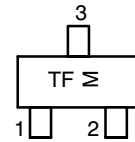
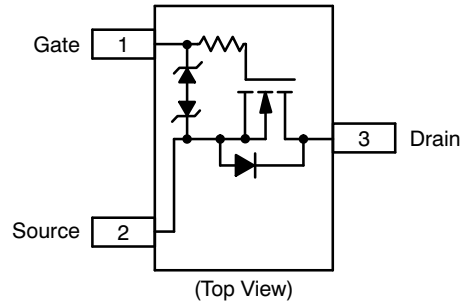
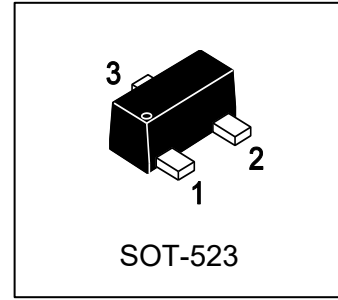


NTA4001N

S-NTA4001N

Small Signal MOSFET



TF = Specific Device Code
M = Month Code

1. FEATURES

- Low Gate Charge for Fast Switching
- Small 1.6 X 1.6 mm Footprint
- ESD Protected Gate
- ESD Protected:2000V
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Power Management Load Switch
- Level Shift
- Portable Applications such as Cell Phones, Media Players, Digital Cameras, PDA's, Video Games, Hand Held Computers, etc.

3. DEVICE MARKING AND RESISTOR VALUES

| Device | Marking | Shipping |
|----------|---------|----------------|
| NTA4001N | TF | 3000/Tape&Reel |

4. MAXIMUM RATINGS(Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|---|----------|----------|------|
| Drain-to-Source Voltage | VDSS | 20 | V |
| Gate-to-Source Voltage | VGS | ±10 | V |
| Continuous Drain Current (Note 1) | ID | 238 | mA |
| Power Dissipation (Note 1) | PD | 300 | mW |
| Pulsed Drain Current (tp ≤ 10 μs) | IDM | 714 | mA |
| Operating Junction and Storage Temperature | Tj, Tstg | -55~+150 | °C |
| Continuous Source Current (Body Diode) | ISD | 238 | mA |
| Lead Temperature for Soldering Purposes (1/8" from case for 10 s) | TL | 260 | °C |

5. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|---|--------|--------|------|
| Junction-to-Ambient – Steady State (Note 1) | RθJA | 416 | °C/W |

1. Surface-mounted on FR4 board using 1 in sq pad size



6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

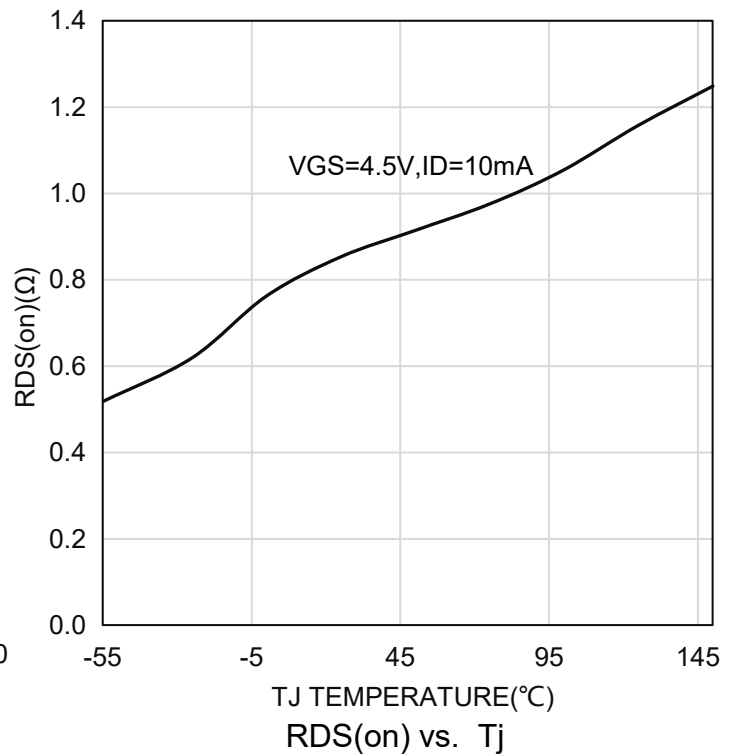
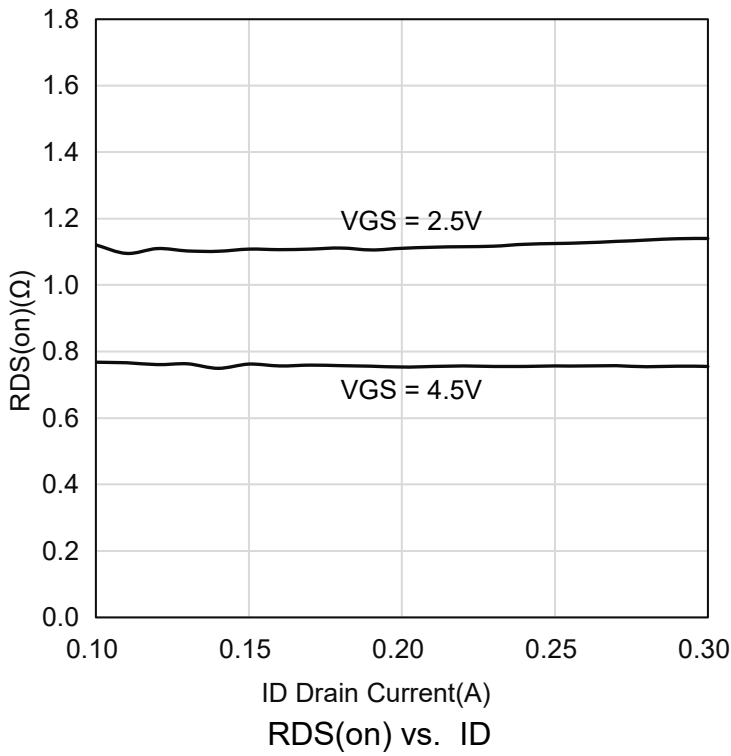
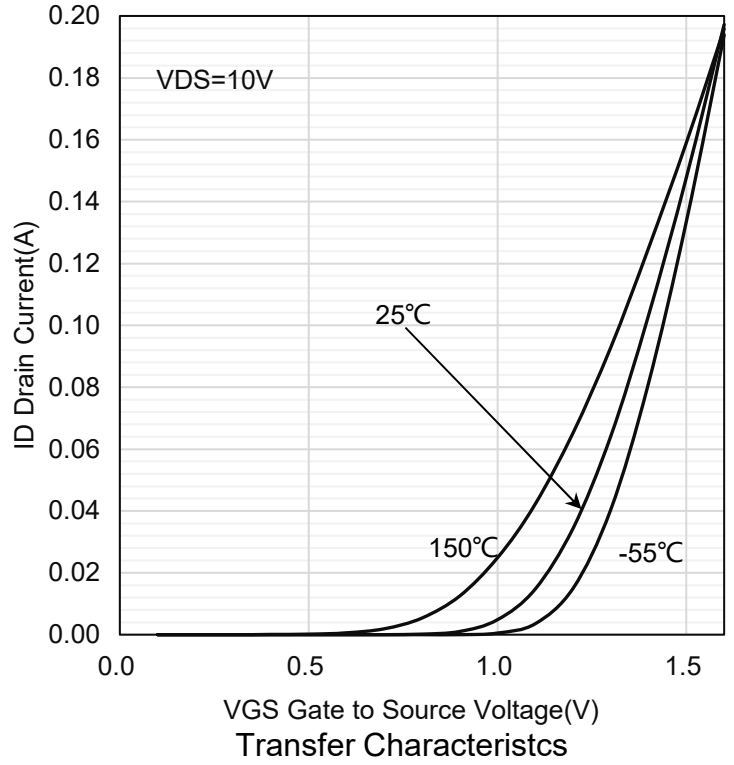
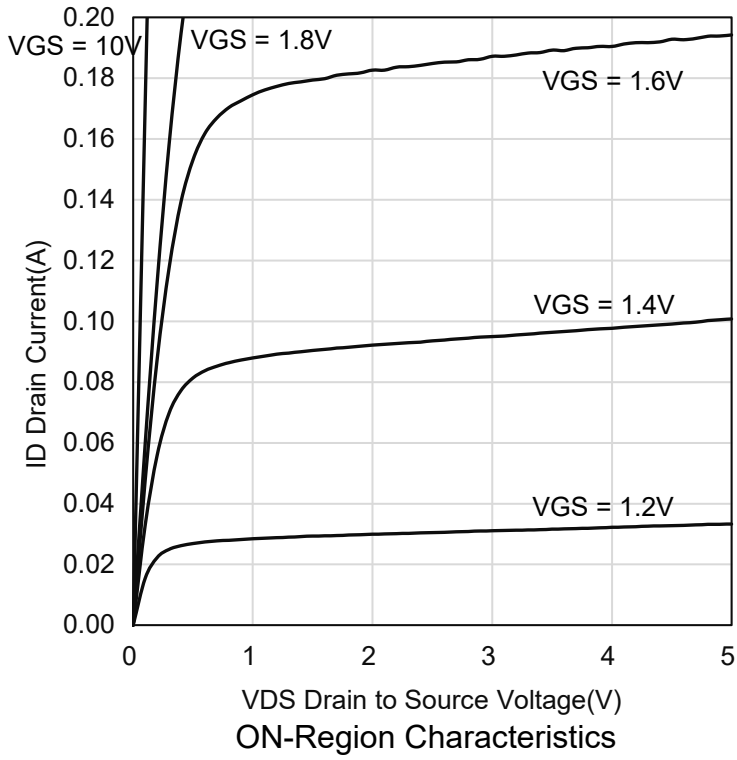
| Characteristic | Symbol | Min. | Typ. | Max. | Unit | |
|---|---|---------|------------|----------|------|----|
| Drain–Source Breakdown Voltage (VGS = 0, ID = 100μA) | VBRDSS | 20 | - | - | V | |
| Zero Gate Voltage Drain Current (VGS = 0, VDS = 20 V) | IDSS | - | - | 1 | μA | |
| Gate–to–Source Leakage Current (VDS = 0 V, VGS = ±10 V) | IGSS | - | - | ±100 | μA | |
| Gate Threshold Voltage (VDS = 3 V, ID = 100μA) | VGS(th) | 0.5 | 1 | 1.5 | V | |
| Drain–to–Source On Resistance (VGS = 4.5 V, ID = 10 mA) (VGS = 2.5 V, ID = 10 mA) | RDS(on) | - - | 1.5 2.2 | 3 3.5 | Ω | |
| Input Capacitance (VDS = 5.0 V, f = 1 MHz, VGS = 0 V) | Ciss | - | 11.5 | 20 | pF | |
| Output Capacitance (VDS = 5.0 V, f = 1 MHz, VGS = 0 V) | Coss | - | 10 | 15 | pF | |
| Reverse Transfer Capacitance (VDS = 5.0 V, f = 1 MHz, VGS = 0 V) | Crss | - | 3.5 | 6 | pF | |
| Turn–On Delay Time | (VGS = 4.5 V, VDS = 5 V, ID = 10 mA, RG = 10 Ω) | td(ON) | - | 13 | - | ns |
| Rise Time | | tr | - | 15 | - | |
| Turn–Off Delay Time | | td(OFF) | - | 98 | - | |
| Fall Time | | tf | - | 60 | - | |
| Diode Forward Voltage (VGS = 0 V, IS = 10 mA) | VSD | - | 0.66 | 0.8 | V | |

2. Pulse Test: pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

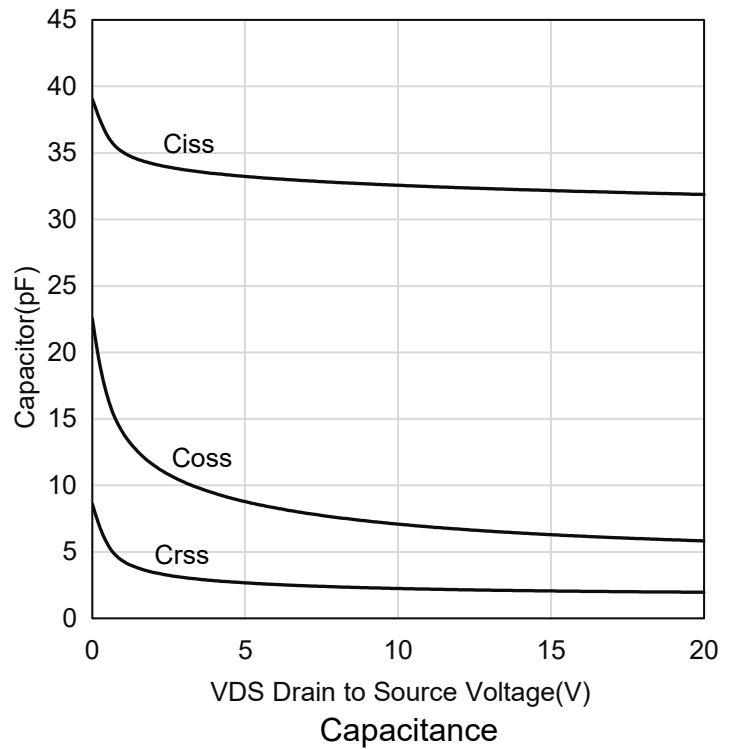
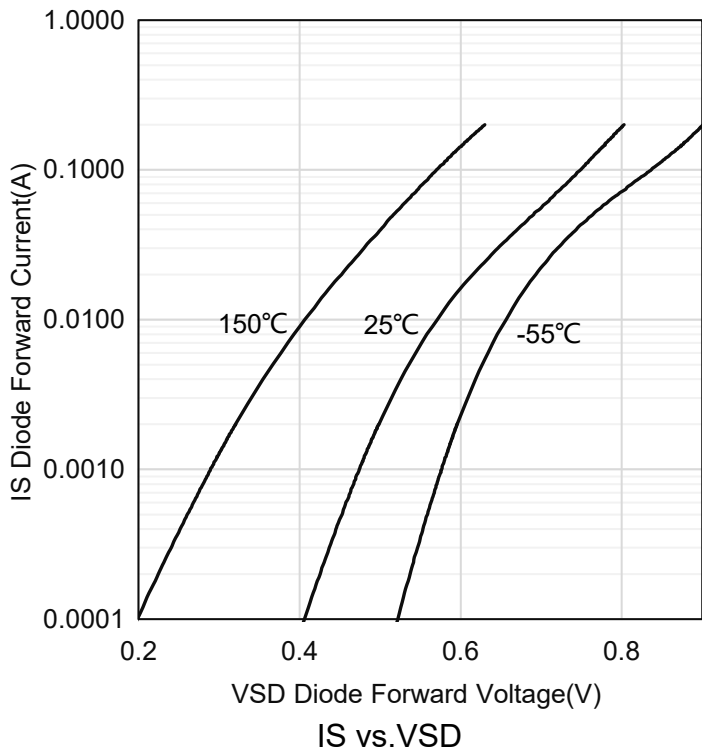
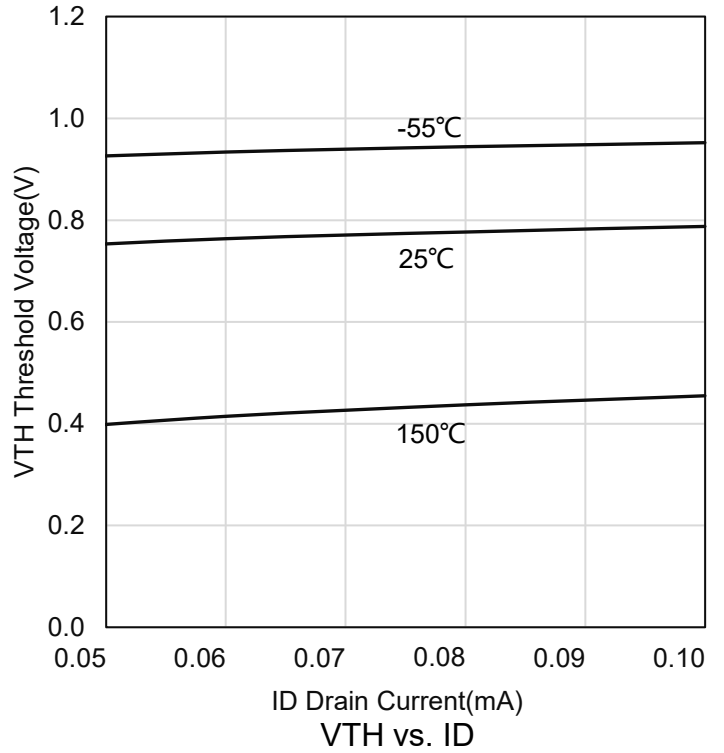
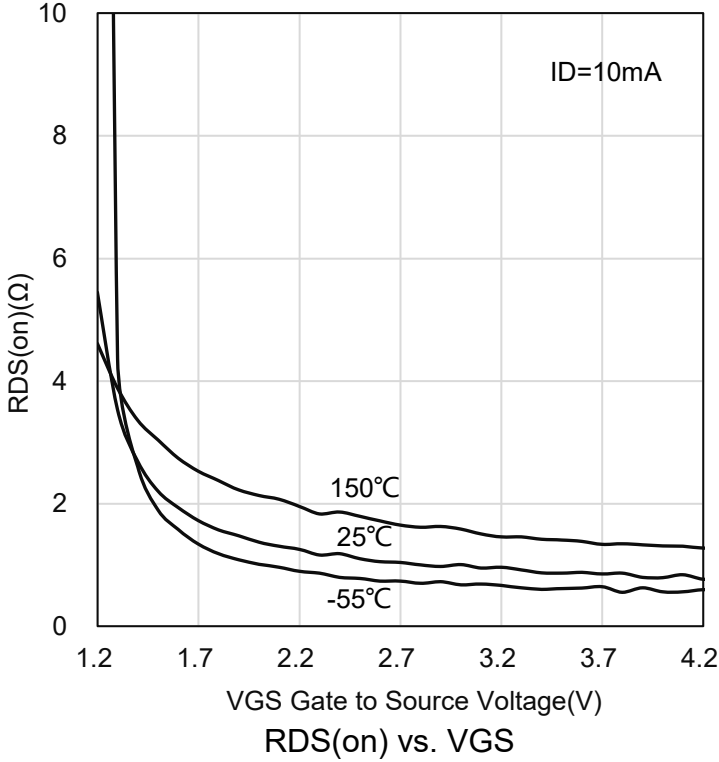
3. Switching characteristics are independent of operating junction temperatures.



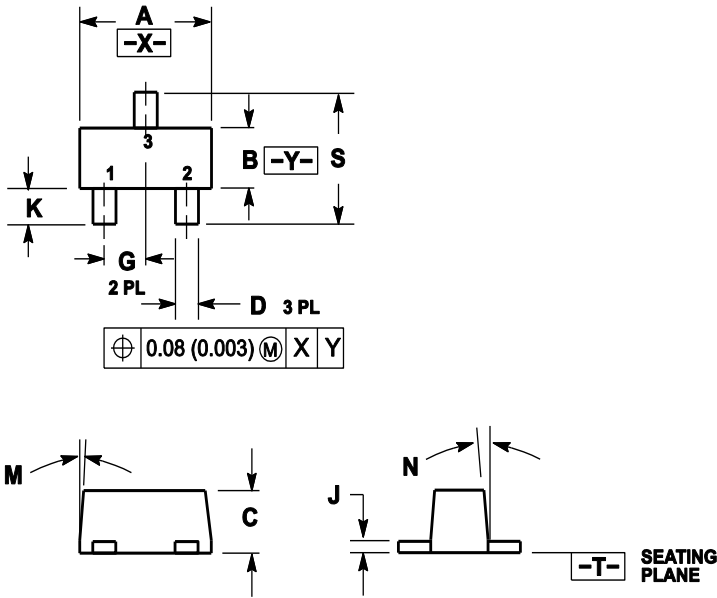
7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS



Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|----------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |
| B | 0.75 | 0.85 | 0.95 | 0.030 | 0.034 | 0.040 |
| C | 0.60 | 0.70 | 0.80 | 0.024 | 0.028 | 0.031 |
| D | 0.23 | 0.28 | 0.33 | 0.009 | 0.011 | 0.013 |
| G | 0.50BSC | | | 0.020BSC | | |
| H | 0.53REF | | | 0.021REF | | |
| J | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| K | 0.30 | 0.40 | 0.50 | 0.012 | 0.016 | 0.02 |
| L | 1.10REF | | | 0.043REF | | |
| M | --- | --- | 10° | --- | --- | 10° |
| N | --- | --- | 10° | --- | --- | 10° |
| S | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |

9. SOLDERING FOOTPRINT

