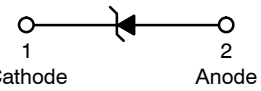
Zener Protection Diode

Product Preview

NZ8P Series



X2DFNW2
CASE 711BG

The NZ8P series of Protection Diodes are designed for applications requiring transient overvoltage ESD protection. They are intended for use to protect voltage sensitive components from ESD and other harmful transient voltage events. This device provides a single channel of uni−directional protection in an ultra−compact X2DFNW2 1.0 x 0.6 mm package.

Features

- Full Range of Working Voltage Options
- High ESD Ratings
- Wettable Flank Package for Optimal Automated Optical Inspection (AOI)
- SZ Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

Typical Applications

- Automotive ECU's
- IVN – In Vehicle Networking
- Voltage Sensitive Circuits

DEVICE MARKING INFORMATION

XX = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
NZ8PxxxMX2WT5G	X2DFNW2 (Pb−Free)	8000 / Tape & Reel
SZNZ8PxxxMX2WT5G		

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
IEC 61000−4−2 Contact IEC 61000−4−2 Air ISO 10605 Contact (330 pF / 330 Ω) ISO 10605 Contact (330 pF / 2 kΩ) ISO 10605 Contact (150 pF / 2 kΩ)	ESD	±30 ±30 ±30 ±30 ±30	kV
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

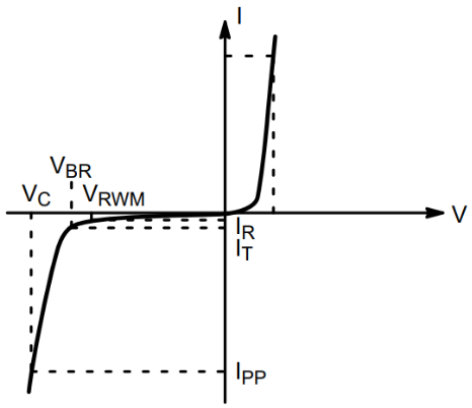
This document contains information on a product under development. **onsemi** reserves the right to change or discontinue this product without notice.

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current

*See Application Note AND8308/D for detailed explanations of datasheet parameters.



ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Device*	Device Marking	V_{RWM} (Note 1)	V_{BR} @ I_T = 5 mA (Note 2)			V_{BR} @ I_T = 5 mA (150°C)	I_R @ V_{RWM}			V_C Max @ I_{PP} = 1.0 A	I_{PP} Max (8x20μs)	Junction Capacitance Typical
			V				nA					
		V	Min	Typ	Max	V	Min	Typ	Max	V	A	pF
NZ8P3V3MX2WT5G	P7	3.3	3.6	3.9	4.2	4.5		200	5000	5.5	8	109
NZ8P5V0MX2WT5G	P6	5.0	6.0	6.2	6.4	7.0		10	1000	9	8	47
NZ8P7V0MX2WT5G	PA	7.0	8.0	8.2	8.4	9.3		1.5	500	10	8	40
NZ8P8V0MX2WT5G	PB	8.0	9.7	10	10.3	11.7		1	100	11.5	8	40
NZ8P12VMX2WT5G	P5	12	14.5	15	15.4	17.5		1	100	17	7	38
NZ8P15VMX2WT5G	P4	15	17.5	18	18.5	21.0		1	100	22	6	31
NZ8P18VMX2WT5G	PC	18	21.4	22	22.6	25.7		1	100	26.5	5	20
NZ8P20VMX2WT5G	PD	20	23.4	24	24.6	28.0		1	100	29.5	5	20
NZ8P24VMX2WT5G	P3	24	26.3	27	27.7	31.2		1	100	35	4.5	19
NZ8P26VMX2WT5G	P2	26	32.2	33	33.8	38.8		1	100	38	4.5	19
NZ8P36VMX2WT5G	P8	36	38.1	39	39.9	45.3		1	100	49	3.0	15
NZ8P42VMX2WT5G	P9	42	45.5	47	48.5	55.1		1	100	60	3.0	12

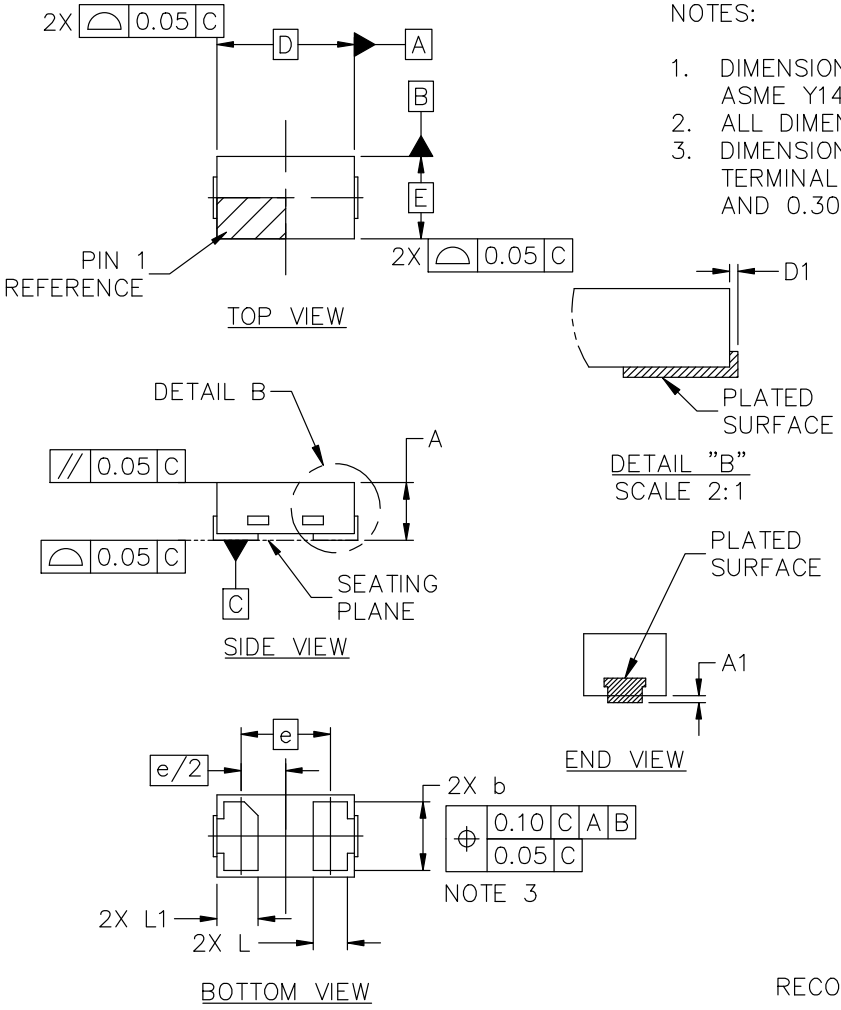
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. Surge protection devices are normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal or greater than the DC or continuous peak operating voltage level.
2. V_{BR} is measure at pulse test current I_T.

*Includes SZ prefix where applicable: SZ Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable.

PACKAGE DIMENSIONS

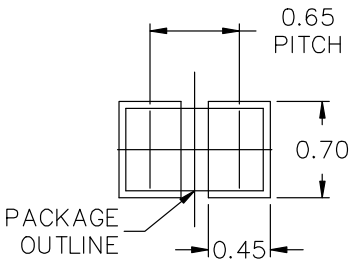
X2DFNW2 1.00x0.60x0.37, 0.65P
CASE 711BG
ISSUE D



NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5−2018.
2. ALL DIMENSION ARE IN MILLIMETERS.
3. DIMENSION b APPLIES TO THE PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.30 FROM THE TERMINAL TIP.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.34	0.37	0.40
A1	−−−	−−−	0.05
b	0.45	0.50	0.55
D	1.00 BSC		
D1	−−−	−−−	0.05
E	0.60 BSC		
e	0.65 BSC		
L	0.22 REF		
L1	0.24	0.28	0.34



RECOMMENDED MOUNTING FOOTPRINT*

* FOR ADDITIONAL INFORMATION ON OUR Pb−FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales