



PJL9807

30V Dual P-Channel Enhancement Mode MOSFET

Voltage

-30 V

Current

-4 A

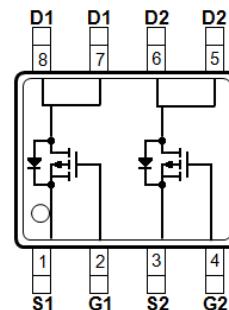
Features

- $R_{DS(ON)}$, $V_{GS} @ -10V$, $I_D @ -3A < 52m\Omega$
- $R_{DS(ON)}$, $V_{GS} @ -4.5V$, $I_D @ -2A < 82m\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: SOP-8 package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0029 ounces, 0.083 grams

SOP-8



Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ C$ unless otherwise noted)

| PARAMETER | SYMBOL | LIMIT | UNITS |
|---|-----------------|---------|-------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Gate-Source Voltage | V_{GS} | +20 | |
| Continuous Drain Current | I_D | -4 | A |
| | | -3 | |
| Pulsed Drain Current ^(Note 1) | I_{DM} | -16 | |
| Power Dissipation | P_D | 1.7 | W |
| | | 1.1 | |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55~150 | °C |
| Typical Thermal Resistance - Junction to Ambient ^(Note 5) | $R_{\theta JA}$ | 73.5 | °C/W |



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Electrical Characteristics ($T_A=25^\circ C$ unless otherwise noted)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|---|--------------|--|------|-------|-----------|-----------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V, I_D=-250\mu A$ | -30 | - | - | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu A$ | -1 | -1.6 | -2.5 | |
| Drain-Source On-State Resistance | $R_{DS(on)}$ | $V_{GS}=-10V, I_D=-3A$ | - | 42 | 52 | $m\Omega$ |
| | | $V_{GS}=-4.5V, I_D=-2A$ | - | 62 | 82 | |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-30V, V_{GS}=0V$ | - | - | -1 | μA |
| Gate-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 20V, V_{DS}=0V$ | - | - | ± 100 | nA |
| Dynamic (Note 6) | | | | | | |
| Total Gate Charge | Q_g | $V_{DS}=-15V, I_D=-3A,$ $V_{GS}=-4.5V$ (Note 1,2) | - | 4.8 | - | nC |
| Gate-Source Charge | Q_{gs} | | - | 1.7 | - | |
| Gate-Drain Charge | Q_{gd} | | - | 1.7 | - | |
| Input Capacitance | C_{iss} | $V_{DS}=-15V, V_{GS}=0V,$ $f=1.0MHz$ | - | 516 | - | pF |
| Output Capacitance | C_{oss} | | - | 83 | - | |
| Reverse Transfer Capacitance | C_{rss} | | - | 61 | - | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DS}=-15V, I_D=-1A,$ $V_{GEN}=-10V, R_G=6\Omega$ (Note 1,2) | - | 5.6 | - | ns |
| Turn-On Rise Time | t_r | | - | 8.5 | - | |
| Turn-Off Delay Time | $t_{d(off)}$ | | - | 27 | - | |
| Turn-Off Fall Time | t_f | | - | 18 | - | |
| Drain-Source Diode | | | | | | |
| Maximum Continuous Drain-Source Diode Forward Current | I_S | --- | - | - | -4 | A |
| Diode Forward Voltage | V_{SD} | $I_S=-1A, V_{GS}=0V$ | - | -0.75 | -1 | V |

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics.
3. The maximum current rating is package limited.
4. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^\circ C$. Ratings are based on low frequency and duty cycles to keep initial $T_J = 25^\circ C$.
5. R_{QJA} 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 inch² with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTIC CURVES

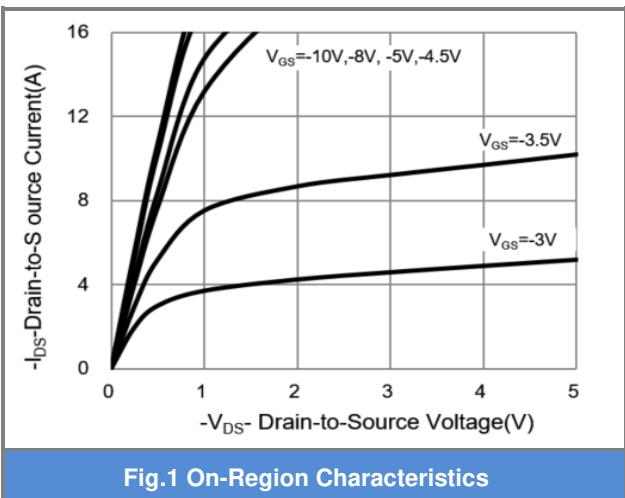


Fig.1 On-Region Characteristics

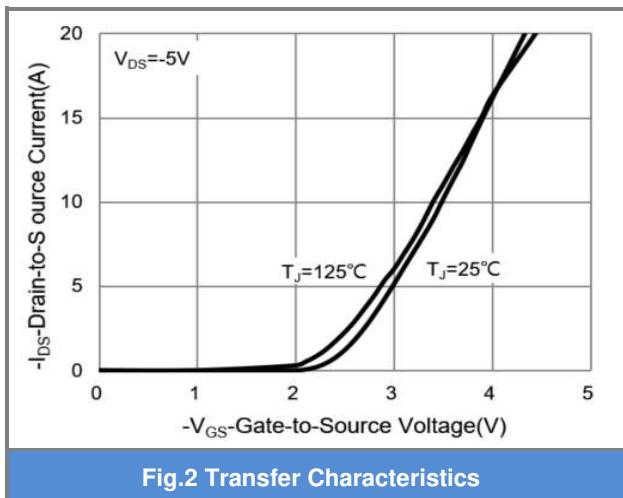


Fig.2 Transfer Characteristics

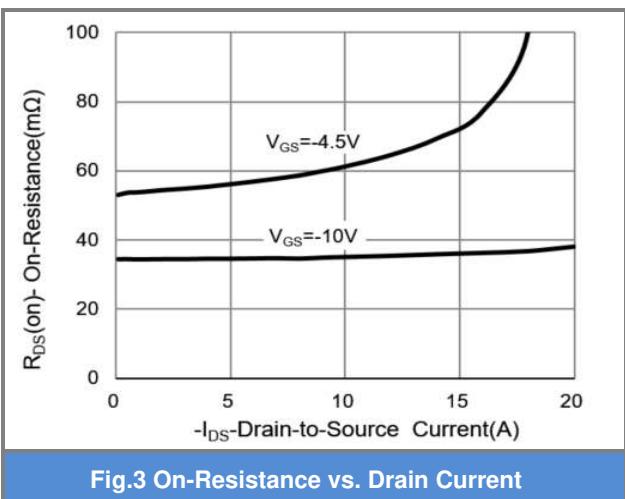


Fig.3 On-Resistance vs. Drain Current

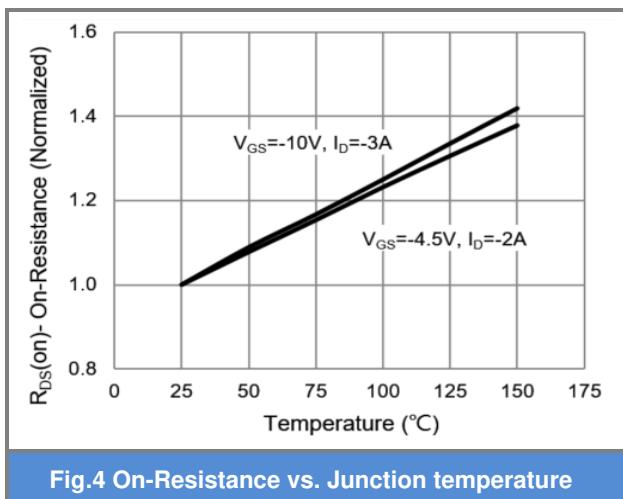


Fig.4 On-Resistance vs. Junction temperature

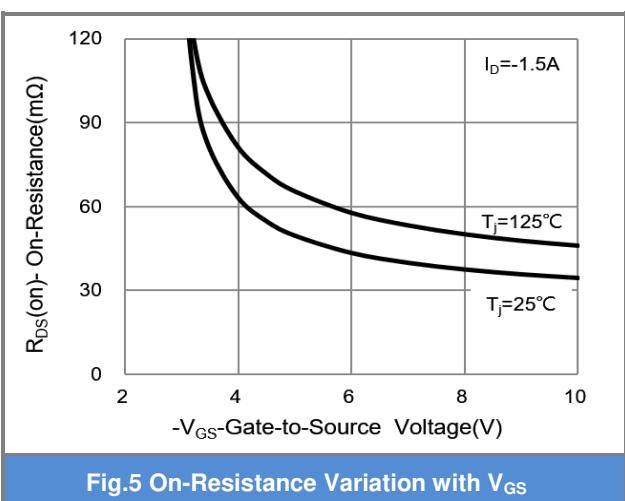


Fig.5 On-Resistance Variation with V_GS

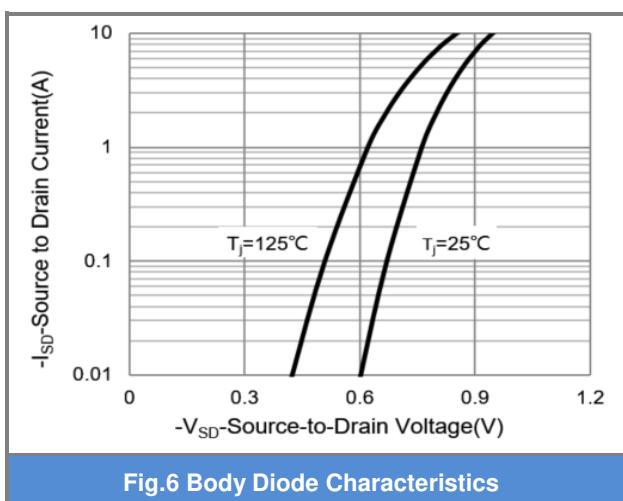


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

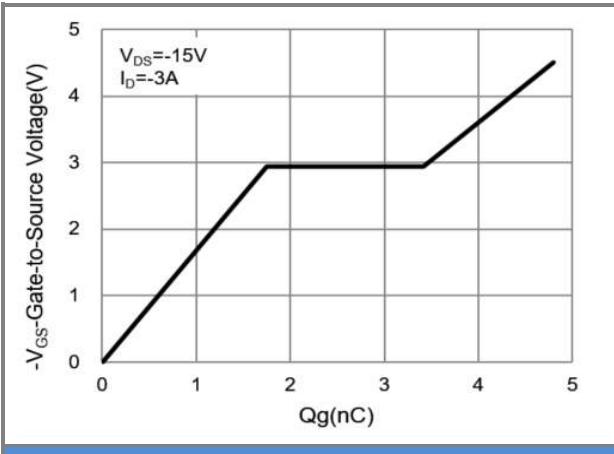


Fig.7 Gate-Charge Characteristics

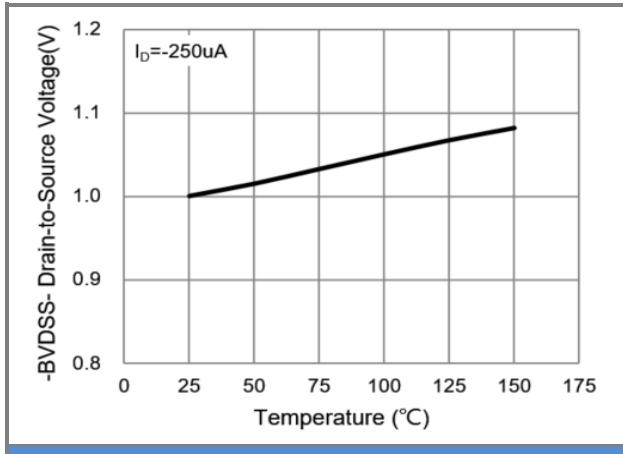


Fig.8 Breakdown Voltage Variation vs. Temperature

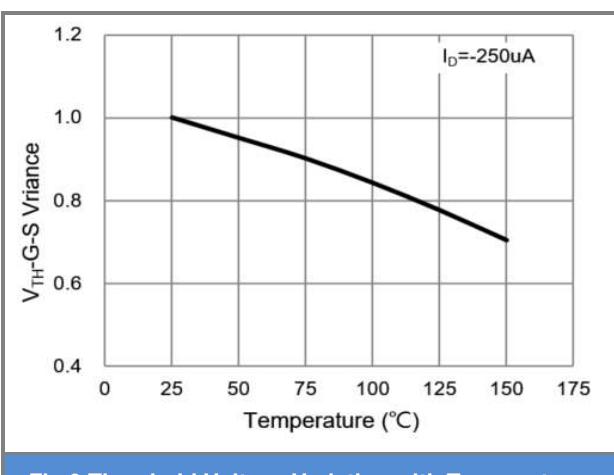


Fig.9 Threshold Voltage Variation with Temperature

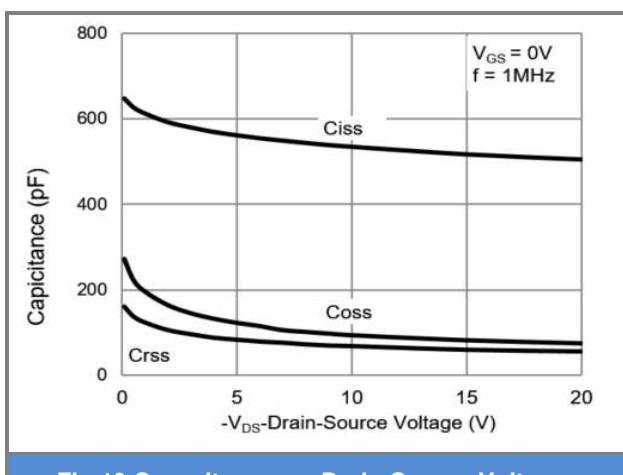


Fig.10 Capacitance vs. Drain-Source Voltage

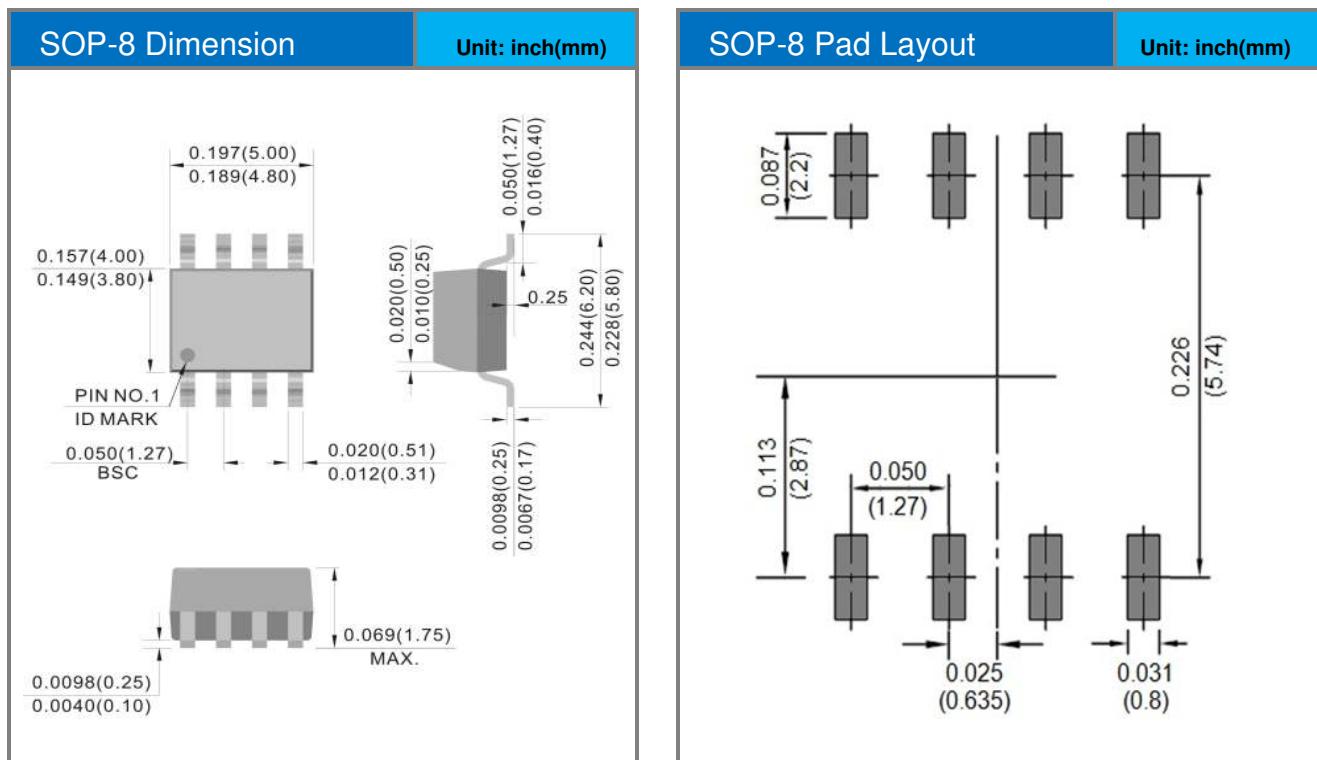


PJL9807

Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|----------------------|--------------|---------------------|---------|--------------|
| PJL9807_R2_00001 | SOP-8 | 2.5K pcs / 13" reel | L9807 | Halogen free |

Packaging Information & Mounting Pad Layout





PJL9807

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