

NTES1N02

Product Preview

Power MOSFET 50 mAmps, 20 Volts N-Channel SC-75

- 2.5 V Gate Drive
- Low Threshold Voltage: $V_{th} = 0.5$ to 1.5 V
- High Speed
- Enhancement Mode
- Small Package

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

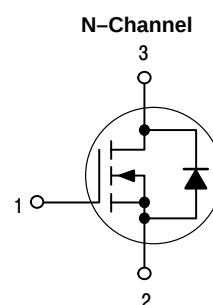
Rating	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	20	Vdc
Gate-to-Source Voltage – Continuous	V_{GSS}	10	Vdc
Drain Current – Continuous @ $T_A = 25^\circ\text{C}$	I_D	50	mA _{dc}
Total Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	100	mW
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Operating and Storage Temperature Range	T_{stg}	– 55 to 150	$^\circ\text{C}$



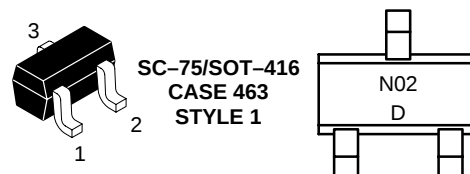
ON Semiconductor™

<http://onsemi.com>

50 mAmps
20 Volts
 $R_{DS(on)} = 10 \Omega$

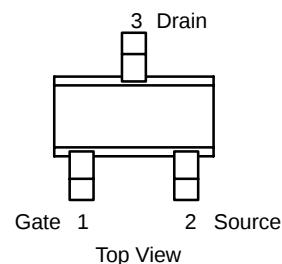


MARKING DIAGRAM



N02 = Device Code
D = Date Code

PIN ASSIGNMENT



ORDERING INFORMATION

Device	Package	Shipping
NTES1N02	SC-75	3000 Tape & Reel

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

NTES1N02

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Drain-to-Source Breakdown Voltage (V _{GS} = 0 Vdc, I _D = 100 μA)	V _{(BR)DSS}	20	–	–	Vdc
Drain Cut-off Current (V _{DS} = 20 Vdc, V _{GS} = 0 Vdc)	I _{DSS}	–	–	1.0	μAdc
Gate-Body Leakage Current (V _{GS} = 10 Vdc, V _{DS} = 0)	I _{GSS}	–	–	1.0	μAdc

ON CHARACTERISTICS

Gate Threshold Voltage (V _{DS} = 3.0 Vdc, I _D = 0.1 mAdc)	V _{th}	0.5	–	1.5	Vdc
Drain-to-Source On-Resistance (V _{GS} = 2.5 Vdc, I _D = 10 mAdc)	R _{DS(on)}	–	5.0	10	Ω
Forward Transfer Admittance (V _{DS} = 3.0 Vdc, I _D = 10 mAdc)	Y _{FS}	20	–	–	mS

DYNAMIC CHARACTERISTICS

Input Capacitance	(V _{DS} = 3.0 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz)	C _{iss}	–	5.5	–	pF
Output Capacitance	(V _{DS} = 3.0 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz)	C _{oss}	–	25	–	
Reverse Transfer Capacitance	(V _{DS} = 3.0 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz)	C _{rss}	–	1.6	–	

SWITCHING CHARACTERISTICS

Turn-On Delay Time	(V _{DD} = 3.0 Vdc, I _D = 10 mAdc, V _{GS} = 0 to 2.5 Vdc)	t _{on}	–	0.14	–	μs
Turn-Off Delay Time		t _{off}	–	0.14	–	

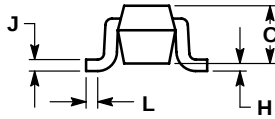
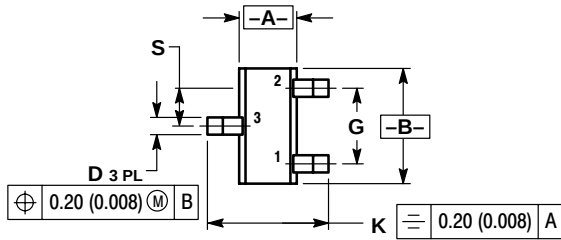
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PACKAGE DIMENSIONS

SC-75 (SC-90, SOT-416)

CASE 463-01

ISSUE B



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.80	0.028	0.031
B	1.40	1.80	0.055	0.071
C	0.60	0.90	0.024	0.035
D	0.15	0.30	0.006	0.012
G	1.00 BSC		0.039 BSC	
H	---	0.10	---	0.004
J	0.10	0.25	0.004	0.010
K	1.45	1.75	0.057	0.069
L	0.10	0.20	0.004	0.008
S	0.50 BSC		0.020 BSC	

- STYLE 1:
- PIN 1. BASE
 - EMITTER
 - COLLECTOR

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