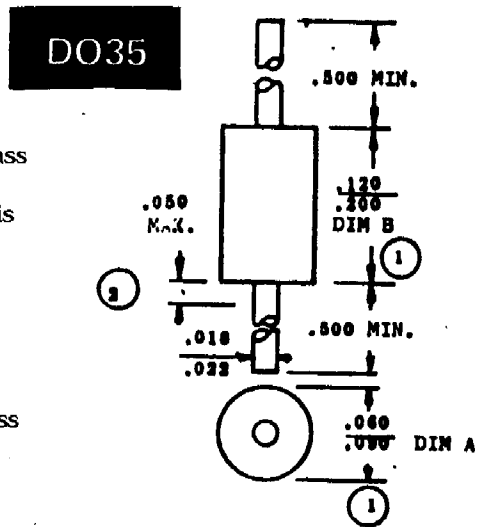
- **Low Turn-On Voltage**
As Low as 0.34 V at 1 mA
- **Pico Second Switching Speed**
- **High Breakdown Voltage**
Up to 70 V
- **Matched Characteristics Available**

Description/Applications

The 1N5711, 1N5712, 5082-2800/10/11 are passivated Schottky barrier diodes which use a patented "guard ring" design to achieve a high breakdown voltage. Packaged in a low cost glass package, they are well suited for high level detecting, mixing, switching, gating, log or A-D converting, video detecting, frequency discriminating, sampling, and wave shaping.

The 5082-2835 is a passivated Schottky diode in a low cost glass package. It is optimized for low turn-on voltage. The 5082-2835 is particularly well suited for the UHF mixing needs of the CATV marketplace.

The 5082-2300 Series and 5082-2900 devices are unpassivated Schottky diodes in a glass package. These diodes have extremely low 1/f noise and are ideal for low noise mixing, and high sensitivity detecting. They are particularly well suited for use in Doppler or narrow band video receivers.



1. PACKAGE CONTOUR OPTIONAL WITHIN DIMENSIONS A & B. SLUGS, IF ANY, SHALL BE INCLUDED WITHIN THIS CYLINDER BUT SHALL NOT BE SUBJECT TO THE MINIMUM LIMIT OF DIM. A.
2. LEAD DIAMETER NOT CONTROLLED IN THIS ZONE TO ALLOW FOR FLASH, LEAD FINISH BUILD-UP, AND MINOR IRREGULARITIES OTHER THAN SLUGS.

Maximum Ratings

Junction Operating and Storage Temperature Range

5082-2303, -2900	-60°C to +100°C
1N5711, 1N5712, 5082-2800/10/11	-65°C to +200°C
5082-2835	60°C to +150°C

DC Power Dissipation

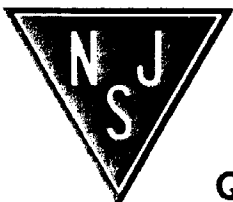
(Measured in an infinite heat sink at $T_{CASE} = 25^{\circ}C$)

Derate linearly to zero at maximum rated temperature

5082-2303, -2900	100 mW
1N5711, 1N5712, 5082-2800/10/11	250 mW
5082-2835	150 mW

Peak Inverse Voltage V_{BR}

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



Package Characteristics

Outline 15

Lead Material	Dumet
Lead Finish	95 5% Tin Lead
Max. Soldering Temperature	260°C for 5 sec
Min. Lead Strength	4 pounds pull
Typical Package Inductance	
1N5711, 1N5712:	2.0 nH
2800 Series:	2.0 nH
2300 Series, 2900:	3.0 nH
Typical Package Capacitance	
1N5711, 1N5712:	0.2 pF
2800 Series:	0.2 pF
2300 Series, 2900:	0.07 pF

The leads on the Outline 15 package should be restricted so that the bend starts at least 1/16 inch from the glass body.

Outline 15 diodes are available on tape and reel. The tape and reel specification is patterned after RS-296-D.

Electrical Specifications at $T_A = 25^\circ\text{C}$

General Purpose Diodes

Part Number	Package Outline	Min. Breakdown Voltage V_{BR} (V)	Max. Forward Voltage V_F (mV)	$V_F = 1$ V Max. at Forward Current I_F (mA)	Max. Reverse Leakage Current		Max. Capacitance C_T (pF)
					I_R (nA) at V_R (V)		
5082-2800	15	70	410	15	200	50	2.0
1N5711	15	70	410	15	200	50	2.0
5082-2810	15	20	410	35	100	15	1.2
1N5712	15	20	550	35	150	16	1.2
5082-2811	15	15	410	20	100	8	1.2
5082-2835	15	8*	340	10*	100	1	1.0
Test Conditions		$I_R = 10 \mu\text{A}$ * $I_R = 100 \mu\text{A}$	$I_F = 1 \text{ mA}$	* $V_F = 0.45 \text{ V}$			$V_R = 0 \text{ V}$ $f = 1.0 \text{ MHz}$

Note: Effective Carrier Lifetime (τ) for all these diodes is 100 ps maximum measured with Krakauer method at 5 mA except for 5082-2835 which is measured at 20 mA.