NSR0240MX

Schottky Barrier Diode

Schottky barrier diodes are optimized for very low forward voltage drop and low leakage current and are used in a wide range of dc−dc converter, clamping and protection applications in portable devices. NSR0240MX in a X2DFN2 miniature package enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

Features

- Very Low Forward Voltage Drop − 460 mV @ 100 mA
- Low Reverse Current − 0.2 μA @ 25 V VR
- 200 mA of Continuous Forward Current
- Very High Switching Speed
- Low Capacitance − CT = 7 pF
- This is a Pb−Free Device

Typical Applications

- LCD and Keypad Backlighting
- Camera Photo Flash
- Buck and Boost dc−dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

Markets

- Mobile Handsets
- MP3 Players
- Digital Camera and Camcorders
- Notebook PCs & PDAs
- GPS

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	40	V
Forward Current (DC)	I_F	200	mA
Non−Repetitive Peak Forward Surge Current, Square Wave, 10 ms	I_{FSM}	3.0	A
Repetitive Peak Forward Current, Square Wave, 1.0 ms, D.C. = 25%	I_{FRM}	1.0	A
ESD Rating: Human Body Model Machine Model	ESD	Class 1C Class A	

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.

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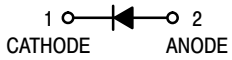
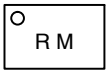
40 V SCHOTTKY BARRIER DIODE



X2DFN2
CASE 714AB

MARKING DIAGRAM



R = Specific Device Code
M = Month Code

ORDERING INFORMATION

Device	Package	Shipping†
NSR0240MXT5G	X2DFN2 (Pb−Free)	8000 / Tape & Reel

†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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance Junction–to–Ambient (Note 1) Total Power Dissipation @ T_A = 25°C	 $R_{\theta JA}$ P_D			 400 300	 °C/W mW
Junction and Storage Temperature Range	T_J, T_{stg}			–55 to +150	°C

1. FR–4, 20 mm^2, 1 oz. Cu.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage (V_R = 25 V) (V_R = 40 V)	I_R		 0.2 0.8	 0.55 5.0	μA
Forward Voltage (I_F = 0.1 mA) (I_F = 1.0 mA) (I_F = 10 mA) (I_F = 100 mA) (I_F = 200 mA)	V_F		 0.21 0.27 0.34 0.46 0.54	 0.24 0.30 0.365 0.50 0.60	V
Total Capacitance (V_R = 1.0 V, f = 1 MHz)	C_T		7.0		pF

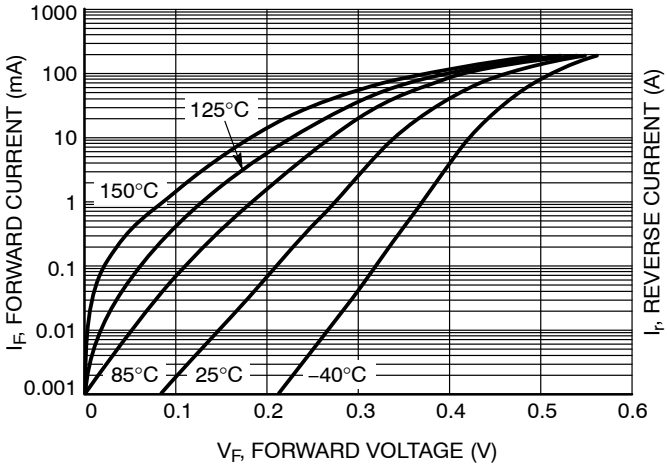


Figure 1. Forward Voltage

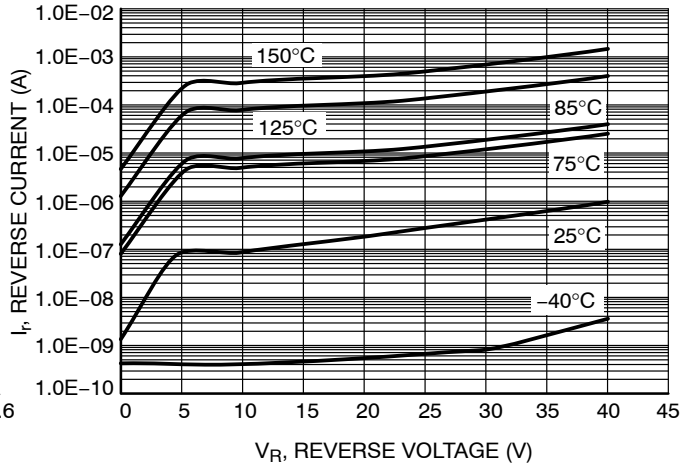


Figure 2. Leakage Current

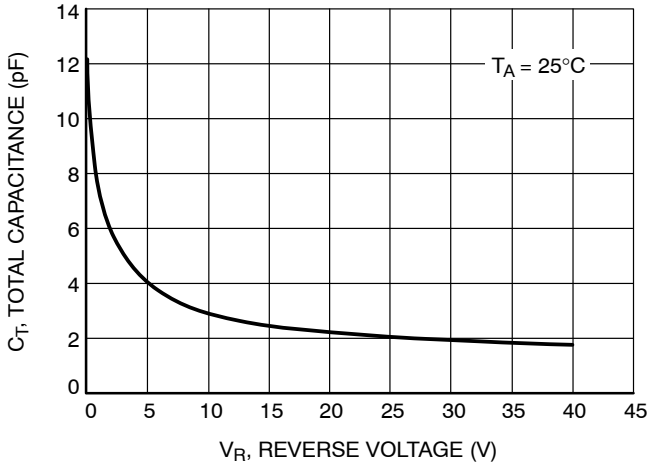
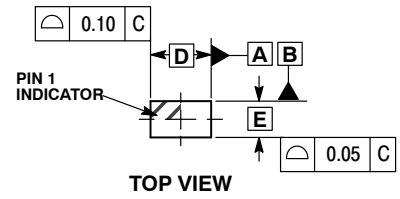


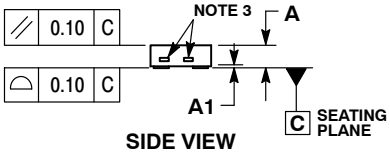
Figure 3. Total Capacitance

PACKAGE DIMENSIONS

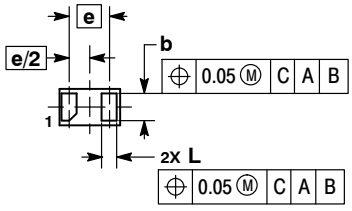
X2DFN2 1.0x0.6, 0.65P
CASE 714AB
ISSUE O



TOP VIEW



SIDE VIEW

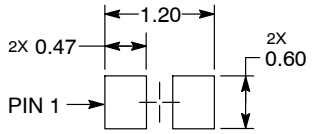


BOTTOM VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. EXPOSED COPPER ALLOWED AS SHOWN.

	MILLIMETERS	
DIM	MIN	MAX
A	0.34	0.40
A1	---	0.05
b	0.45	0.55
D	1.00 BSC	
E	0.60 BSC	
e	0.65 BSC	
L	0.20	0.30

RECOMMENDED SOLDER FOOTPRINT*



DIMENSIONS: MILLIMETERS

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
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NSR0240MX/D

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