# NSR0240P2T5G

# **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. NSR0240P2 in a SOD-923 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
- Power Dissipation of 240 mW with Minimum Trace
- 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 <sub>R</sub>	40	V
Forward Current (DC)	Ιϝ	200	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	2.0	Α
ESD Rating: Human Body Model Machine Model	ESD	Class Class	

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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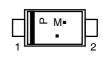
# **40 V SCHOTTKY BARRIER DIODE**





SOD-923 CASE 514AB PLASTIC





P = Specific Device Code

M = Month Code

= Pb-Free Package

(Note: Microdot may be in either location)

#### **ORDERING INFORMATION**

Device	Package	Shipping†
NSR0240P2T5G	SOD-923	2 mm Pitch 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.

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#### **NSR0240P2T5G**

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Тур	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1) Total Power Dissipation @ T <sub>A</sub> = 25°C	R <sub>θJA</sub> P <sub>D</sub>			520 240	°C/W mW
Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ T <sub>A</sub> = 25°C	R <sub>θJA</sub> P <sub>D</sub>			175 710	°C/W mW
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>			-55 to +150	°C

- Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.
   Mounted onto a 4 in square FR-4 board 1 in sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.

#### **ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Тур	Max	Unit
Reverse Leakage (V <sub>R</sub> = 25 V) (V <sub>R</sub> = 40 V)	I <sub>R</sub>		0.2 0.8	0.55 5.0	μΑ
Forward Voltage (I <sub>F</sub> = 10 mA) (I <sub>F</sub> = 100 mA) (I <sub>F</sub> = 200 mA)	V <sub>F</sub>		0.34 0.46 0.54	0.365 0.50 0.60	٧
Total Capacitance (V <sub>R</sub> = 1.0 V, f = 1 MHz)	СТ		7.0		pF

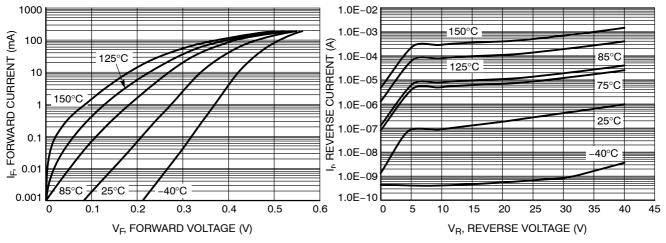


Figure 1. Forward Voltage

Figure 2. Leakage Current

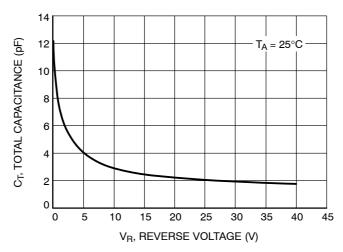
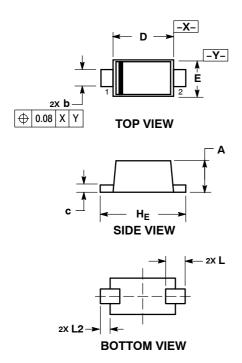


Figure 3. Total Capacitance

#### NSR0240P2T5G

#### **PACKAGE DIMENSIONS**

SOD-923 CASE 514AB **ISSUE B** 

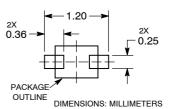


#### NOTES:

- 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M. 1994.
- CONTROLLING DIMENSION: MILLIMETERS.
  MAXIMUM LEAD THICKNESS INCLUDES LEAD
- FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL. DIMENSIONS D AND E DO NOT INCLUDE MOLD
- FLASH, PROTRUSIONS, OR GATE BURRS.

	MILLIMETERS			INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	0.34	0.37	0.40	0.013	0.015	0.016	
b	0.15	0.20	0.25	0.006	0.008	0.010	
С	0.07	0.12	0.17	0.003	0.005	0.007	
D	0.75	0.80	0.85	0.030	0.031	0.033	
Е	0.55	0.60	0.65	0.022	0.024	0.026	
HE	0.95	1.00	1.05	0.037	0.039	0.041	
Г	(	0.19 REF			0.007 REF		
L2	0.05	0.10	0.15	0.002	0.004	0.006	

#### **SOLDERING FOOTPRINT\***



See Application Note AND8455/D for more mounting details

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

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