

VN2406L

Preferred Device

Small Signal MOSFET 200 mAmps, 240 Volts N-Channel TO-92



ON Semiconductor™

<http://onsemi.com>

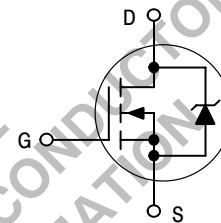
MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|-----------------------|----------------------|----------------------|
| Drain-Source Voltage | V_{DSS} | 240 | Vdc |
| Drain-Gate Voltage | V_{DGR} | 240 | Vdc |
| Gate-Source Voltage - Continuous - Non-repetitive ($t_p \leq 50 \mu s$) | V_{GS} V_{GSM} | ± 20 ± 40 | Vdc Vpk |
| Continuous Drain Current | I_D | 200 | mA _{dc} |
| Pulsed Drain Current | I_{DM} | 500 | mA _{dc} |
| Power Dissipation @ $T_C = 25^\circ C$ Derate above $25^\circ C$ | P_D | 350 2.8 | mW mW/ $^\circ C$ |
| Operating and Storage Temperature | T_J, T_{stg} | - | $^\circ C$ |

200 mAmps
240 VOLTS

$R_{DS(on)} = 6 \Omega$

N-Channel



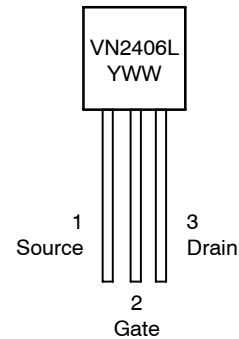
THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|-----------------|-------|--------------|
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 312.5 | $^\circ C/W$ |
| Maximum Lead Temperature for Soldering Purposes, 1/16" from case for 10 seconds | T_L | 300 | $^\circ C$ |



TO-92
CASE 29
Style 22

MARKING DIAGRAM & PIN ASSIGNMENT



Y = Year
WW = Work Week

ORDERING INFORMATION

| Device | Package | Shipping |
|------------|---------|----------------|
| VN2406L | TO-92 | 1000 Units/Box |
| VN2406LZL1 | TO-92 | 2000 Ammo Pack |

Preferred devices are recommended choices for future use and best overall value.

VN2406L

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

| Characteristic | Symbol | Min | Max | Unit |
|---|----------------------|-----|-----------|------|
| STATIC CHARACTERISTICS | | | | |
| Drain-Source Breakdown Voltage (V _{GS} = 0, I _D = 100 μA) | V _{(BR)DSS} | 240 | - | Vdc |
| Zero Gate Voltage Drain Current (V _{DS} = 120 Vdc, V _{GS} = 0) (V _{DS} = 120 Vdc, V _{GS} = 0, T _A = 125°C) | I _{DSS} | - | 10 500 | μAdc |
| Gate-Body Leakage (V _{DS} = 0, V _{GS} = ±15 V) | I _{GSS} | - | ±100 | nAdc |
| Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 1.0 mA) | V _{GS(th)} | 0.8 | 2.0 | Vdc |
| On-State Drain Current (Note 1) (V _{GS} = 10 V, V _{DS} ≥ 2.0 V _{DS(on)}) | I _{D(on)} | 1.0 | - | Adc |
| Drain-Source On Resistance (Note 1) (V _{GS} = 2.5 V, I _D = 0.1 A) (V _{GS} = 10 V, I _D = 0.5 A) | r _{DS(on)} | - | 10 6.0 | Ω |
| Forward Transconductance (Note 1) (V _{DS} = 10 V, I _D = 0.5 A) | g _{fs} | 300 | - | mS |

DYNAMIC CHARACTERISTICS

| | | | | | |
|------------------------------|---|------------------|---|-----|----|
| Input Capacitance | (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz) | C _{iss} | - | 125 | pF |
| Output Capacitance | | C _{oss} | - | 50 | pF |
| Reverse Transfer Capacitance | | C _{rss} | - | 20 | pF |

SWITCHING CHARACTERISTICS

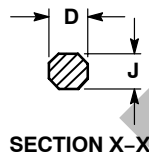
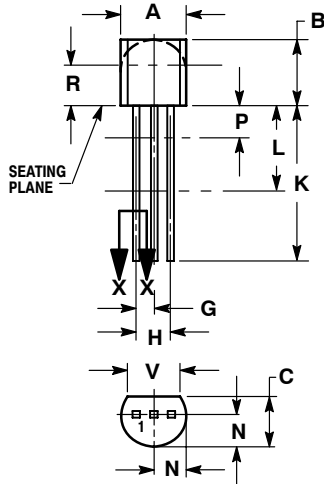
| | | | | | |
|---------------|--|--------------------|---|-----|----|
| Turn-On Time | (V _{DD} = 60 Vdc, I _D = 0.4 A, R _L = 150 Ω, R _G = 25 Ω) | t _(on) | - | 8.0 | ns |
| | | t _(r) | - | 8.0 | ns |
| Turn-Off Time | | t _(off) | - | 23 | ns |
| | | t _(f) | - | 34 | ns |

1. Pulse Test; Pulse Width < 300 μs, Duty Cycle ≤ 2.0%.

VN2406L

PACKAGE DIMENSIONS

TO-92
CASE 29-11
ISSUE AL



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.021 | 0.407 | 0.533 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 0.095 | 0.105 | 2.42 | 2.66 |
| J | 0.015 | 0.020 | 0.39 | 0.50 |
| K | 0.500 | --- | 12.70 | --- |
| L | 0.250 | --- | 6.35 | --- |
| N | 0.080 | 0.105 | 2.04 | 2.66 |
| P | --- | 0.100 | --- | 2.54 |
| R | 0.115 | --- | 2.93 | --- |
| V | 0.135 | --- | 3.43 | --- |

STYLE 22:
PIN 1. SOURCE
2. GATE
3. DRAIN

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Phone: 81-3-5740-2700
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