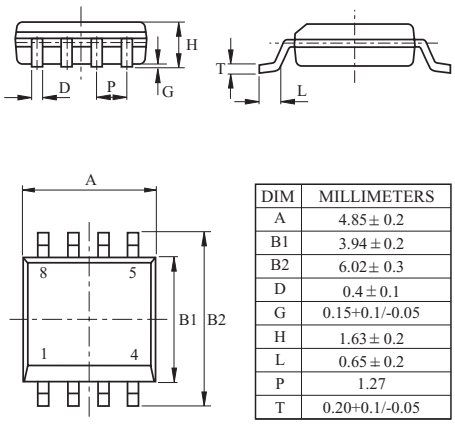
## GENERAL DESCRIPTION

This planer stripe MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristics. It is mainly suitable for portable equipment and SMPS.

## FEATURES

- $V_{DSS}$=30V, $I_D$=6A.
- Drain-Source ON Resistance.
  $R_{DS(ON)}$=28mΩ (Max.) @$V_{GS}$=10V
  $R_{DS(ON)}$=42mΩ (Max.) @$V_{GS}$=4.5V
- Super High Dense Cell Design
- High Power and Current Handing Capability




| DIM | MILLIMETERS |
|---|---|
| A | 4.85± 0.2 |
| B1 | 3.94 ± 0.2 |
| B2 | 6.02± 0.3 |
| D | 0.4 ± 0.1 |
| G | 0.15+0.1/-0.05 |
| H | 1.63 ± 0.2 |
| L | 0.65 ± 0.2 |
| P | 1.27 |
| T | 0.20+0.1/-0.05 |

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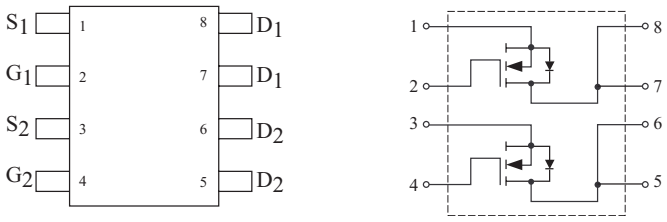
## MAXIMUM RATING (Ta=25℃ Unless otherwise noted)

| CHARACTERISTIC | | SYMBOL | PATING | UNIT |
|---|---|---|---|---|
| Drain Source Voltage | | $V_{DSS}$ | 30 | V |
| Gate Source Voltage | | $V_{GSS}$ | ±20 | V |
| Drain Current | DC | $I_D$* | 6 | A |
| | Pulsed (note1) | $I_{DP}$ | 20 | A |
| Drain Source Diode Forward Current | | $I_S$ | 1.3 | A |
| Drain Power Dissipation | 25℃ | $P_D$* | 2 | W |
| | 100℃ | | 1.6 | W |
| Maximum Junction Temperature | | $T_j$ | -50~150 | ℃ |
| Storage Temperature Range | | $T_{stg}$ | -50~150 | ℃ |
| Thermal Resistance, Junction to Ambient | | $R_{thJA}$* | 78 | ℃/W |

* : Surface Mounted on FR4 Board, t≤10sec.

PIN CONNECTION (TOP VIEW)



**ELECTRICAL CHARACTERISTICS (Ta=25℃) UNLESS OTHERWISE NOTED**

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| **Static** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $I_D$=250㎂, $V_{GS}$=0V | 30 | - | - | V |
| Drain Cut-off Current | $I_{DSS}$ | $V_{DS}$=24V, $V_{GS}$=0V | - | - | 1 | ㎂ |
| Gate Leakage Current | $I_{GSS}$ | $V_{GS}$=±25V, $V_{DS}$=0V | - | - | ±100 | ㎂ |
| Gate Threshold Voltage | $V_{th}$ | $V_{DS}$=$V_{GS}$, $I_D$=250㎂ | 1 | 2 | 3 | V |
| Drain-Source ON Resistance | $R_{DS(ON)}$ | $V_{GS}$=10.0V, $I_D$=6A | - | 24 | 28 | mΩ |
| | | $V_{GS}$=4.5V, $I_D$=4.9A | - | 35 | 42 | |
| On-State Drain Current | $I_{D(ON)}$ | $V_{DS}$=5V, $V_{GS}$=10A | 20 | - | - | A |
| Forward Transconductance | $G_{fs}$ | $V_{DS}$=10V, $I_D$=6A | - | 20 | - | S |
| **Dynamic** (Note 3) | | | | | | |
| Input Capaclitance | $C_{iss}$ | $V_{DS}$=15V, f=1MHz, $V_{GS}$=OV | - | 740 | - | pF |
| Ouput Capacitance | $C_{oss}$ | | - | 170 | - | |
| Reverse Transfer Capacitance | $C_{rss}$ | | - | 75 | - | |
| Total Gate Charge | $Q_g$ | $V_{DS}$=10V, $V_{GS}$=5V, $I_D$=6A | - | 7 | 10 | nC |
| Gate-Source Charge | $Q_{gs}$ | | - | 3.8 | - | |
| Gate-Drain Charge | $Q_{gd}$ | | - | 2.5 | - | |
| Turn-On Delat Time | $t_{d(on)}$ | $V_{DD}$=15V, $V_{GS}$=10V<br>$I_D$=1A, $R_G$=6Ω (Note 1) | - | 8 | 16 | ns |
| Turn-On Rise Time | $t_r$ | | - | 13 | 24 | |
| Turn-On Deley Time | $t_{d(off)}$ | | - | 18 | 29 | |
| Turn-On Fall Time | $t_r$ | | - | 8 | 6 | |
| **Source-Drain Diode Ratings** | | | | | | |
| Source-Drain Forward Voltage | $V_{SDF}$ | $I_{DR}$=1.7A, $V_{GS}$=0V | - | 0.75 | 1.2 | V |

Note

1. Pulse Test : Pulse width ≤ 10㎲, Duty cycle ≤ 1%

* Upper electrical characteristics can be changed because these are tentative specifications.

* Graphs are omitted because these are tentative specifications.

Fig1. $I_D$ - $V_{DS}$

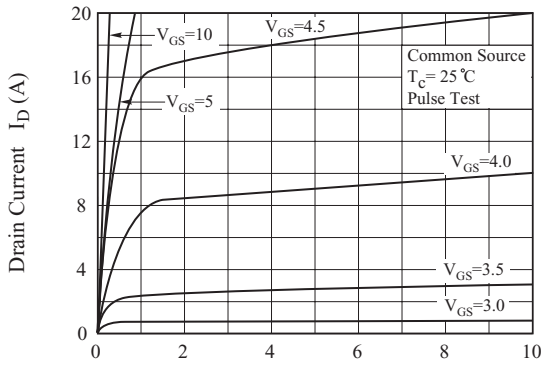



Fig2. $R_{DS(on)}$ - $I_D$

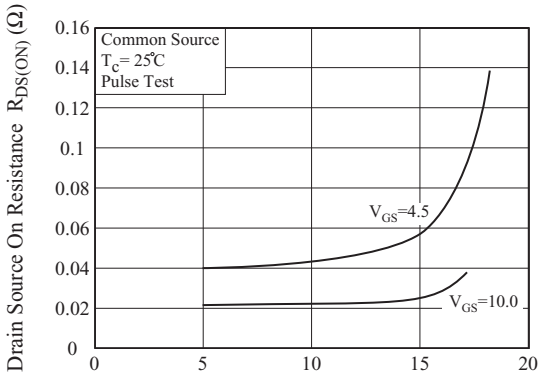



Fig3. $I_D$ - $V_{GS}$

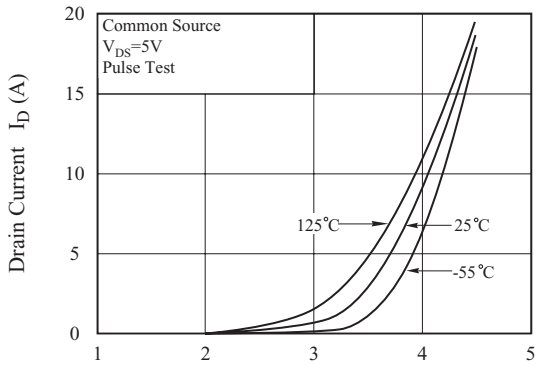



Fig4. $R_{DS(on)}$ - $T_j$

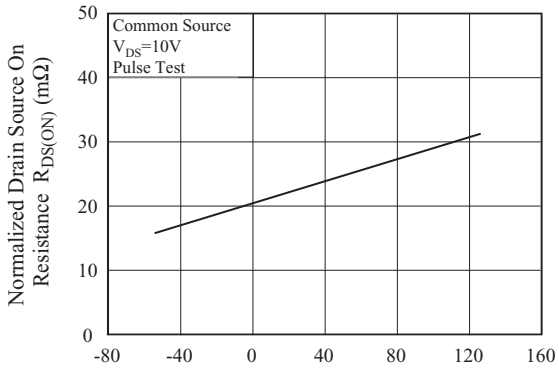



Fig5. $V_{th}$ - $T_j$

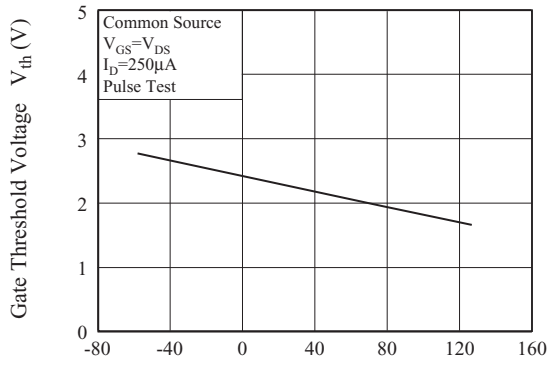



Fig6. $I_{DR}$ - $V_{SDF}$

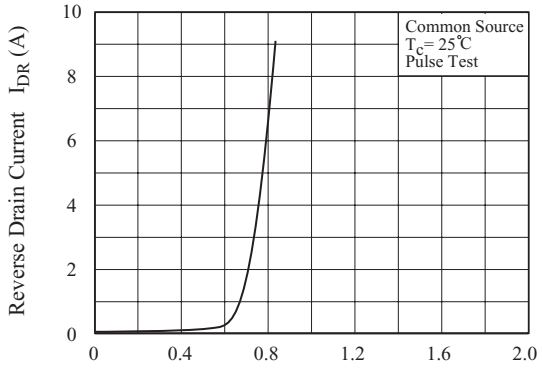


Fig7. Transient Thermal Response Curve

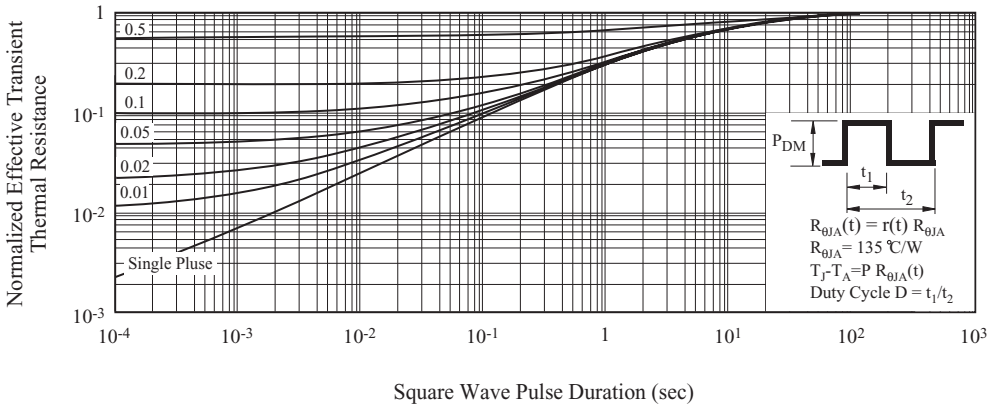



Fig8. Safe Operation Area

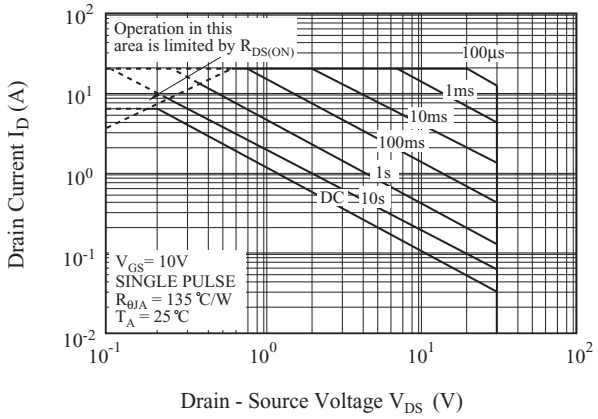


Fig. 9 Gate Charge

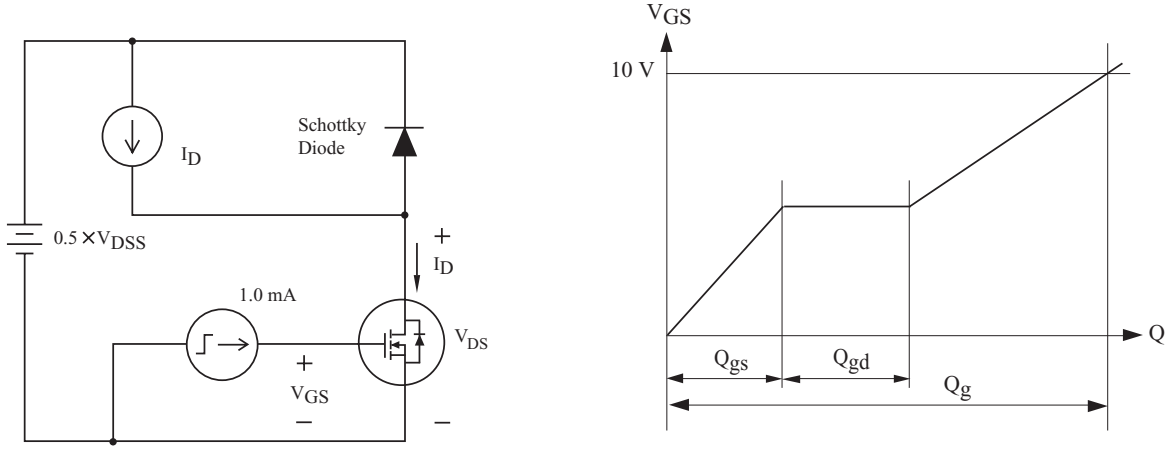



Fig. 10 Resistive Load Switching