

NSR05301

500 mA, 30 V Schottky Diode

These Schottky diodes are optimized for low forward voltage drop and low leakage current that offers the most optimal power dissipation in applications. They are housed in space saving micro-packaging ideal for space constrained applications.

Features

- Smallest Package Available (01005); 0.445mm x 0.24mm
- 500 mA of Continuous Forward Current
- Low Forward Voltage Drop – 430 mV (Typ.) @ $I_F = 200$ mA
- Low Reverse Current – 25 μ A (Typ.) @ $V_R = 30$ V
- Low t_{rr} – 9 ns Typical
- Low Capacitance – 19 pF Typical

Typical Applications

- Mobile and Wearable Devices
- LED Boost Converters
- Buck and Boost dc-dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

MAXIMUM RATINGS

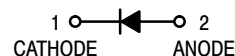
Rating	Symbol	Value	Unit
Operating Junction Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Seconds)	T_L	260	°C
Forward Current (DC)	I_F	500	mA
Reverse Voltage	V_R	30	V
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I_{FRM}	1.0	A
ESD Rating: Human Body Model Machine Model	ESD	>8.0 >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.



ON Semiconductor®

www.onsemi.com



MARKING DIAGRAM



X4DFN2
CASE 718AA



D = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
NSR05301MX4T5G	X4DFN2 (Pb-Free)	10000 / 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.

NSR05301

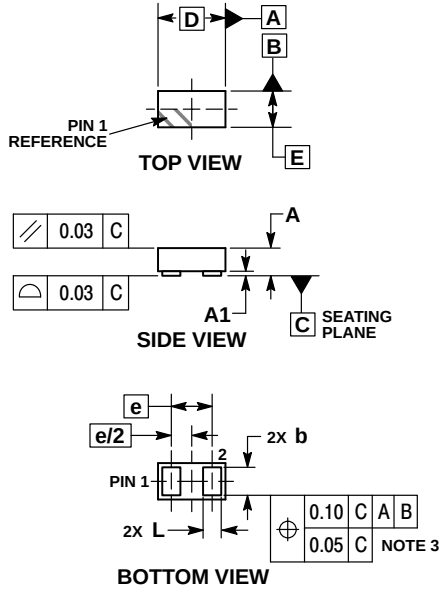
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage (V _R = 10 V) (V _R = 30 V)	I _R		15 25	50 100	μA
Forward Voltage (I _F = 100 mA) (I _F = 200 mA) (I _F = 500 mA)	V _F		355 430 640	480 540 800	mV
Total Capacitance (V _R = 5.0 V, f = 1 MHz)	C _T		19		pF
Reverse Recovery Time (I _F = I _R = 10 mA, I _{R(REC)} = 1.0 mA)	t _{rr}		9.0	11	ns

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.

PACKAGE DIMENSIONS

X4DFN2, 0.445x0.24, 0.27P (01005)
CASE 718AA
ISSUE A

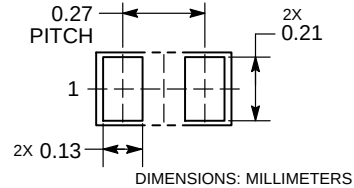


NOTES:

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

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.15	0.18	0.21
A1	—	—	0.03
b	0.170	0.185	0.200
D	0.415	0.445	0.475
E	0.210	0.240	0.270
e	0.270 BSC		
L	0.105	0.120	0.135

RECOMMENDED
MOUNTING FOOTPRINT*



See Application Note AND8398/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, SOLDERM/D.

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marketing.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910

ON Semiconductor Website: www.onsemi.com

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative