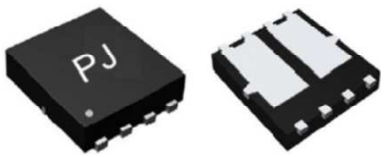
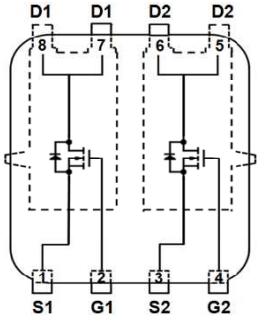
# PJQ5882A

## 100V Dual N-Channel Enhancement Mode Mosfet

| Voltage | 100 V | Current | 6.5 A |
|---|---|---|---|

**DFN5060B-8L**




### Features

- $R_{DS(ON)}$, $V_{GS}$@10V,$I_D$@3A<310mΩ
- $R_{DS(ON)}$, $V_{GS}$@4.5V,$I_D$@2A<320mΩ
- High switching speed
- Improved dv/dt capability
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : DFN5060B-8L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0035 ounces, 0.092 grams

### Maximum Ratings and Thermal Characteristics ($T_A$=25°C unless otherwise noted)

| PARAMETER | | SYMBOL | LIMIT | UNITS |
|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DS}$ | 100 | V |
| Gate-Source Voltage | | $V_{GS}$ | ±20 | |
| Continuous Drain Current(Note 4) | $T_C$=25°C | $I_D$ | 6.5 | A |
| | $T_C$=100°C | | 4.1 | |
| | $T_A$=25°C | | 1.7 | |
| | $T_A$=70°C | | 1.3 | |
| Pulsed Drain Current(Note 1) | $T_A$=25°C | $I_{DM}$ | 7 | |
| Power Dissipation | $T_C$=25°C | $P_D$ | 31 | W |
| | $T_C$=100°C | | 12 | |
| | $T_A$=25°C | | 2.1 | |
| | $T_A$=70°C | | 1.3 | |
| Operating Junction and Storage Temperature Range | | $T_J$,$T_{STG}$ | -55~150 | °C |
| Typical Thermal Resistance(Note 5) | Junction to Case | $R_{\theta JC}$ | 4 | °C/W |
| | Junction to Ambient | $R_{\theta JA}$ | 60 | |

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## Electrical Characteristics ($T_A$=25°C unless otherwise noted)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| **Static** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$=0V,$I_D$=250uA | 100 | - | - | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$,$I_D$=250uA | 1 | 2 | 2.5 | |
| Drain-Source On-State Resistance | $R_{DS(on)}$ | $V_{GS}$=10V, $I_D$=3A | - | 285 | 310 | mΩ |
| | | $V_{GS}$=4.5V, $I_D$=2A | - | 290 | 320 | |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=80V,$V_{GS}$=0V | - | - | 1 | uA |
| Gate-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±20V,$V_{DS}$=0V | - | - | ±100 | nA |
| **Dynamic**(Note 6) | | | | | | |
| Total Gate Charge | $Q_g$ | $V_{DS}$=50V, $I_D$=2.2A, $V_{GS}$=10V(Note 2,3) | - | 8.5 | - | nC |
| Gate-Source Charge | $Q_{gs}$ | | - | 1.7 | - | |
| Gate-Drain Charge | $Q_{gd}$ | | - | 1.6 | - | |
| Input Capacitance | Ciss | $V_{DS}$=30V, $V_{GS}$=0V, f=1.0MHZ(Note 2,3) | - | 444 | - | pF |
| Output Capacitance | Coss | | - | 22 | - | |
| Reverse Transfer Capacitance | Crss | | - | 10 | - | |
| Gate resistance | $R_g$ | f=1.0MHZ | - | 1.3 | - | Ω |
| Turn-On Delay Time | $td_{(on)}$ | $V_{DD}$=50V, $I_D$=2.2A, $V_{GS}$=10V, $R_G$=3Ω (Note 2,3) | - | 6 | - | ns |
| Turn-On Rise Time | $t_r$ | | - | 22 | - | |
| Turn-Off Delay Time | $td_{(off)}$ | | - | 21 | - | |
| Turn-Off Fall Time | $t_f$ | | - | 21 | - | |
| **Drain-Source Diode** | | | | | | |
| Diode Forward Current | $I_S$ | --- | - | - | 6.5 | A |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=1A,$V_{GS}$=0V | - | 0.78 | 1.2 | V |
| Reverse Recovery Time | Trr | $V_{GS}$=0V, $I_S$=2.2A dIS/dt=100A/us(Note 2,3) | - | 40 | - | ns |
| Reverse Recovery Charge | Qrr | | - | 20 | - | nC |

NOTES :

1. Pulse width≤300us, Duty cycle≤2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial $T_J$ =25°C.
4. The maximum current rating is package limited.
5. $R_{\Theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch$^2$ with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

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## TYPICAL CHARACTERISTIC CURVES

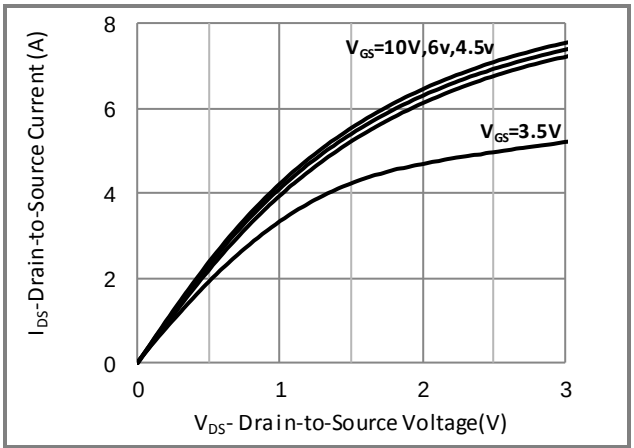


Fig.1 Output Characteristics

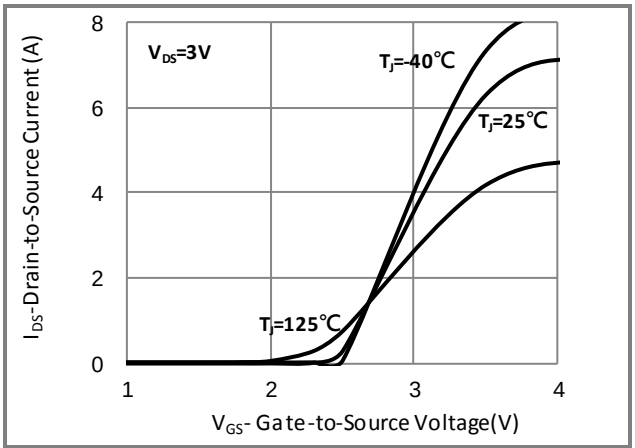


Fig.2 Transfer Characteristics

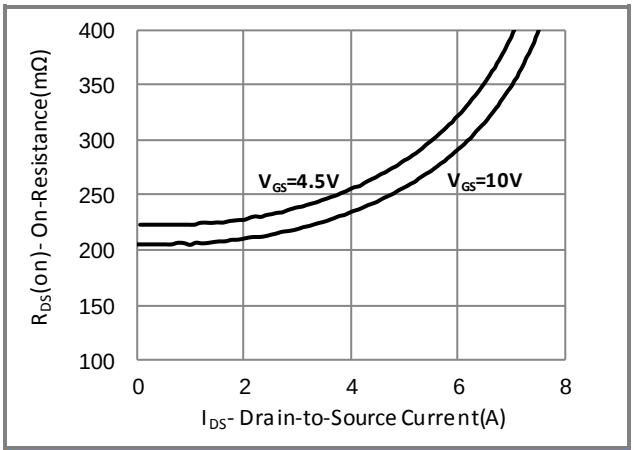


Fig.3 On-Resistance vs. Drain Current

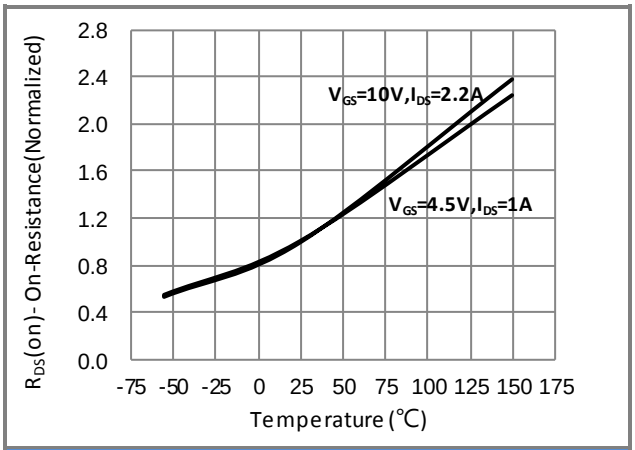


Fig.4 On-Resistance vs. Junction temperature

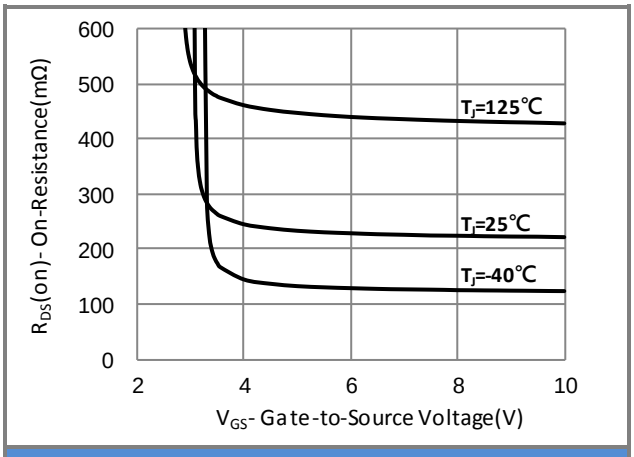


Fig.5 On-Resistance Variation with $V_{GS}$

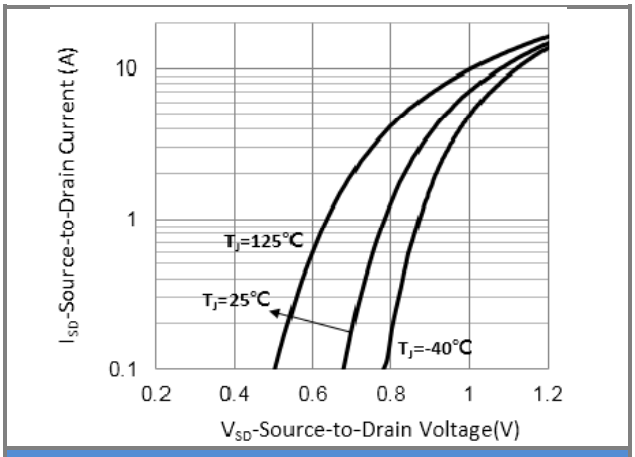


Fig.6 Source-Drain Diode Forward Voltage

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## TYPICAL CHARACTERISTIC CURVES

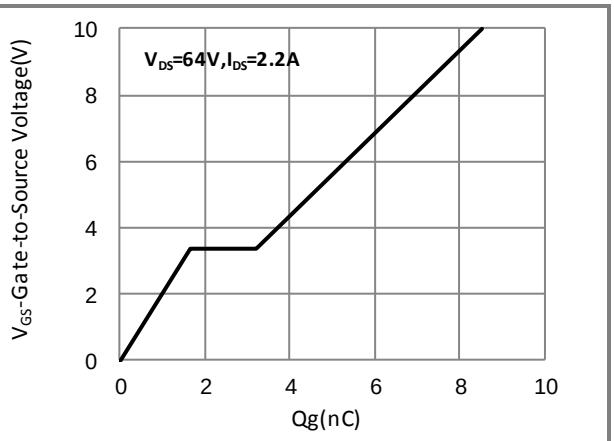



Fig.7 Gate-Charge Characteristics

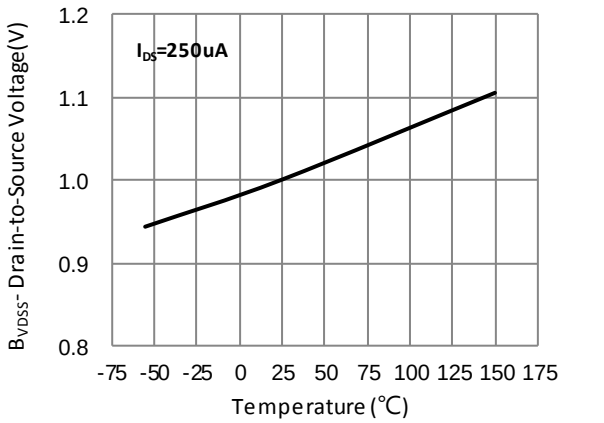



Fig.8 Breakdown Voltage Variation vs. Temperature

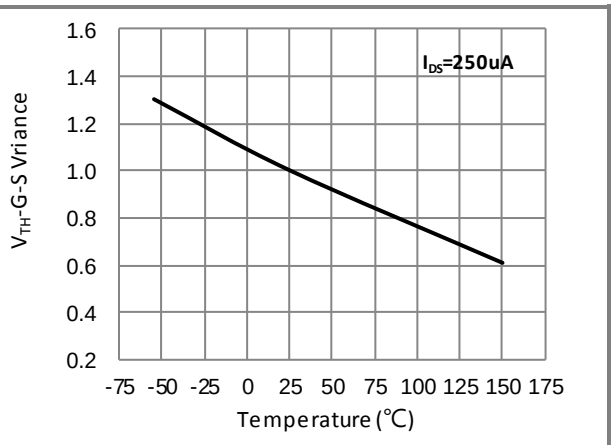



Fig.9 Threshold Voltage Variation with Temperature

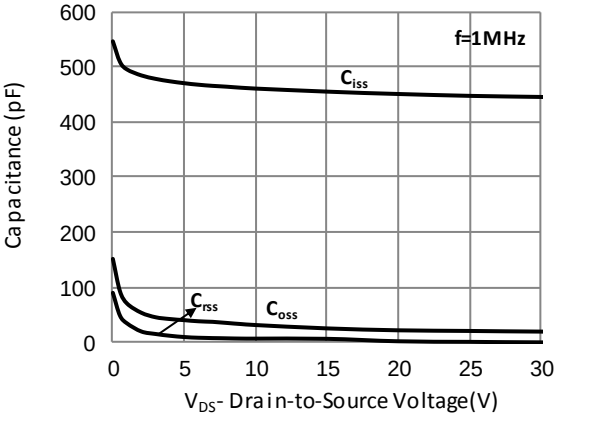



Fig.10 Capacitance vs. Drain-Source Voltage

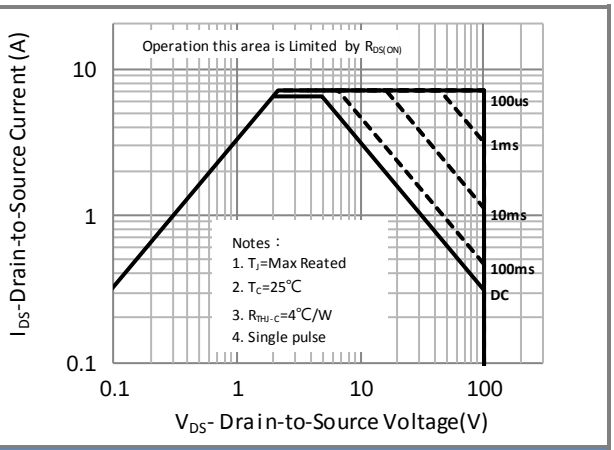



Fig.11 Maximum Safe Operating Area

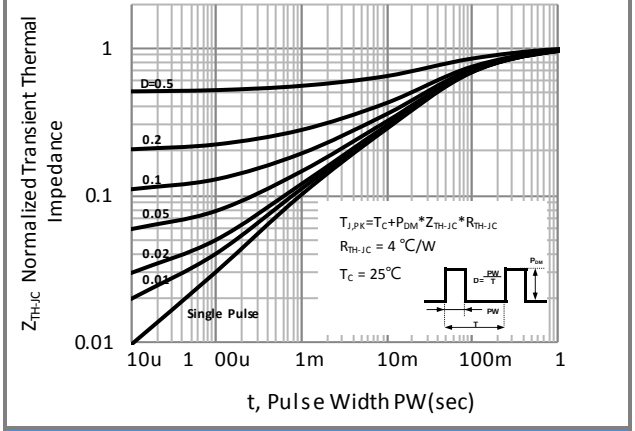



Fig.12 Normalized Transient Thermal Impedance

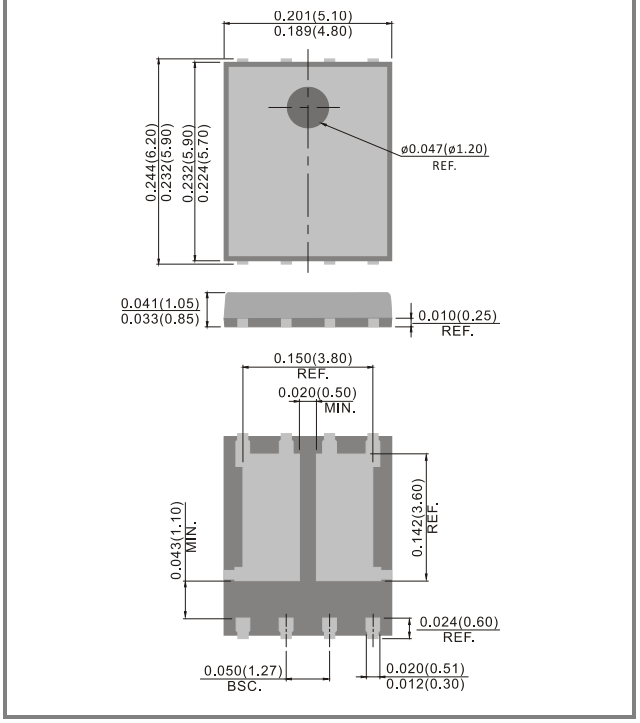
# PJQ5882A

## Part No. Packing Code Version

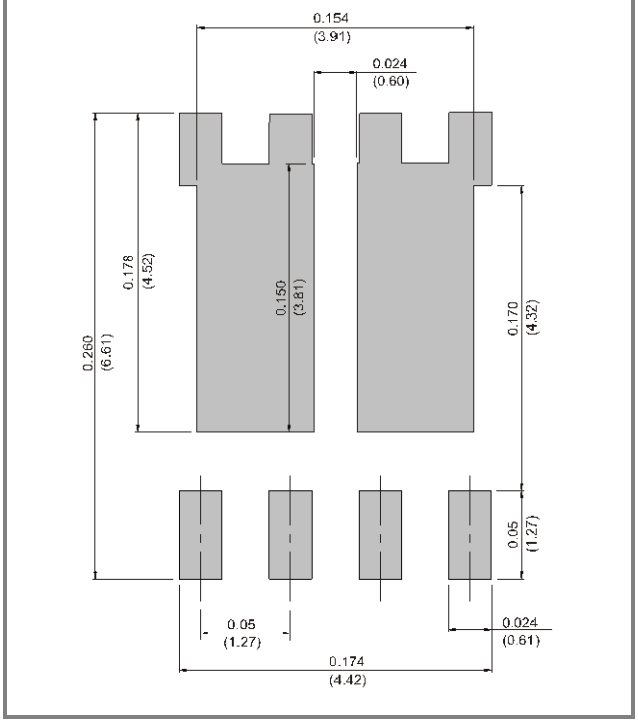
| Part No. Packing Code | Package Type | Packing Type | Marking | Version |
|---|---|---|---|---|
| PJQ5882A_R2_00001 | DFN5060B-8L | 3000pcs / 13” reel | Q5882A | Halogen free RoHS compliant |

## Packaging Information & Mounting Pad Layout

DFN5060B-8L Dimension — Unit: inch(mm)




DFN5060B-8L Pad Layout — Unit: inch(mm)



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