

Schottky Barrier Diode NSR05F40NXT5G

These Schottky barrier diodes are optimized for low forward voltage drop and low leakage current and are offered in a Chip Scale Package (CSP) to reduce board space. The low thermal resistance enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

Features

- Low Forward Voltage Drop 420 mV @ 500 mA
- Low Reverse Current 15 μA @ 10 V VR
- 500 mA of Continuous Forward Current
- ESD Rating Human Body Model: Class 3B
 - Machine Model: Class C
- High Switching Speed
- NSV 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

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

Markets

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

MAXIMUM RATINGS

Ra	ting	Symbol	Value	Unit
Reverse Voltage		V_{R}	40	V
Forward Current (DC)		ΙF	500	mA
Forward Surge Curr	ent (60 Hz @ 1 cycle)	I _{FSM}	10	Α
Repetitive Peak For (Pulse Wave = 1 sec	ward Current c, Duty Cycle = 66%)	I _{FRM}	4.0	Α
ESD Rating:	Human Body Model Machine Model	ESD	> 8 > 400	kV V

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





DSN2 (0402) CASE 152AC

MARKING DIAGRAMS

PIN 1



AC = Specific Device Code M = Month Code

ORDERING INFORMATION

Device	Package	Shipping†
NSR05F40NXT5G	DSN2 (Pb-Free)	5000 / Tape & Reel
NSVR05F40NXT5G	DSN2 (Pb-Free)	5000 / 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.

NSR05F40NXT5G

THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Тур	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1) Total Power Dissipation @ T _A = 25°C	R _{θJA} P _D			240 521	°C/W mW
Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ T _A = 25°C	R _{θJA} P _D			94 1.3	°C/W W
Storage Temperature Range	T _{stg}		-40 to +125		°C
Junction Operating Temperature Range	TJ	-40 to +150			°C

- Mounted onto a 4 in square FR-4 board 50 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_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Тур	Max	Unit
Reverse Leakage (V _R = 10 V) (V _R = 40 V)	I _R			15 75	μΑ
Forward Voltage (I _F = 100 mA) (I _F = 500 mA)	V _F		0.340 0.420	0.360 0.460	V
Total Capacitance $(V_R = 1 \text{ V}, f = 1 \text{ MHz})$ $(V_R = 10 \text{ V}, f = 1 \text{ MHz})$	C _T		70 27	80 35	pF

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.

NSR05F40NXT5G

TYPICAL CHARACTERISTICS

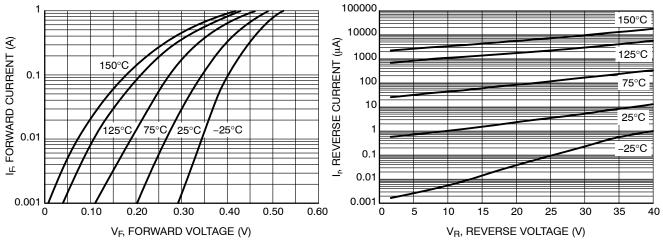


Figure 1. Forward Voltage

Figure 2. Leakage Current

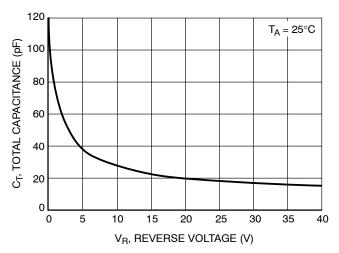


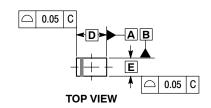
Figure 3. Total Capacitance

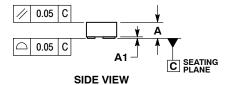


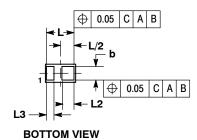


DSN2, 1.0x0.6, 0.575P, (0402) CASE 152AC ISSUE D

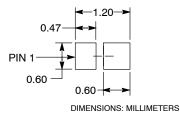
DATE 27 APR 2017







RECOMMENDED SOLDER FOOTPRINT*



See Application Note AND8464/D for more mounting details

NOTES:

- DIMENSIONING AND TOLERANCING PER
 ASME VIA EM 1004
- ASME Y14.5M, 1994.
 2. CONTROLLING DIMENSION: MILLIMETERS.

	MILLIMETERS			
DIM	MIN	MAX		
Α	0.25	0.31		
A1		0.05		
b	0.45	0.55		
D	1.00 BSC			
Е	0.60 BSC			
L	0.85	0.95		
L2	0.35	0.45		
L3	0.20	0.30		

GENERIC MARKING DIAGRAM1*

GENERIC MARKING DIAGRAM2*



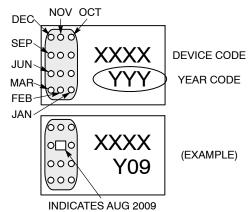


XXXX = Specific Device Code YYY = Year Code XX = Specific Device Code
M = Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G", may

or not be present. Some products may not follow the Generic Marking.

CATHODE BAND MONTH CODING



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DESCRIPTION:	DSN2, 1.0X0.6, 0.575P, (0402)		PAGE 1 OF 1	

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^{*}For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, <u>SOLDERRM/D</u>.

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