# PJM18P15DF
## P-Channel Enhancement Mode Power MOSFET

### Product Summary

- $V_{DS}$= -15V,$I_D$= -18A
- $R_{DS(on)}$< 18mΩ @$V_{GS}$= -4.5V
- $R_{DS(on)}$< 24mΩ @$V_{GS}$= -2.5V

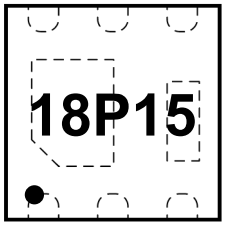
### Features

- Advanced Trench Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1

### Application

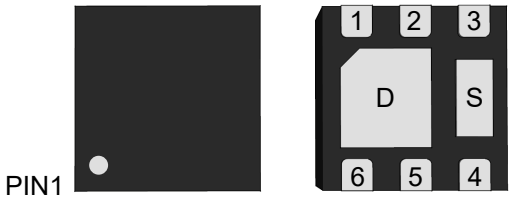
- Load Switch
- PWM Applications
- Power Management

### Marking Code




**Top View**

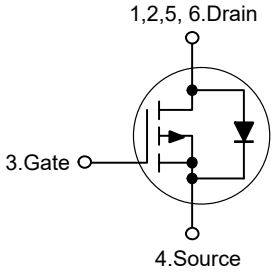
### DFN2x2-6L




**(Top View)** **(Bottom View)**

| Pin | Description |
|---|---|
| 1,2,5,6 | Drain |
| 3 | Gate |
| 4 | Source |

### Schematic Diagram




### Absolute Maximum Ratings

Ratings at 25°C Case temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $-V_{DS}$ | 15 | V |
| Gate-Source Voltage | $-V_{GS}$ | ±12 | V |
| Drain Current-Continuous | $-I_D$ | 18 | A |
| Drain Current-Pulsed Note1 | $-I_{DM}$ | 64 | A |
| Maximum Power Dissipation | $P_D$ | 8 | W |
| Single Pulsed Avalanche Energy Note2 | $E_{AS}$ | 22.5 | mJ |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature Range | $T_{STG}$ | -55 to +150 | °C |

### Thermal Characteristics

| | | | |
|---|---|---|---|
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 15.6 | °C/W |

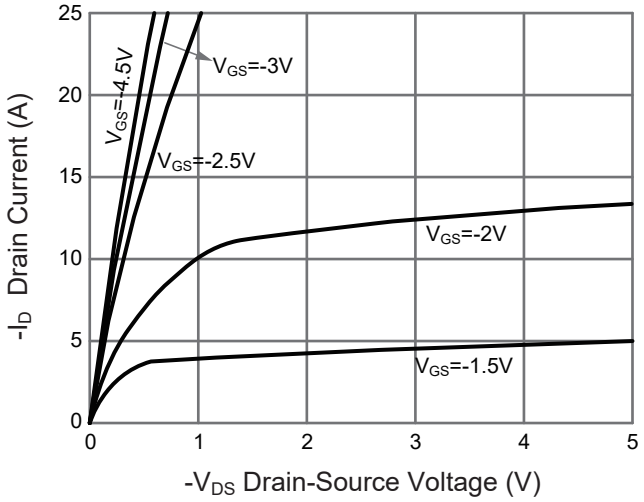
## Electrical Characteristics

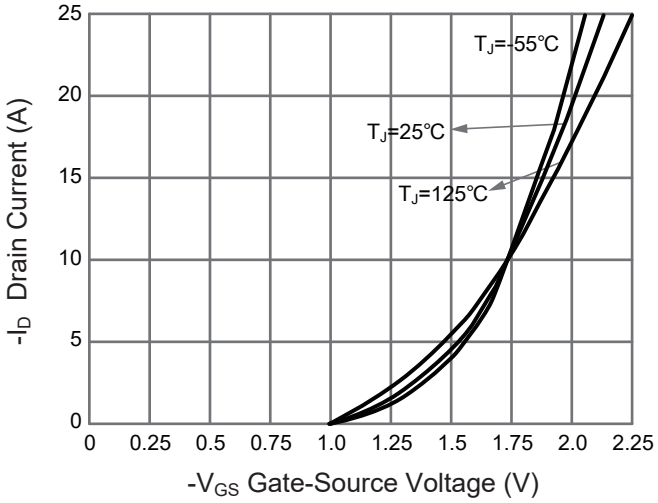
(Ta=25℃ unless otherwise specified)

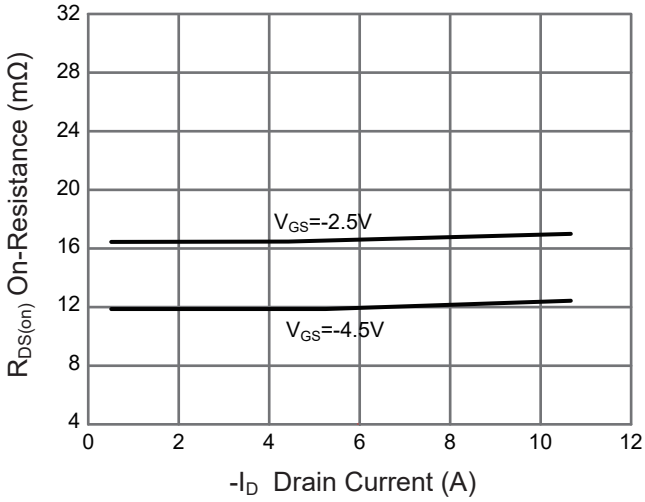
| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-Source Breakdown Voltage | $-V_{(BR)DSS}$ | $V_{GS}$=0V,$I_D$=-250μA | 15 | -- | -- | V |
| Zero Gate Voltage Drain Current | $-I_{DSS}$ | $V_{DS}$=-15V,$V_{GS}$=0V | -- | -- | 1 | μA |
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{GS}$=±12V,$V_{DS}$=0V | -- | -- | ±100 | nA |
| Gate Threshold Voltage Note3 | $-V_{GS(th)}$ | $V_{DS}$=$V_{GS}$,$I_D$=-250μA | 0.4 | 0.6 | 1 | V |
| Drain-Source On-Resistance Note3 | $R_{DS(on)}$ | $V_{GS}$=-4.5V,$I_D$=-8A | -- | 12 | 18 | mΩ |
| | | $V_{GS}$=-2.5V,$I_D$=-5A | -- | 16.5 | 24 | mΩ |
| Forward Transconductance Note3 | $g_{FS}$ | $V_{DS}$=-5V,$I_D$=-1A | -- | 7.9 | -- | S |
| **Dynamic Characteristics** | | | | | | |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=-6V,$V_{GS}$=0V,f=1MHz | -- | 1332 | -- | pF |
| Output Capacitance | $C_{oss}$ | | -- | 278 | -- | pF |
| Reverse Transfer Capacitance | $C_{rss}$ | | -- | 235 | -- | pF |
| Gate Resistance | $R_g$ | $V_{DS}$=-0V,$V_{GS}$=0V,f=1MHz | -- | 14 | -- | Ω |
| Total Gate Charge | $Q_g$ | $V_{DS}$=-6V, $I_D$=-8A, $V_{GS}$=-4.5V | -- | 35 | -- | nC |
| Gate-Source Charge | $Q_{gs}$ | | -- | 5 | -- | nC |
| Gate-Drain Charge | $Q_{gd}$ | | -- | 10 | -- | nC |
| **Switching Characteristics** | | | | | | |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{DD}$=-6V, $I_D$=-8A, $V_{GS}$=-4.5V, $R_{GEN}$=2.5Ω | -- | 11 | -- | nS |
| Turn-on Rise Time | $t_r$ | | -- | 35 | -- | nS |
| Turn-off Delay Time | $t_{d(off)}$ | | -- | 30 | -- | nS |
| Turn-off Fall Time | $t_f$ | | -- | 10 | -- | nS |
| **Source-Drain Diode Characteristics** | | | | | | |
| Diode Forward Voltage Note3 | $-V_{SD}$ | $V_{GS}$=0V,$I_S$=-18A | -- | -- | 1.2 | V |
| Diode Forward Current | $-I_S$ | | -- | -- | 18 | A |

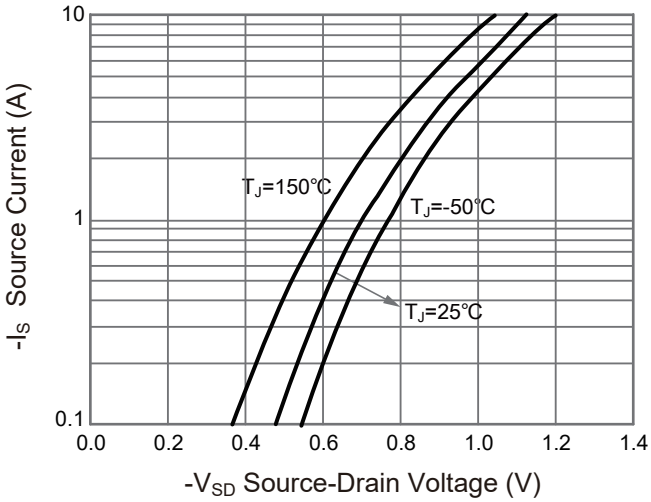
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. The test condition is $V_{DD}$=10V,$V_G$=10V,L=0.5mH,$I_{AS}$=9.5A, TJ=25℃.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.

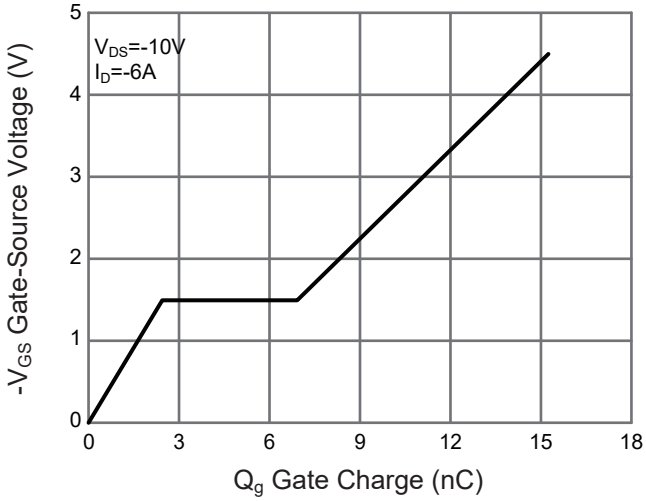
## Typical Characteristic Curves

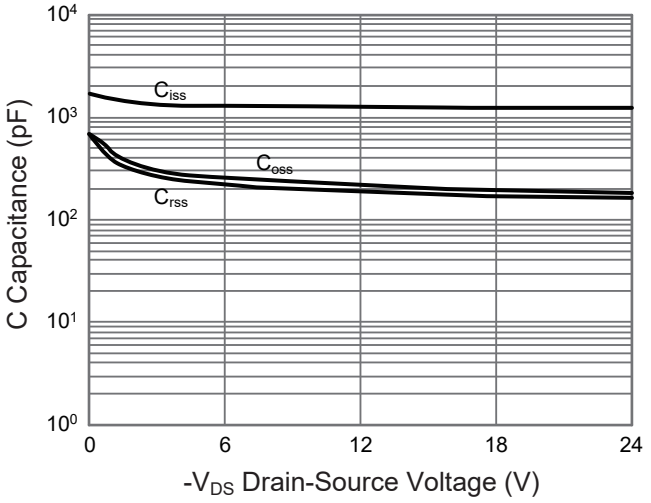


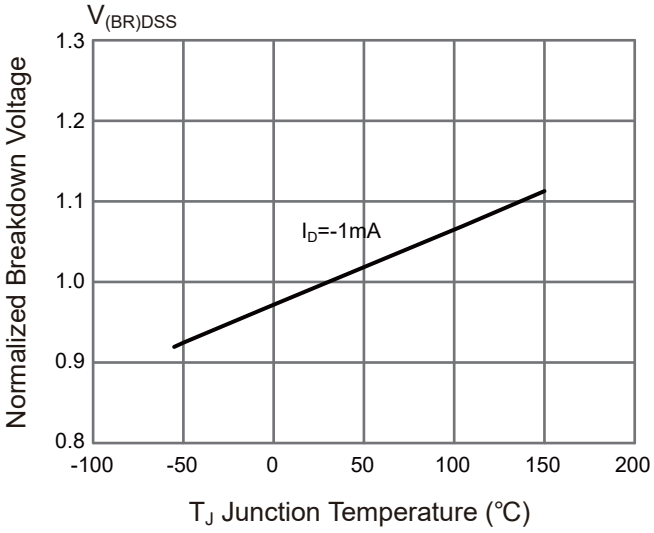



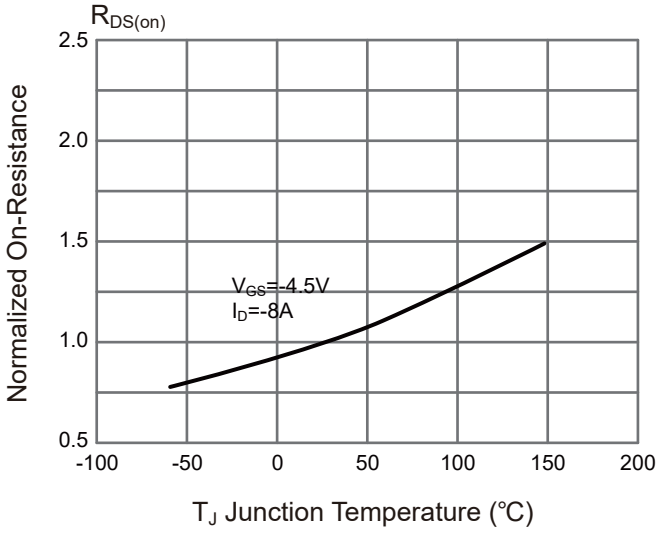



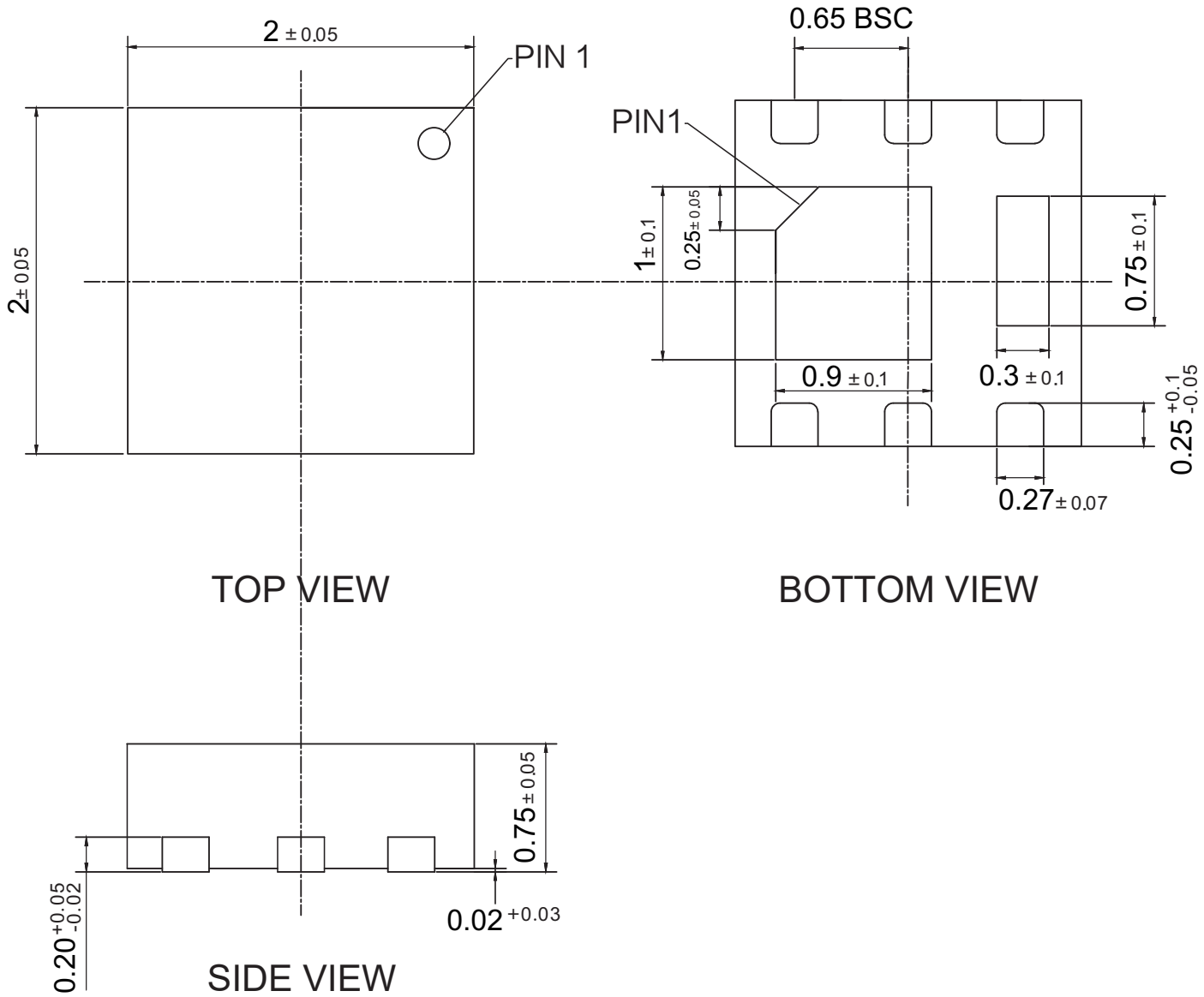




V(BR)DSS
Normalized Breakdown Voltage
1.3
1.2
1.1
1.0
0.9
0.8
-100
-50
0
50
100
150
200
ID=-1mA
TJ Junction Temperature (℃)


RDS(on)
Normalized On-Resistance
2.5
2.0
1.5
1.0
0.5
-100
-50
0
50
100
150
200
VGS=-4.5V
ID=-8A
TJ Junction Temperature (℃)

## Package Outline

DFN2x2-6L-0001
Dimensions in mm




## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| PJM18P15DF | DFN2x2A-6L | 3,000PCS/Reel&7inches |