



Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)}$ TYP | I_D |
|---------------|------------------|-------|
| -30V | 30mΩ@-10V | -6A |
| | 50mΩ@-4.5V | |
| 30V | 29mΩ@10V | 6A |
| | 40mΩ@4.5V | |

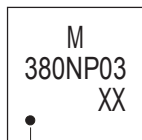
Feature

- Low drain-source ON-resistance
- High forward transfer admittance
- Low leakage current

Application

- Low voltage applications

MARKING:

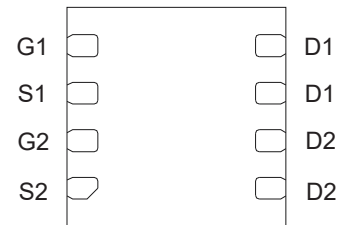


M380NP03 = Device Code
XX = Date Code

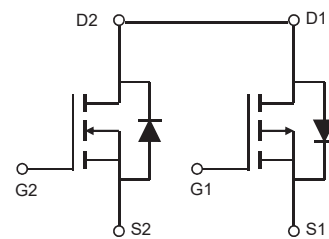
PIN 1

Preliminary

DFN3x3-8L



Schematic diagram



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

| Parameter | Symbol | Value | Unit | Test Condition |
|---|-----------------|-----------|--------------------|--------------------------|
| P-MOSFET | | | | |
| Drain-Source Voltage | V_{DS} | -30 | V | |
| Gate-Source Voltage | V_{GS} | ± 20 | V | |
| Continuous Drain Current ⁽¹⁾ | I_D | -6 | A | $T_A = 25^\circ\text{C}$ |
| Pulsed Drain Current | I_{DM} | -24 | A | |
| N-MOSFET | | | | |
| Drain-Source Voltage | V_{DS} | 30 | V | |
| Gate-Source Voltage | V_{GS} | ± 20 | V | |
| Continuous Drain Current | I_D | 6 | A | $T_A = 25^\circ\text{C}$ |
| Pulsed Drain Current ⁽¹⁾ | I_{DM} | 24 | A | |
| Temperature and Thermal Resistance | | | | |
| Thermal Resistance ⁽²⁾ | $R_{\theta JA}$ | 44.6 | $^\circ\text{C/W}$ | from Junction to Ambient |
| Power Dissipation | P_D | 2.8 | W | $T_A = 25^\circ\text{C}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ | |
| Storage Temperature | T_{STG} | -55~ +150 | $^\circ\text{C}$ | |

P-channel MOSFET ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Type | Max | Unit |
|--|----------------------|---|------|------|------|------|
| Static Characteristics | | | | | | |
| Drain-source breakdown voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = -250μA | -30 | | | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -24V, V _{GS} = 0V | | | -1 | μA |
| Gate-body leakage current | I _{GSS} | V _{GS} = ±20V, V _{DS} = 0V | | | ±100 | nA |
| Gate threshold voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250μA | -1.4 | -1.9 | -2.4 | V |
| Drain-source on-resistance ⁽³⁾ | R _{DS(on)} | V _{GS} = -10V, I _D = -5A | | 30 | 38 | mΩ |
| | | V _{GS} = -4.5V, I _D = -4A | | 50 | 64 | |
| Forward transconductance | g _{FS} | V _{DS} = -10V, I _D = -5A | | 16 | | S |
| Diode forward voltage ⁽³⁾ | V _{DS} | I _S = -5A, V _{GS} = 0V | | | -1.2 | V |
| Dynamic characteristics⁽⁴⁾ | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} = -15V, V _{GS} = 0V, F = 1.0MHz | | 650 | | pF |
| Output Capacitance | C _{oss} | | | 115 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 85 | | |
| Total gate charge | Q _g | V _{DS} = -15V, I _D = -5A, V _{GS} = -10V | | 15 | | nC |
| Gate-source charge | Q _{gs} | | | 4 | | |
| Gate-drain charge | Q _{gd} | | | 7.5 | | |
| Switching Characteristics⁽⁴⁾ | | | | | | |
| Turn-on delay time | t _{d(on)} | V _{DD} = -15V, I _D = -5A V _{GS} = -10V, R _{GEN} = 1Ω R _L = 30Ω | | | 15 | nS |
| Turn-on rise time | t _r | | | | 15 | |
| Turn-off delay time | t _{d(off)} | | | | 70 | |
| Turn-off fall time | t _f | | | | 25 | |

Preliminary

N-channel MOSFET ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise noted)

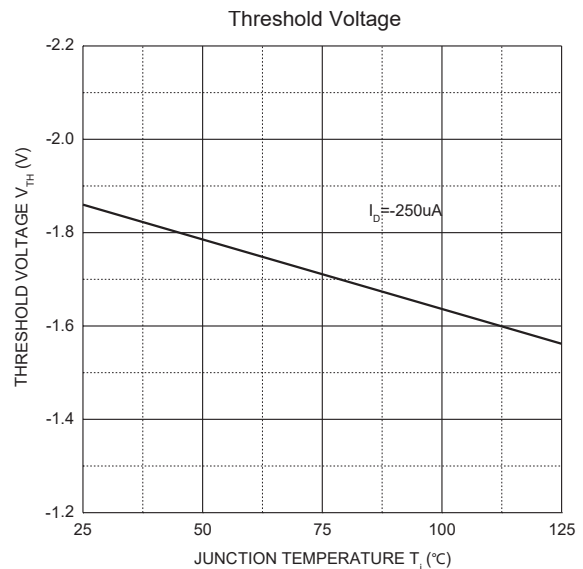
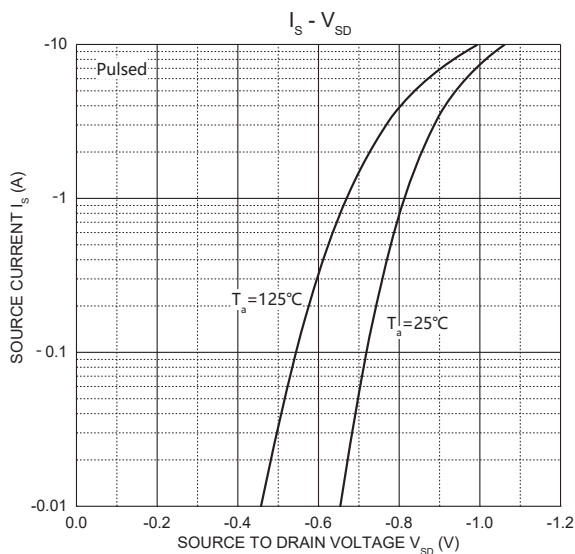
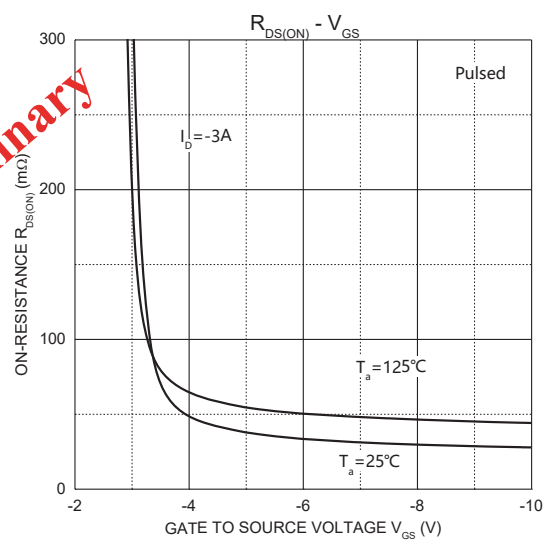
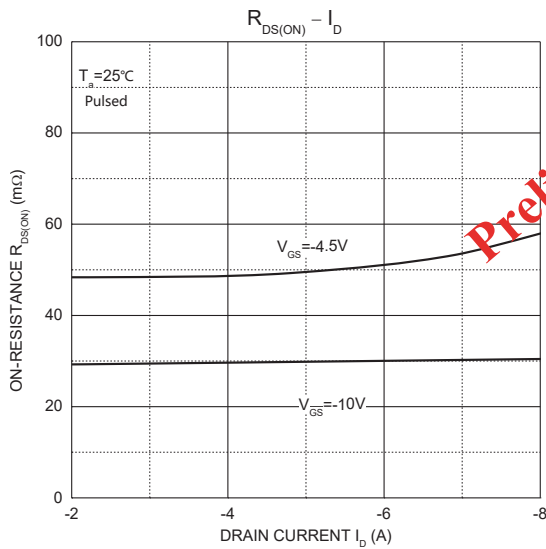
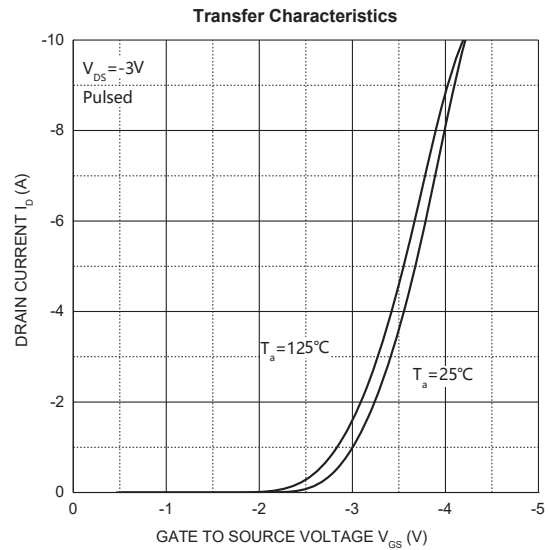
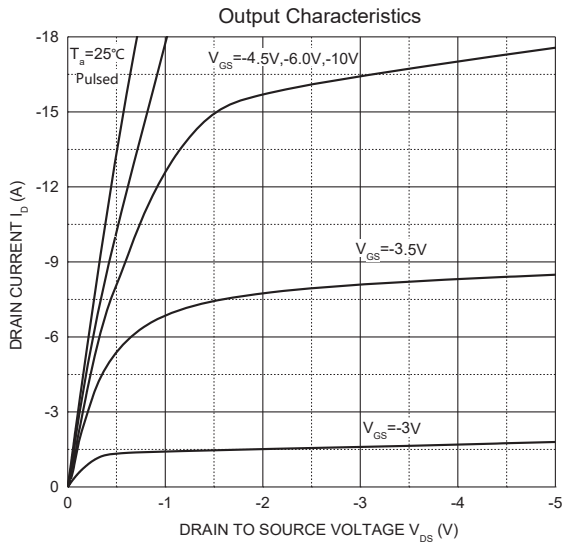
| Parameter | Symbol | Test Condition | Min | Type | Max | Unit |
|--|---------------|--|-----|------|-----------|------------|
| Static Characteristics | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 30 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = 24V, V_{GS} = 0V$ | | | 1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ± 100 | nA |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 1.0 | 1.5 | 2.0 | V |
| Drain-source on-resistance ⁽³⁾ | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 5A$ | | 29 | 38 | m Ω |
| | | $V_{GS} = 4.5V, I_D = 5A$ | | 40 | 52 | |
| Forward transconductance | g_{FS} | $V_{DS} = 10V, I_D = 5A$ | | 12 | | S |
| Diode Forward voltage ⁽³⁾ | V_{DS} | $I_S = 5A, V_{GS} = 0V$ | | | 1.2 | V |
| Dynamic characteristics⁽⁴⁾ | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = 15V, V_{GS} = 0V, F = 1.0MHz$ | | 310 | | pF |
| Output Capacitance | C_{oss} | | | 82 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 36 | | |
| Total gate charge | Q_g | $V_{DS} = 15V, I_D = 5A, V_{GS} = 10V$ | | 13 | | nC |
| Gate-source charge | Q_{gs} | | | 3 | | |
| Gate-drain charge | Q_{gd} | | | 4.5 | | |
| Switching Characteristics⁽⁴⁾ | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD} = 15V, R_L = 8\Omega$ $V_{GS} = 10V, V_{GEN} = 3\Omega$ | | | 10 | ns |
| Turn-on rise time | t_r | | | | 8 | |
| Turn-off delay time | $t_{d(off)}$ | | | | 30 | |
| Turn-off fall time | t_f | | | | 5 | |

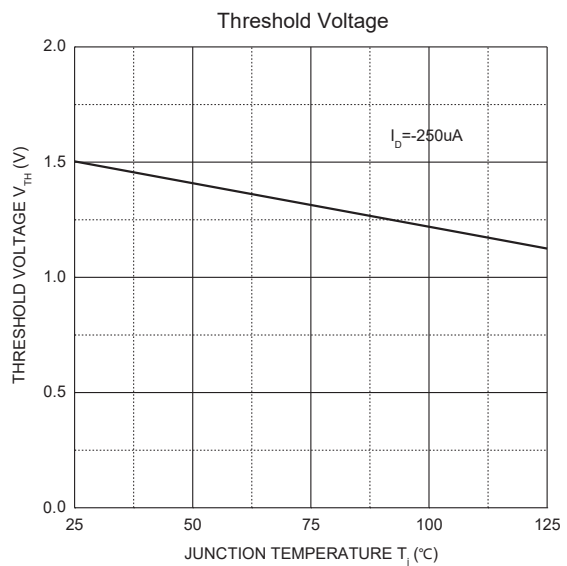
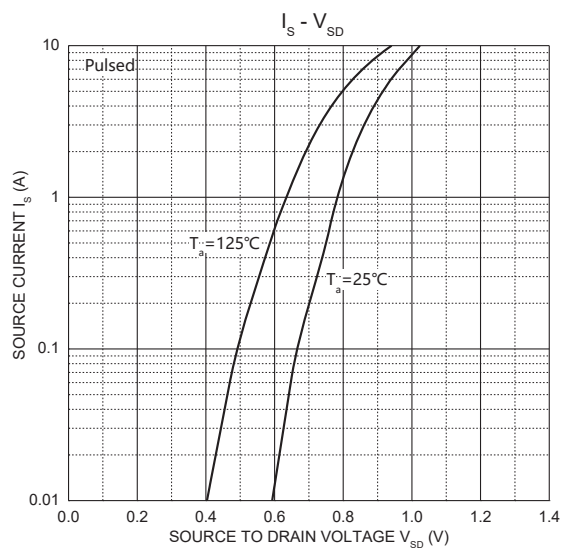
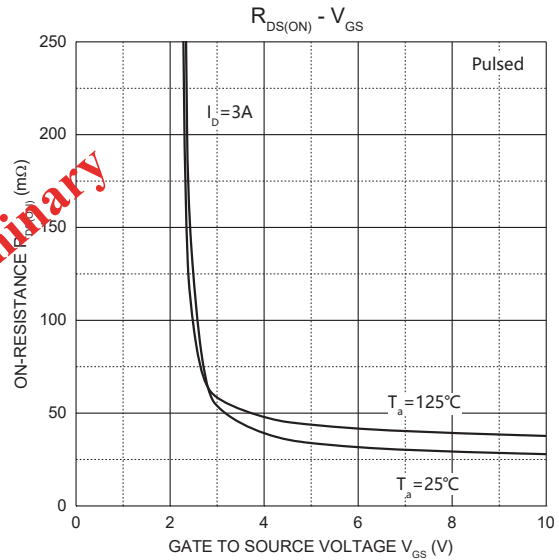
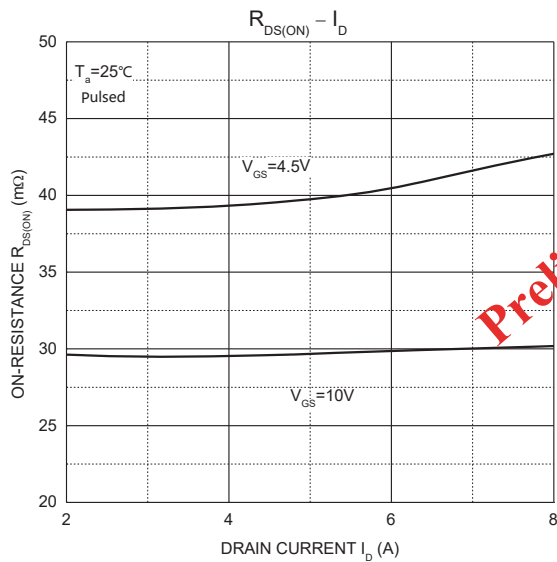
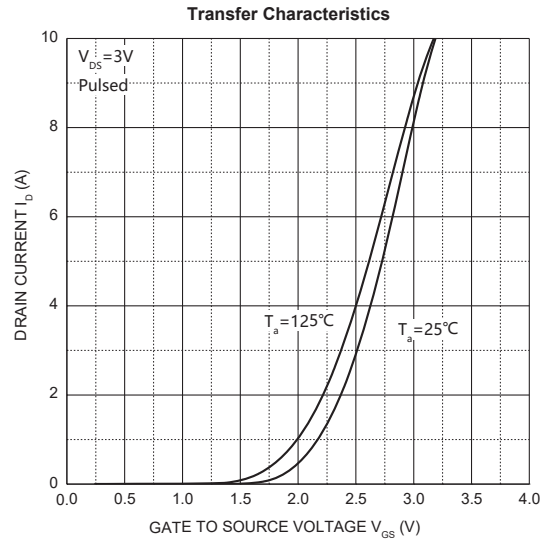
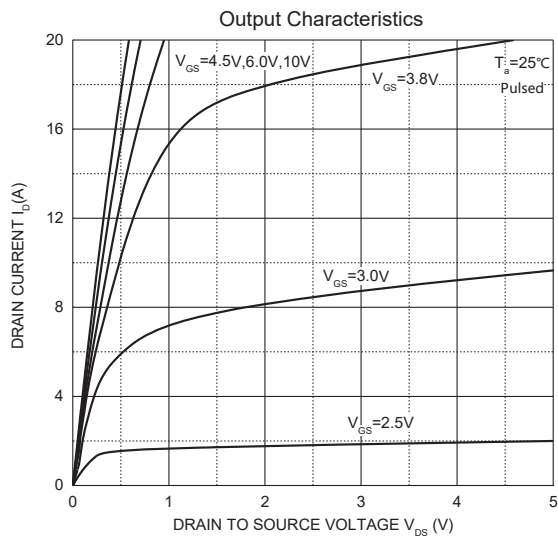
Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t < 5$ sec.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

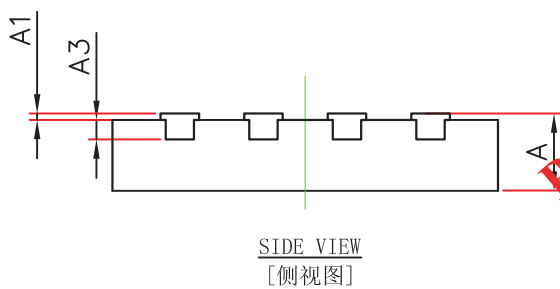
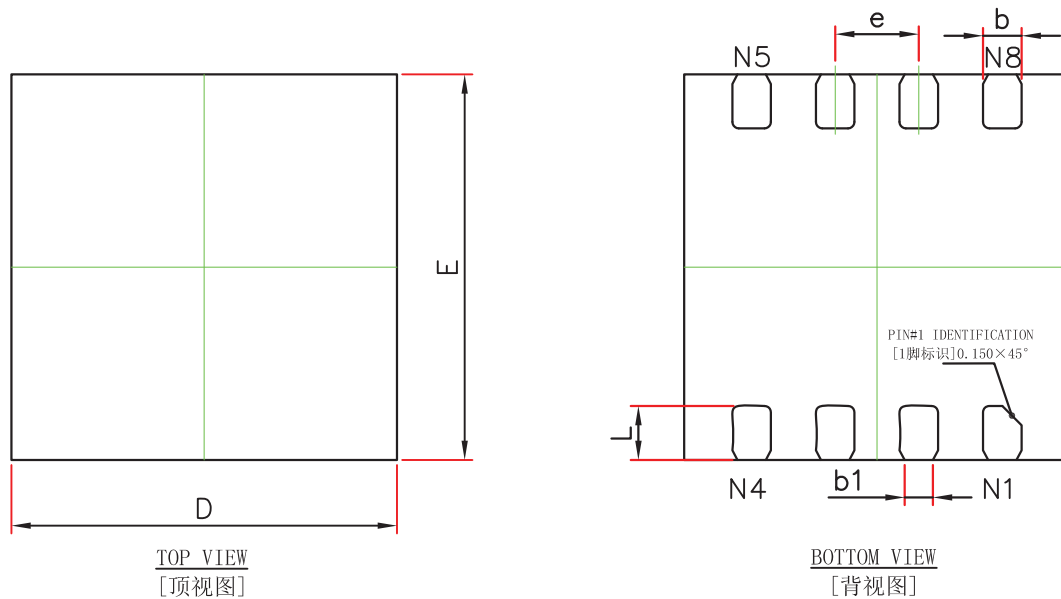
Typical Electrical and Thermal Characteristics

P-Channel MOS





DFN3X3-8L Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.700 | 0.800 | 0.028 | 0.031 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| A3 | 0.203REF. | | 0.008REF. | |
| D | 2.900 | 3.100 | 0.114 | 0.122 |
| E | 2.900 | 3.100 | 0.114 | 0.122 |
| b | 0.250 | 0.350 | 0.010 | 0.014 |
| b1 | 0.220REF. | | 0.009REF. | |
| e | 0.650BSC. | | 0.026BSC. | |
| L | 0.370 | 0.470 | 0.015 | 0.019 |

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)