

NTES1P02

Product Preview

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

- Low Threshold Voltage: $V_{th} = 0.5$ to 1.5 V
- High Speed
- Small Package
- Complementary to NTES1N02

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

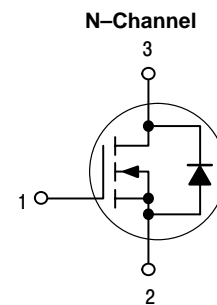
| Rating | Symbol | Value | Unit |
|--|-----------|-------------|------------------|
| Drain-to-Source Voltage | V_{DS} | 20 | Vdc |
| Gate-to-Source Voltage – Continuous | V_{GSS} | 7 | Vdc |
| Drain Current – Continuous @ $T_A = 25^\circ\text{C}$ | I_D | 50 | mA _{dc} |
| Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | P_D | 100 | mW |
| Channel Temperature | T_{ch} | 150 | $^\circ\text{C}$ |
| Operating and Storage Temperature Range | T_{stg} | - 55 to 150 | $^\circ\text{C}$ |



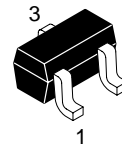
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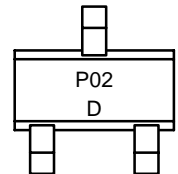
50 mAmps
20 VOLTS
 $R_{DS(on)} = 15 \Omega$



MARKING DIAGRAM

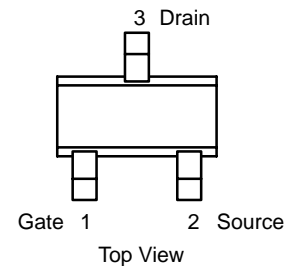


SC-75/SOT-416
CASE 463
STYLE 1



P02 = Device Code
D = Date Code

PIN ASSIGNMENT



ORDERING INFORMATION

| Device | Package | Shipping |
|----------|---------|------------------|
| NTES1P02 | 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.

NTES1P02

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

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} = 7.0 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)} | – | 7.0 | 15 | Ω |
| Forward Transfer Admittance (V _{DS} = 3.0 Vdc, I _D = 10 mAdc) | Y _{FS} | 15 | – | – | mS |

DYNAMIC CHARACTERISTICS

| | | | | | | |
|------------------------------|--|------------------|---|------|---|----|
| Input Capacitance | (V _{DS} = 3.0 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz) | C _{iss} | – | 10.4 | – | pF |
| Output Capacitance | (V _{DS} = 3.0 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz) | C _{oss} | – | 8.4 | – | |
| Reverse Transfer Capacitance | (V _{DS} = 3.0 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz) | C _{rss} | – | 2.8 | – | |

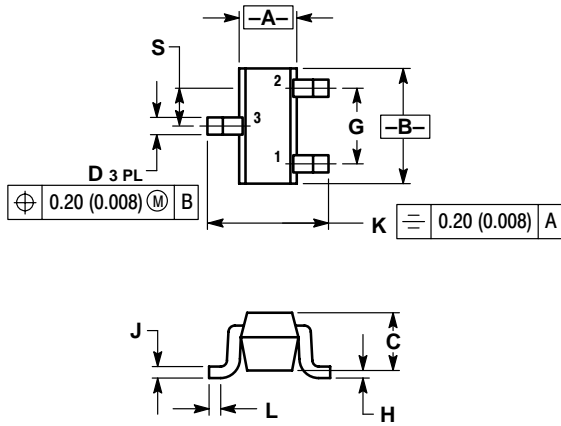
SWITCHING CHARACTERISTICS

| | | | | | | |
|---------------------|--|------------------|---|------|---|----|
| Turn-On Delay Time | (V _{DD} = 3.0 Vdc, I _D = 10 mAdc, V _{GS} = 0 to 2.5 Vdc) | t _{on} | – | 0.15 | – | μs |
| Turn-Off Delay Time | | t _{off} | – | 0.13 | – | |

NTES1P02

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
2. EMITTER
3. COLLECTOR

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