5082-2800

High breakdown general purpose Schottky diode

All Detail Documents

Description

Lifecycle status: Active

Features

The 5082-28xx family 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 to high level detecting, mixing, switching, gating, log or A-D converting, video detecting, frequency discriminating, sampling, and wave shaping applications.

1N5711, 1N5712, 5082-2800 Series

Schottky Barrier Diodes for
General Purpose Applications

Data Sheet

Description/Applications

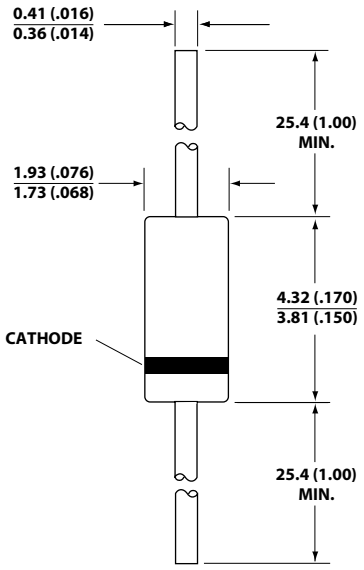
The 1N5711, 1N5712, 5082-2800/10/11 are passivated Schottky barrier diodes which use a patented "guard ring" design to achieve a high breakdown voltage. Packaged in a low cost glass package, they are well suited for high level detecting, mixing, switching, gating, log or A-D converting, video detecting,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

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

Outline 15



DIMENSIONS IN MILLIMETERS AND (INCHES).

Maximum Ratings

Junction Operating and Storage Temperature Range
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°C)
Derate linearly to zero at maximum rated temp.
1N5711, 1N5712, 5082-2800/10/11 .....250 mW
5082-2835 .....150 mW
Peak Inverse Voltage ..... V_{BR}

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
Typical Package Capacitance
1N5711, 1N5712: ..... 0.2 pF
2800 Series: ..... 0.2 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 $T_A = 25°C$

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 I_R (nA) at V_R (V)		Max. Capacitance C_T (pF)
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		$I_R = 10\ \mu A$ $*I_R = 100\ \mu A$	$I_F = 1$ mA	$*V_F = 0.45$ V			$V_R = 0$ V f = 1.0 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.

Matched Pairs and Quads

Basic Part Number 5082-	Matched Pair Unconnected	Matched Quad Unconnected	Batch Matched[1]	Test Conditions
2800	5082-2804 ΔV_F = 20 mV	5082-2805 ΔV_F = 20 mV		ΔV_F at I_F = 0.5, 5 mA *I_F = 10 mA ΔC_O at f = 1.0 MHz
2811			5082-2826 ΔV_F = 10 mV ΔC_O = 0.1 pF	ΔV_F at I_F = 10 mA ΔC_O at f = 1.0 MHz
2835			5082-2080 ΔV_F = 10 mV ΔC_O = 0.1 pF	ΔV_F at I_F =10 mA ΔC_O at f = 1.0 MHz

Note:
1. Batch matched devices have a minimum batch size of 50 devices.

SPICE Parameters

Parameter	Units	5082-2800	5082-2810	5082-2811	5082-2835
B_V	V	75	25	18	9
C_{J0}	pF	1.6	0.8	1.0	0.7
E_G	eV	0.69	0.69	0.69	0.69
I_{BV}	A	10E - 5	10E-5	10E-5	10E-5
I_S	A	2.2 x $10E^{-9}$	1.1 x $10E^{-9}$	0.3 x $10E^{-8}$	2.2 x $10E^{-8}$
N		1.08	1.08	1.08	1.08
R_S	Ω	25	10	10	5
P_B	V	0.6	0.6	0.6	0.56
P_T		2	2	2	2
M		0.5	0.5	0.5	0.5

Diode Package Marking

1N5xxx	5082-xxxx
would be marked:	
1Nx	xx
xxx	xx
YWW	YWW

where xxxx are the last four digits of the 1Nxxxx or the 5082-xxxx part number.
Y is the last digit of the calendar year. WW is the work week of manufacture.

Examples of diodes manufactured during workweek 45 of 1999:

1N5712	5082-3080
would be marked:	
1N5	30
712	80
945	945

Part Number Ordering Information

Part Number	No. of devices	Container
5082-28xx#T25/1N57xx#T25	2500	Tape & Reel
5082-28xx#T50/ 1N57xx#T50	5000	Tape & Reel
5082-28xx/ 1N57xx	100	Antistatic bag

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