



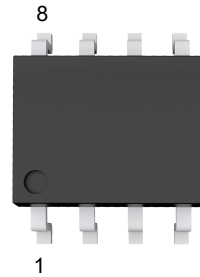
PJM10DN30PA

N-Channel Enhancement Mode Power MOSFET

Features

- High density cell design for ultra low $R_{DS(on)}$
- Advanced trench technology
- $V_{DS}= 30V, I_D= 10A$
 $R_{DS(on)} < 18m\Omega @ V_{GS}= 10V$

SOP-8

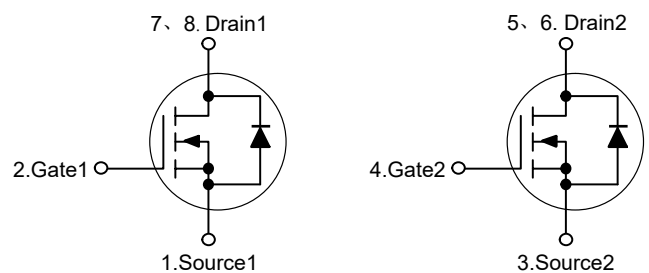


Marking code: 10DN30

Applications

- PWM applications
- Load switch
- Power management

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---------------------------------------|-----------|-------------|------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Drain Current-Continuous | I_D | 10 | A |
| Drain Current-Pulsed ^{Note1} | I_{DM} | 52 | A |
| Maximum Power Dissipation | P_D | 3.1 | W |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | °C |

Thermal Characteristics

| | | | |
|--|-----------------|------|------|
| Thermal Resistance, Junction-to-Ambient ^{Note2} | $R_{\theta JA}$ | 40.3 | °C/W |
|--|-----------------|------|------|



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Electrical Characteristics

(T_J=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min. | Typ. | 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} =30V, V _{GS} =0V | -- | -- | 1 | μA |
| Gate-Body Leakage Current | I _{GSS} | V _{GS} =±20V, V _{DS} =0V | -- | -- | ±100 | nA |
| Gate Threshold Voltage ^{Note3} | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 1 | 1.5 | 2.5 | V |
| Drain-Source On-Resistance ^{Note3} | R _{DS(on)} | V _{GS} =10V, I _D =10A | -- | -- | 18 | mΩ |
| | | V _{GS} =4.5V, I _D =8A | -- | -- | 25 | mΩ |
| Dynamic Characteristics | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =15V, V _{GS} =0V, f=1MHz | -- | 1011 | -- | pF |
| Output Capacitance | C _{oss} | | -- | 142 | -- | pF |
| Reverse Transfer Capacitance | C _{rss} | | -- | 119 | -- | pF |
| Switching Characteristics | | | | | | |
| Turn-on Delay Time | t _{d(on)} | V _{DS} =15V, V _{GS} =10V, I _D =13A R _{GEN} =3Ω | -- | 6 | -- | nS |
| Turn-on Rise Time | t _r | | -- | 5 | -- | nS |
| Turn-off Delay Time | t _{d(off)} | | -- | 25 | -- | nS |
| Turn-off Fall Time | t _f | | -- | 7 | -- | nS |
| Total Gate Charge | Q _g | V _{DD} =15V, V _{GS} =10V, I _D =6A | -- | 19 | -- | nC |
| Gate-Source Charge | Q _{gs} | | -- | 6.3 | -- | nC |
| Gate-Drain Charge | Q _{gd} | | -- | 4.5 | -- | nC |
| Source-Drain Diode Characteristics | | | | | | |
| Diode Forward Voltage ^{Note3} | V _{SD} | V _{GS} =0V, I _S =10A | -- | -- | 1.2 | V |
| Diode Forward Current ^{Note2} | I _S | | -- | -- | 10 | A |

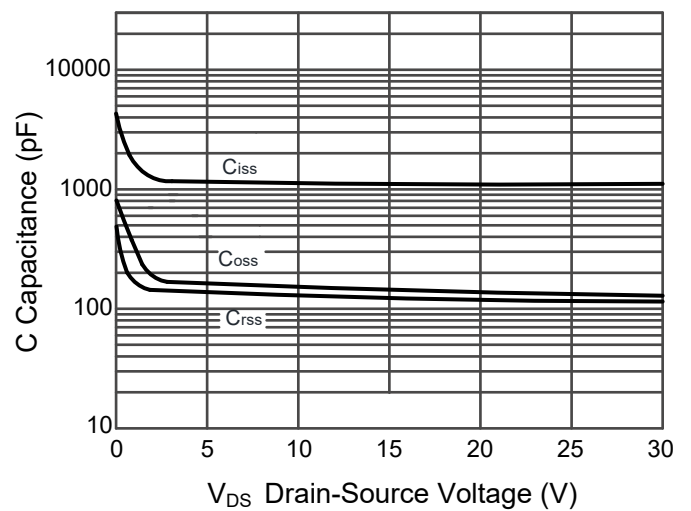
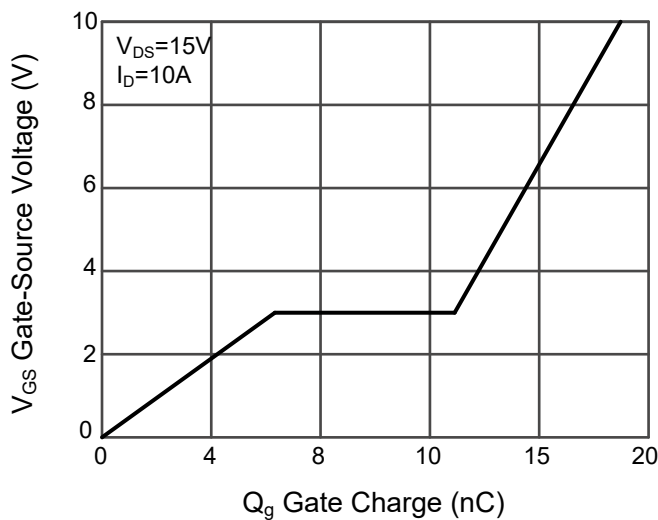
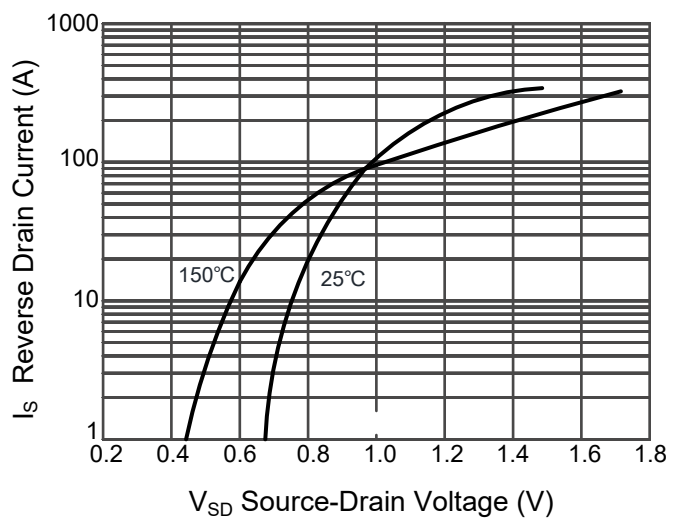
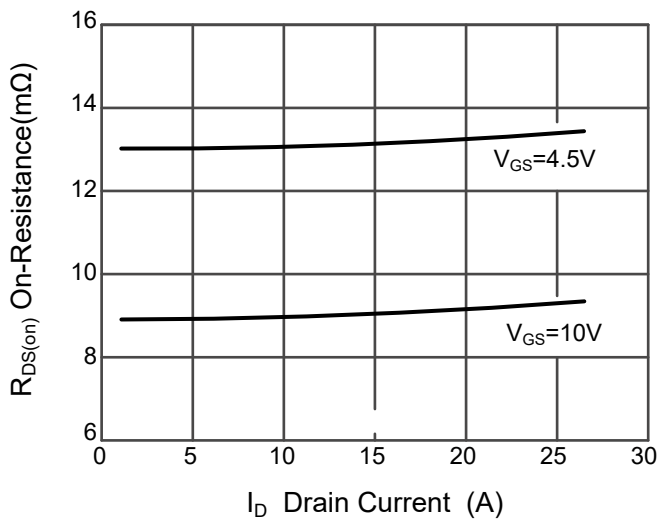
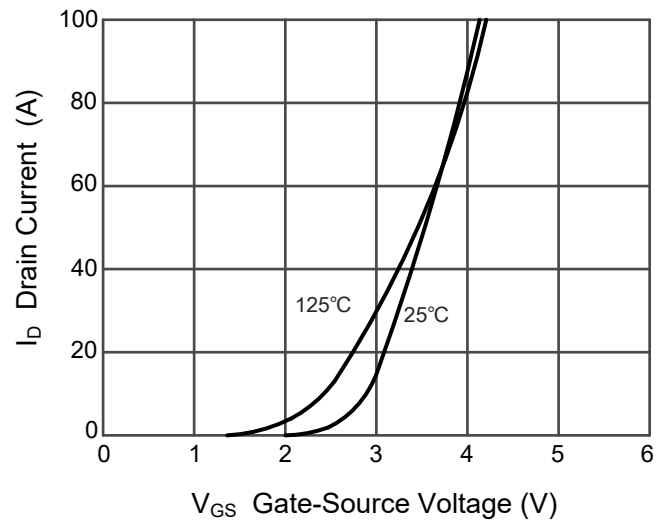
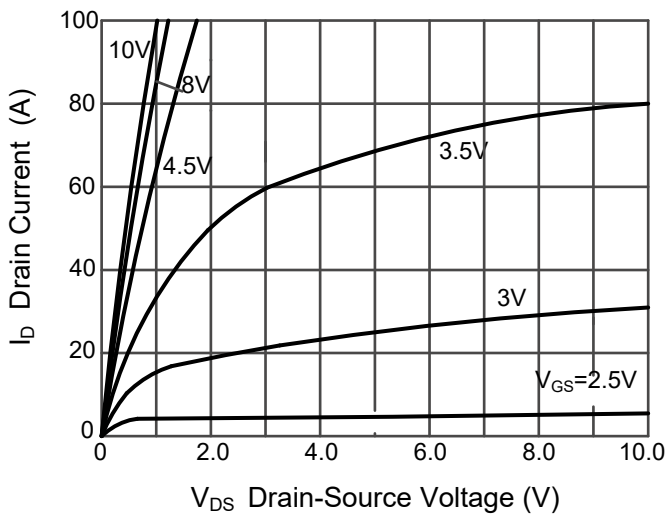
- Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
 2. Surface Mounted on FR4 Board, t ≤ 10 sec.
 3. Pulse Test: Pulse width ≤ 300μs, duty cycle ≤ 0.5%



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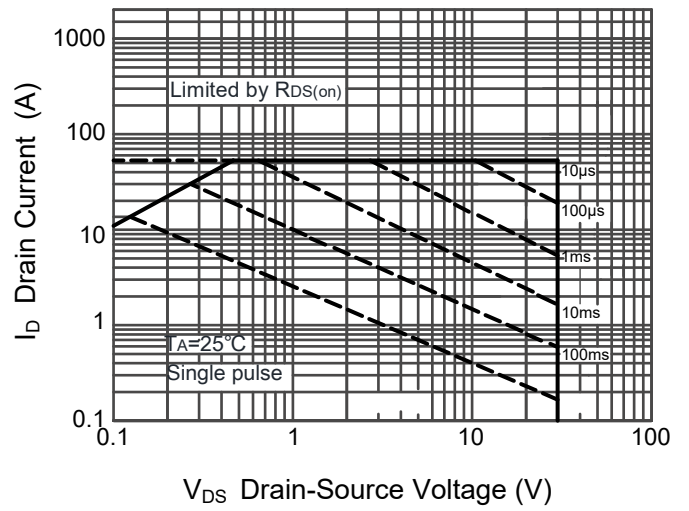
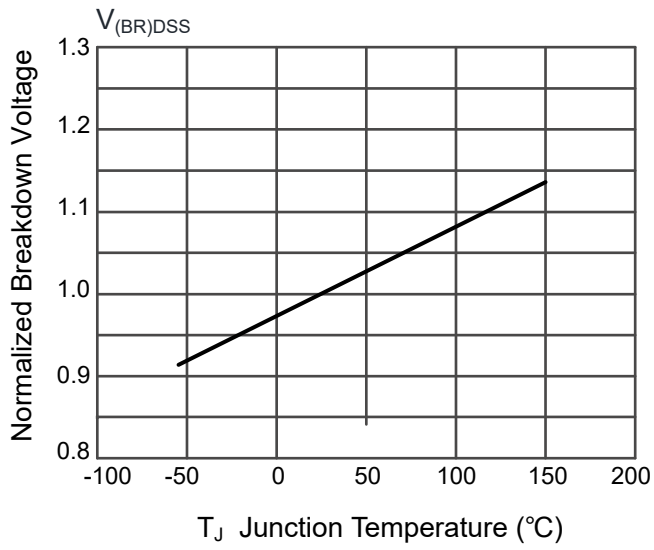
Typical Characteristic Curves





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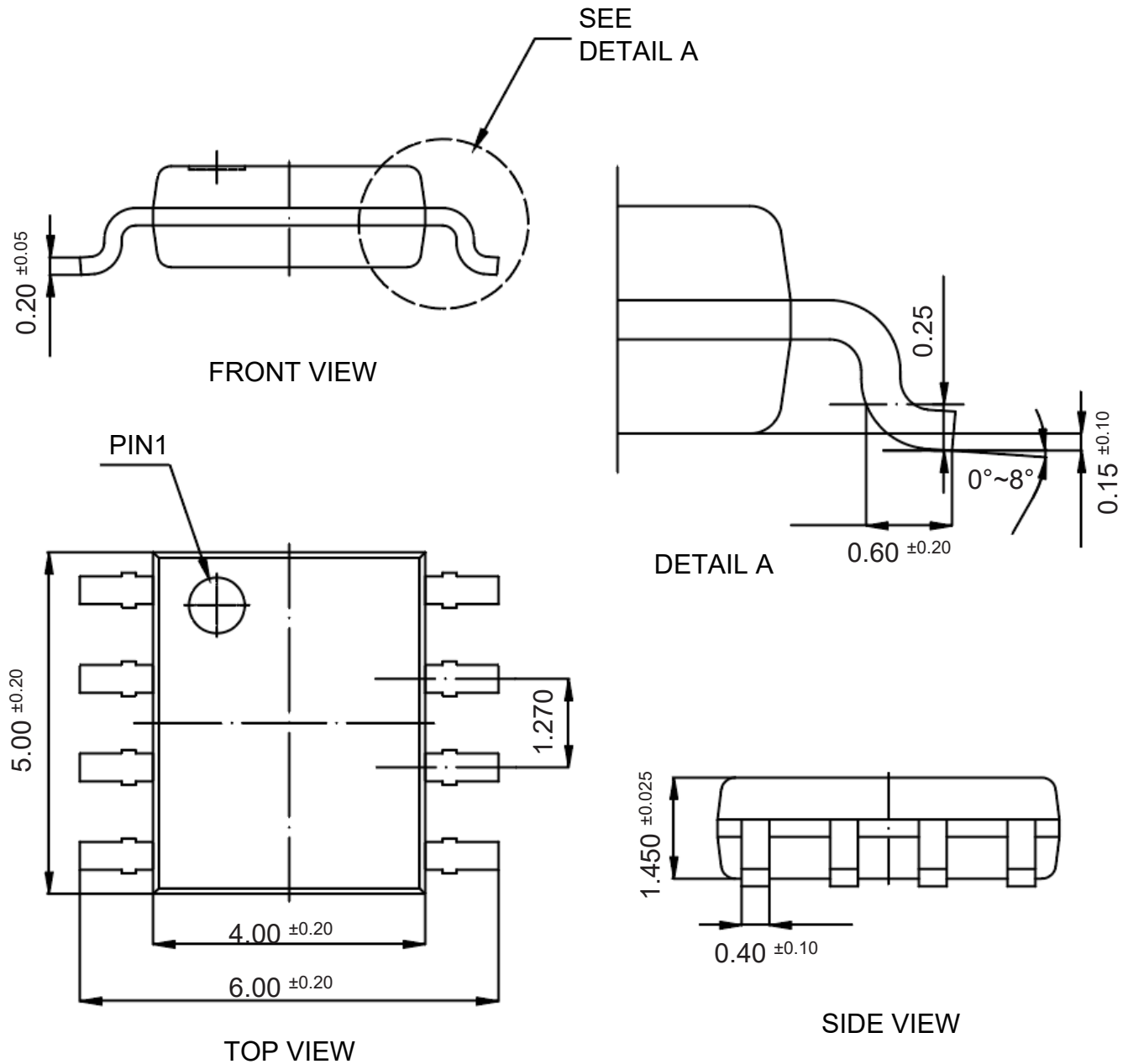
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Package Outline

SOP-8

Dimensions in mm



Ordering Information

| Device | Package | Shipping |
|-------------|---------|------------------------|
| PJM10DN30PA | SOP-8 | 4,000PCS/Reel&13inches |