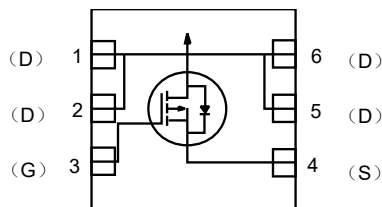


Description

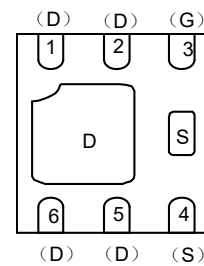
The enhancement mode MOS is extremely high density cell and low on-resistance.

| MOSFET Product Summary | | |
|------------------------|------------------------|----------|
| $V_{DS}(V)$ | $R_{DS(on)}(\Omega)$ | $I_D(A)$ |
| -30 | 0.053 @ $V_{GS}=-10V$ | -4.2 |
| | 0.065 @ $V_{GS}=-4.5V$ | |

Internal structure



Bottom View


Absolute maximum rating@25°C

| Rating | | Symbol | Value | Units |
|--|------------|-----------------|------------|---------------|
| Drain-Source Voltage | | V_{DS} | -30 | V |
| Gate-Source Voltage | | V_{GS} | ± 12 | V |
| Drain Current | Continuous | I_D | -4.2 | A |
| | Pulsed | I_D | -30 | A |
| Maximum Power Dissipation | | P_D | 2.4 | W |
| Thermal resistance, Note 1 | | $R_{\theta JA}$ | 52 | $^{\circ}C/W$ |
| Operating Junction and Storage Temperature Range | | T_J, T_{STG} | -55 To 150 | $^{\circ}C$ |

Note1: FR4 Board using 1 square inch pad size, 1oz copper

Electrical characteristics per line@25°C(unless otherwise specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------------|--------------|---|------|------|-----------|------------|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $I_D = -250\mu A, V_{GS} = 0V$ | -30 | - | - | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = -24V, V_{GS} = 0V$ | - | - | -1 | μA |
| Gate-Body Leakage Current | I_{GSS} | $V_{DS} = 0V, V_{GS} = \pm 12V$ | - | - | ± 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\mu A$ | -0.7 | | -1.3 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS} = -10V, I_D = -4.2A$ | - | 53 | 60 | m Ω |
| | | $V_{GS} = -4.5V, I_D = -4A$ | - | 65 | 75 | m Ω |
| | | $V_{GS} = -2.5V, I_D = -2A$ | | 86 | 120 | m Ω |
| Forward Trans conductance | gFS | $V_{GS} = -5V, I_D = -5A, T_A = 125^\circ C$ | 7 | 11 | | S |
| DYNAMIC PARAMETERS | | | | | | |
| Input Capacitance | C_{ISS} | $V_{GS} = 0V, V_{DS} = -15V,$ $f = 1MHz$ | - | 950 | | pF |
| Output Capacitance | C_{OSS} | | - | 110 | | pF |
| Reverse Transfer Capacitance | C_{RSS} | | - | 75 | | pF |
| SWITCHING PARAMETERS | | | | | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD} = -15V, V_{GS} = -10V,$ $R_L = 3.6\Omega, R_G = 6\Omega$ | - | | 20 | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | - | | 35 | ns |

Typical Characteristics

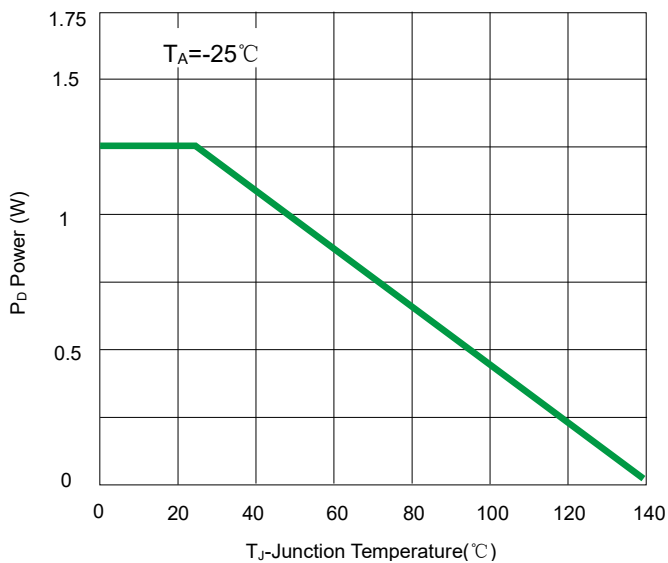


Fig 1. Power Dissipation

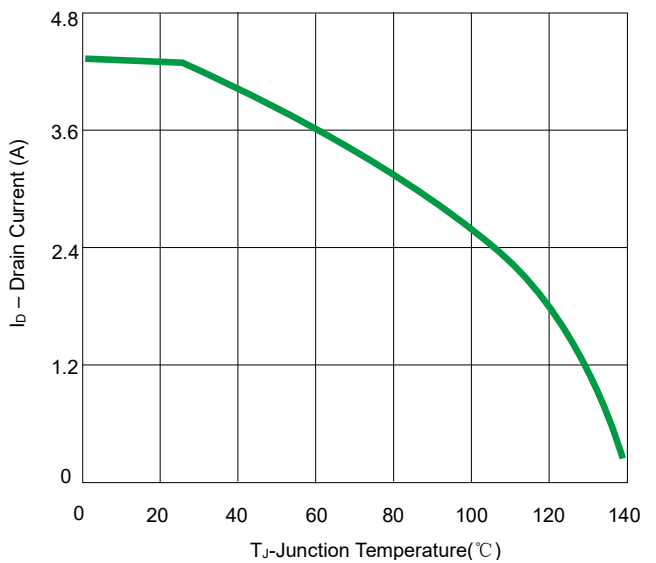


Fig 2. Drain Current

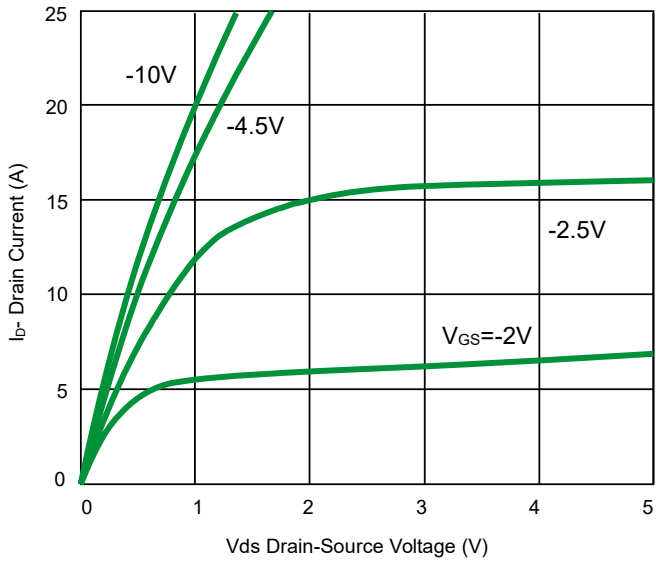


Fig 3. Output Characteristics

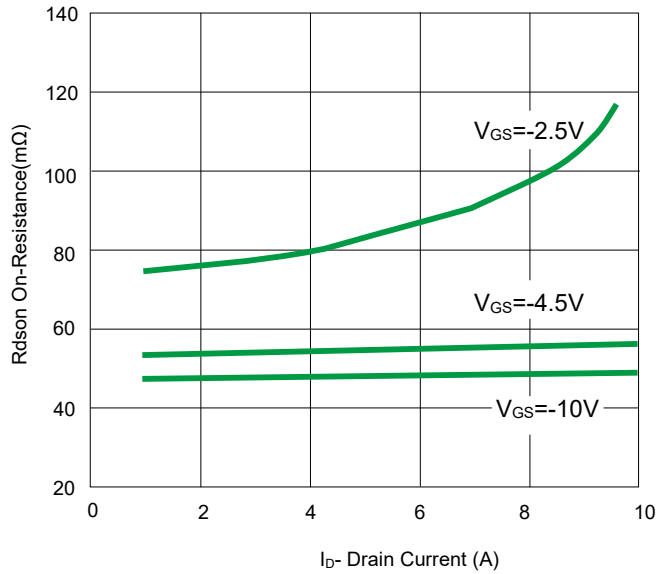


Fig 4. Drain-Source On-Resistance

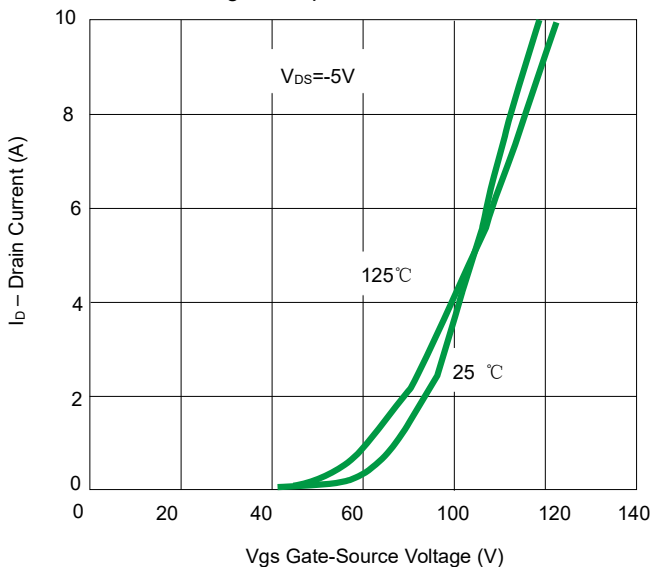


Fig 5. Transfer Characteristics

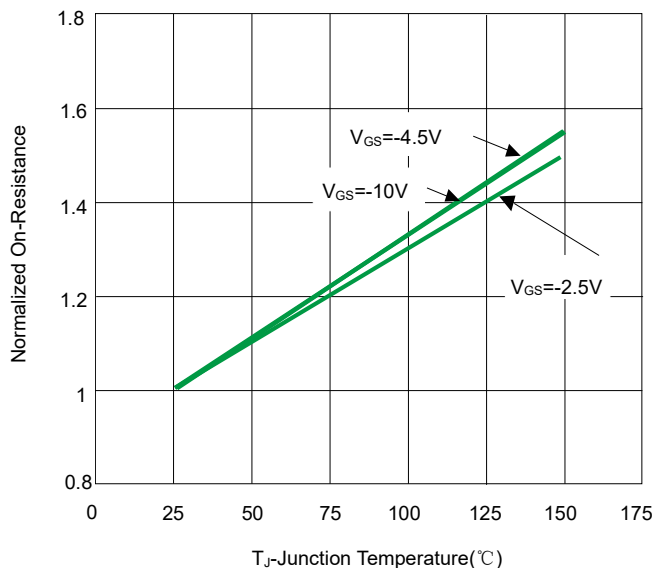


Fig 6. Transfer Characteristics

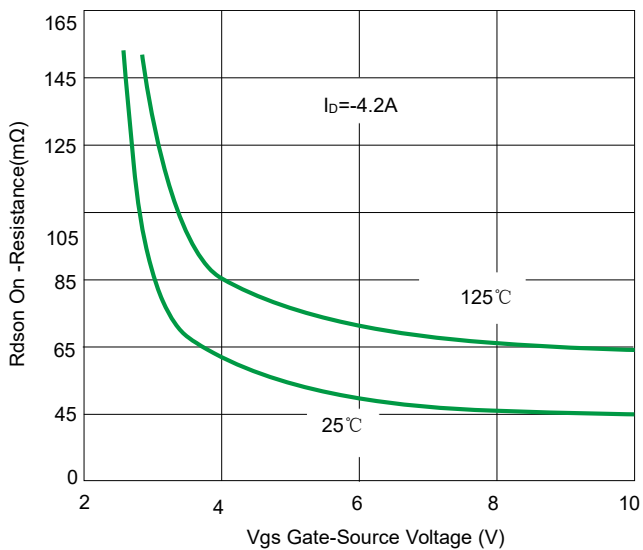


Fig. 7 $R_{D_S(on)}$ vs V_{GS}

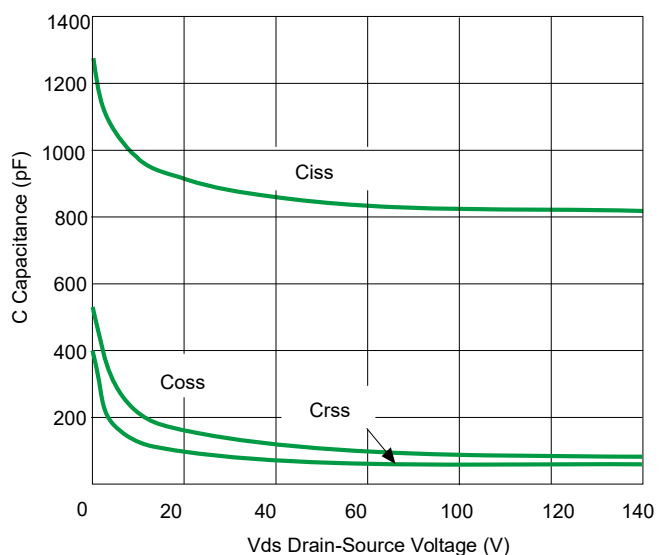


Fig.8 Capacitance vs V_{D_S}

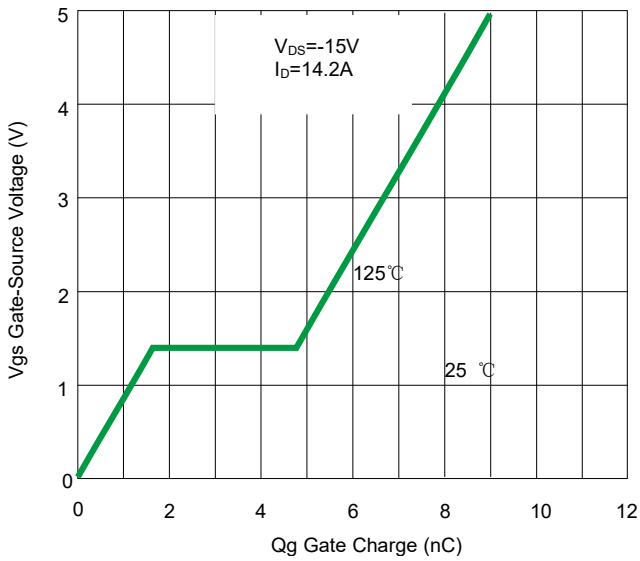


Fig. 9 Gate Charge

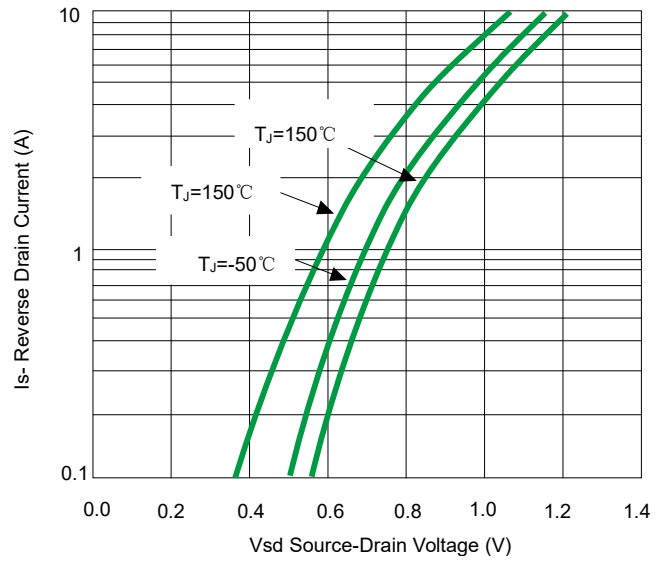


Fig.10 Source- Drain Diode Forward

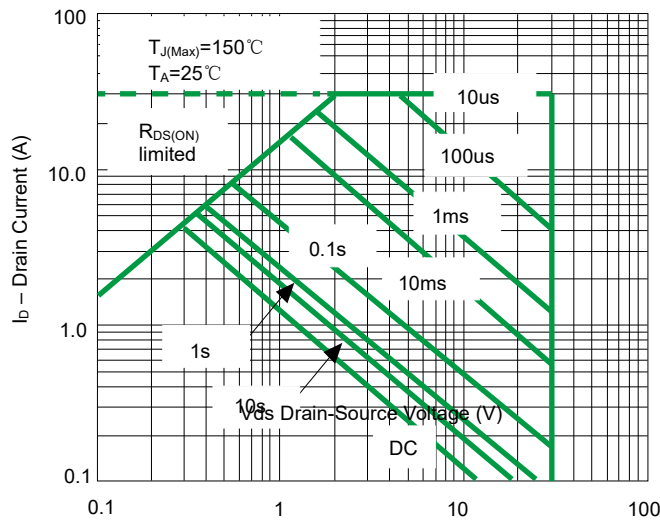


Fig. 11 Safe Operation Area

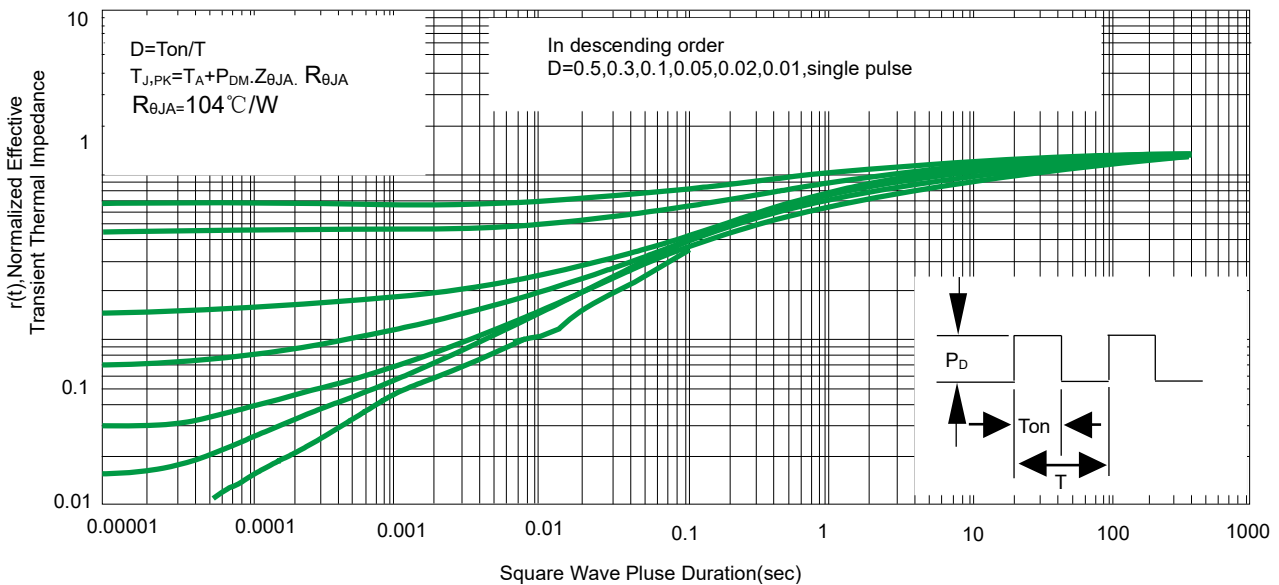
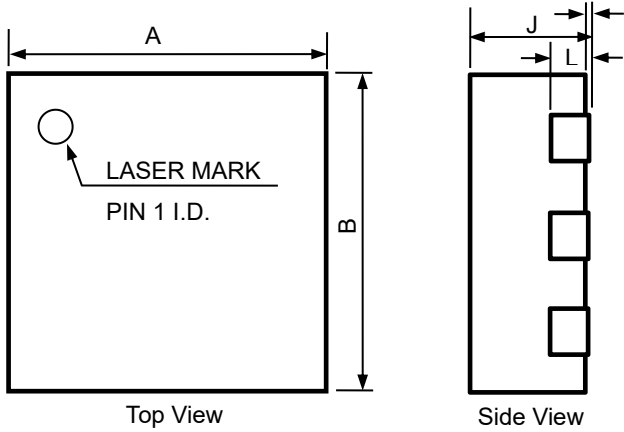
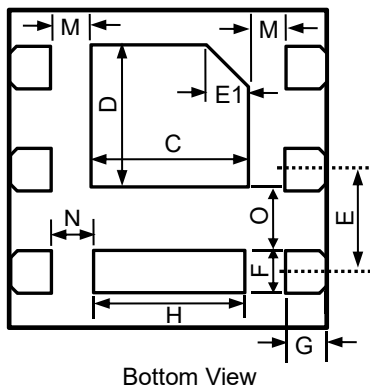


Fig.12 Normalized Maximum Transient Thermal Impedance

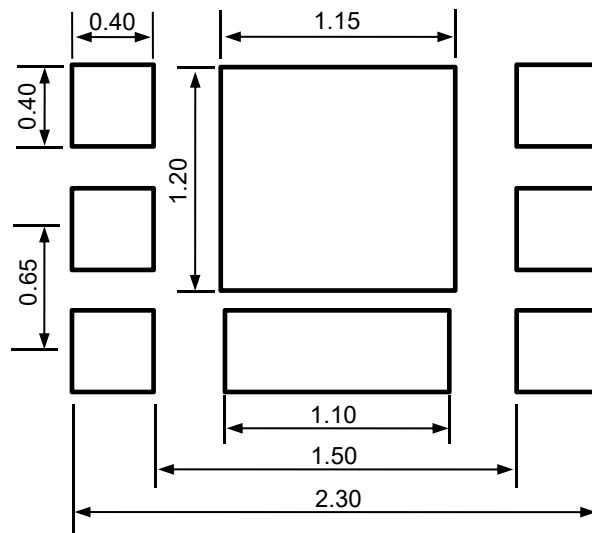
Product dimension (DFN2*2-6L)



| Dim | Millimeters | |
|-----|-------------|------|
| | MIN | MAX |
| A | 1.90 | 2.10 |
| B | 1.90 | 2.10 |
| C | 0.70 | 1.10 |
| D | 0.80 | 1.00 |
| E | 0.55 | 0.75 |
| E1 | 0.25 Ref. | |
| F | 0.25 | 0.35 |
| G | 0.20 | 0.35 |
| H | 0.50 | 1.00 |
| J | 0.60 | 0.80 |
| K | 0.00 | 0.05 |
| L | 0.20 Ref. | |
| M | 0.15 | -- |
| N | 0.20 | -- |
| O | 0.25 | -- |

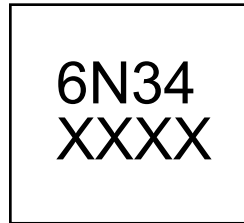


Bottom View



Suggested PCB Layout

Marking information




XXXX:Part Serial number(variable)

Ordering information

| Device | Package | Reel | Shipping |
|-----------|-------------|------|--------------------|
| PPM6N30V4 | DFN-6L(2*2) | 7" | 3000 / Tape & Reel |


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