

■ PRODUCT CHARACTERISTICS

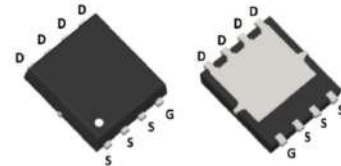
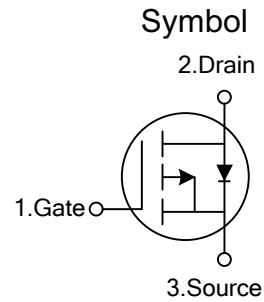
| | |
|--------------------------------|-------|
| VDSS | -30V |
| $R_{DS(on)typ}@V_{GS} = -10V$ | 3.0mΩ |
| $R_{DS(on)typ}@V_{GS} = -4.5V$ | 4.7mΩ |
| ID | -60A |

■ APPLICATIONS

- * Battery and loading switching
- * Ideal for high-frequency switching and synchronous rectification

■ FEATURES

- * High density cell design for ultra low Rdson
- * Low gate charge
- * Pb-free lead plating



■ ORDER INFORMATION

| Order codes | | Package | Packing |
|--------------|----------|---------|-------------------|
| Halogen-Free | Halogen | | |
| N/A | MOT3337G | PDFN5X6 | 5000 pieces /Reel |

■ ABSOLUTE MAXIMUM RATINGS (T_c = 25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|-----------------------------------|------------|------|
| Drain-Source Voltage | V _{DS} | -30 | V |
| Gate-Source Voltage | V _{GS} | ±20 | V |
| Drain Current-Continuous | I _D | -60 | A |
| Drain Current-Pulsed | I _{DM} | -240 | A |
| Single pulse avalanche energy | E _{AS} | 812 | mJ |
| Maximum Power Dissipation | P _D | 100 | W |
| Junction to Case | R _{θJC} | 1.25 | °C/W |
| Operating Junction and Storage Temperature Range | T _J , T _{STG} | -55 To 150 | °C |

■ Electrical Characteristics (Tc=25°C unless otherwise specified)

| Parameter | Symbol | Condition | Min | Typ | Max | Unit |
|---|--------------|---|------|-------|-----------|------------|
| Off characteristics | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V, I_D=-250\mu A$ | -30 | - | - | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-30V, V_{GS}=0V$ | - | - | 1 | μA |
| Gate-Body Leakage Current | I_{GSS} | $V_{GS}=\pm 20V, V_{DS}=0V$ | - | - | ± 100 | nA |
| On characteristics | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=-250\mu A$ | -1.1 | -1.6 | -2.1 | V |
| Drain-Source On-State Resistance | $R_{DS(on)}$ | $V_{GS}=-10V, I_D=-20A$ | - | 3.0 | 3.7 | m Ω |
| | | $V_{GS}=-4.5V, I_D=-20A$ | - | 4.7 | 5.8 | m Ω |
| Forward Transconductance | g_{FS} | $V_{DS}=-10V, I_D=-3A$ | - | 19 | - | S |
| Dynamic characteristics | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS}=-20V, V_{GS}=0V,$ $F=1.0MHz$ | - | 6500 | - | pF |
| Output Capacitance | C_{oss} | | - | 790 | - | pF |
| Reverse Transfer Capacitance | C_{riss} | | - | 760 | - | pF |
| Switching characteristics | | | | | | |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{DD}=-15V, I_D=-30A$ $V_{GS}=-10V, R_{GEN}=6\Omega$ | - | 20 | - | nS |
| Turn-on Rise Time | t_r | | - | 18 | - | nS |
| Turn-Off Delay Time | $t_{d(off)}$ | | - | 95 | - | nS |
| Turn-Off Fall Time | t_f | | - | 30 | - | nS |
| Total Gate Charge | Q_g | $V_{DS}=-15V, I_D=-30A,$ $V_{GS}=-10V$ | - | 118.7 | - | nC |
| Gate-Source Charge | Q_{gs} | | - | 16.1 | - | nC |
| Gate-Drain Charge | Q_{gd} | | - | 30.7 | - | nC |
| Drain-source diode characteristics | | | | | | |
| Diode Forward Voltage | V_{SD} | $V_{GS}=0V, I_S=-30A$ | - | -0.85 | -1.2 | V |
| Diode Forward Current | I_S | | - | - | -60 | A |
| Reverse Recovery Time | t_{rr} | $T_J = 25^\circ C, I_F = -30A$ $di/dt = 100A/\mu s$ | - | 47 | - | nS |
| Reverse Recovery Charge | Q_{rr} | | - | 78 | - | nC |

■ TYPICAL CHARACTERISTICS

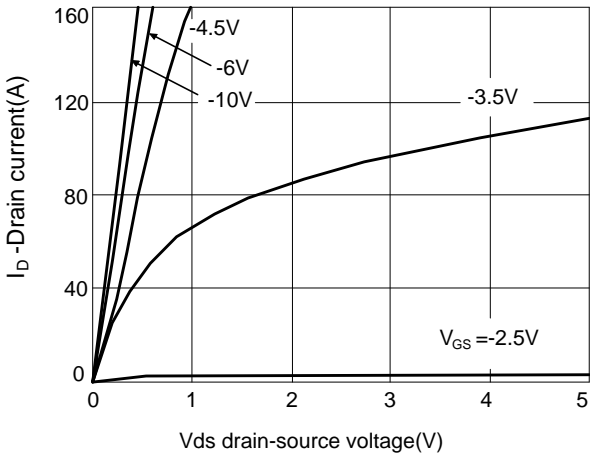


Figure 3: Output characteristics

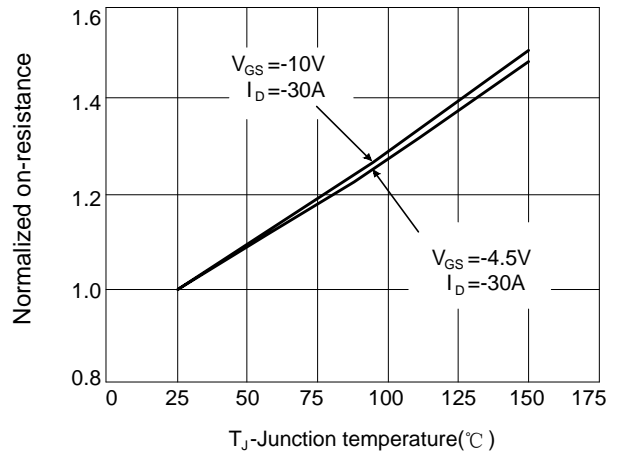


Figure 2: Drain-source on-resistance

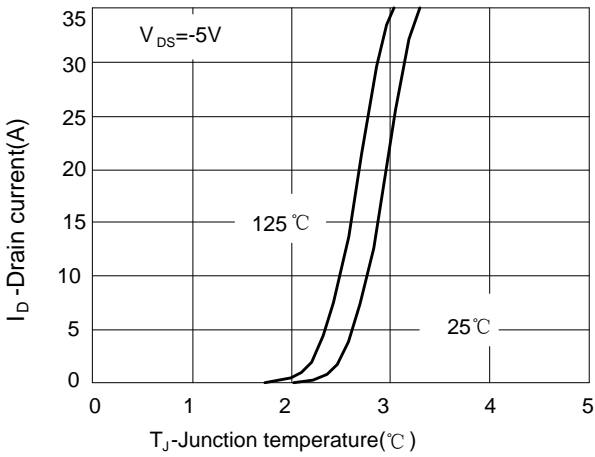


Figure 3: Transfer characteristics

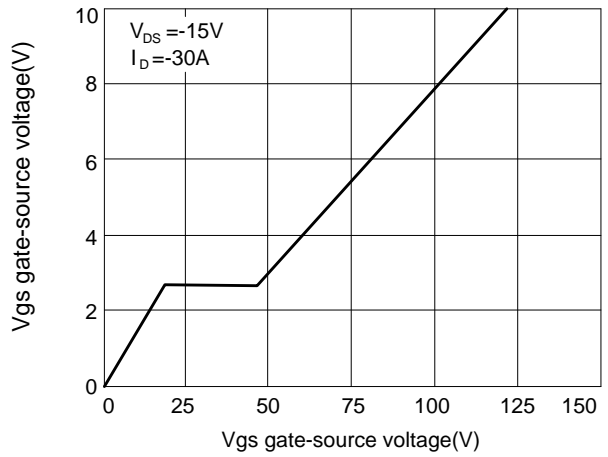


Figure 4: Gate charge

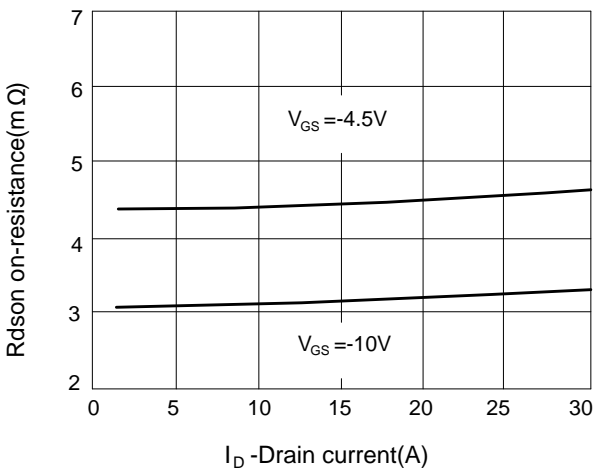


Figure 4: R_{dson} -drain current

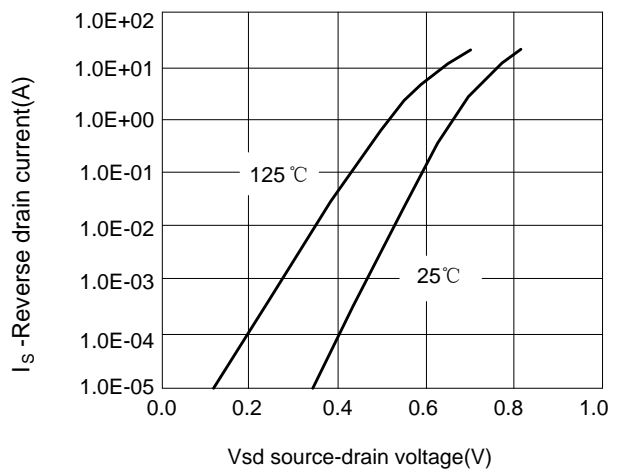


Figure 6: Source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

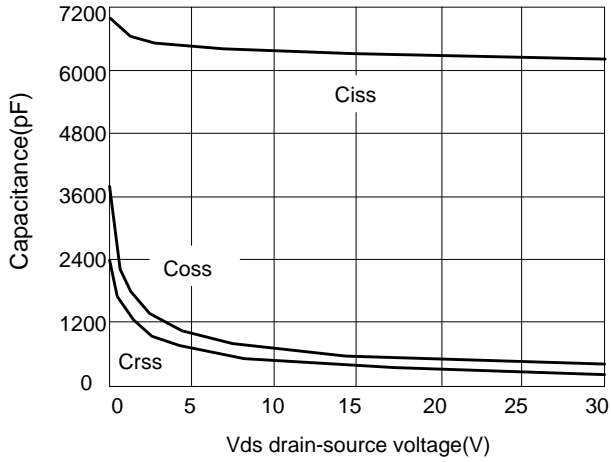


Figure 7: Capacitance vs vds

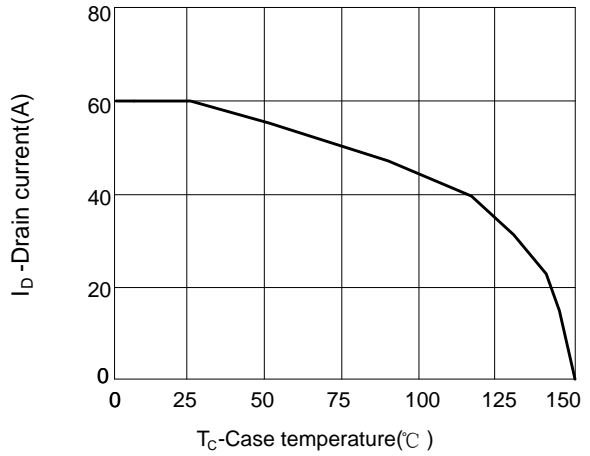


Figure 8: ID current derating vs junction temperature

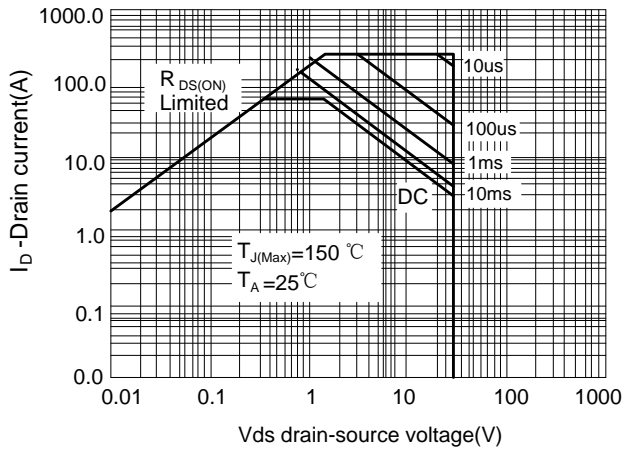
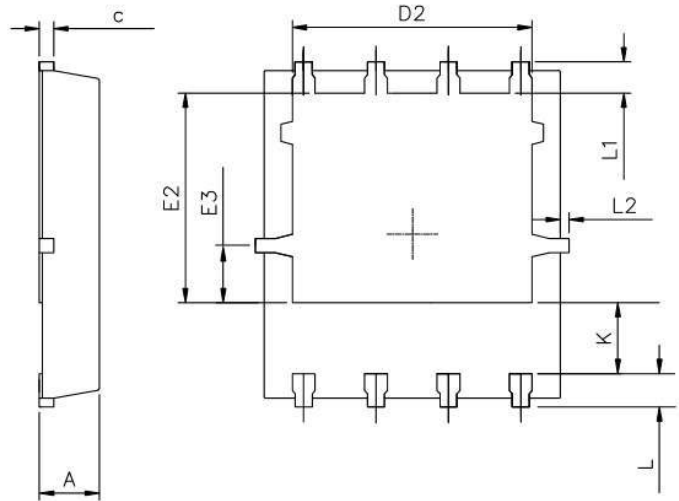
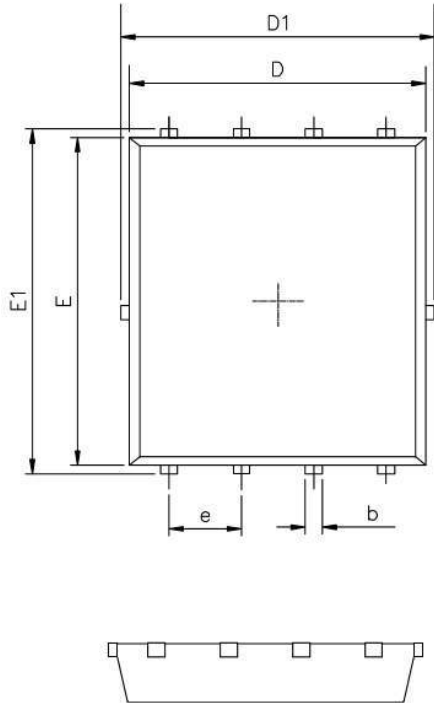
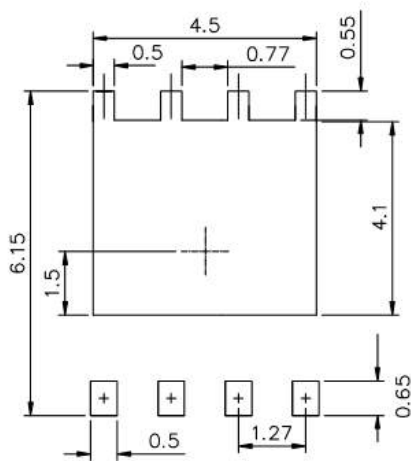


Figure 9 Safe operation area

■ PDFN5X6-8L Package Mechanical Data



RECOMMENDED LAND PATTERN



UNIT:mm

| | MIN | NOM | MAX |
|----|-------|-------|-------|
| A | 0.90 | 1.00 | 1.10 |
| b | 0.25 | 0.35 | 0.50 |
| c | 0.10 | 0.20 | 0.30 |
| D | 4.80 | 5.00 | 5.30 |
| D1 | 4.90 | 5.10 | 5.50 |
| D2 | 3.92 | 4.02 | 4.20 |
| E | 5.65 | 5.75 | 5.85 |
| E1 | 5.90 | 6.05 | 6.20 |
| E2 | 3.325 | 3.525 | 3.775 |
| E3 | 0.80 | 0.90 | 1.00 |
| e | | 1.27 | |
| L | 0.40 | 0.55 | 0.70 |
| L1 | | 0.65 | |
| L2 | 0.00 | | 0.15 |
| K | 1.00 | 1.30 | 1.50 |

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