

■ PRODUCT CHARACTERISTICS

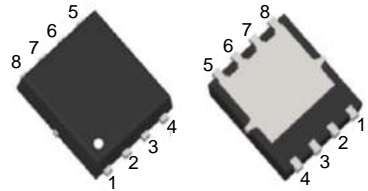
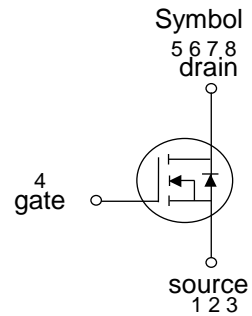
| | |
|---|------|
| V _{DSS} | 30V |
| R _{DS(on)} Typ(@V _{GS} =4.5V) | 19mΩ |
| R _{DS(on)} Typ(@V _{GS} =10V) | 13mΩ |
| I _D | 8A |

■ APPLICATIONS

DC/DC converter
Ideal for high-frequency switching
and synchronous rectification

■ FEATURES

Very low on-resistance R_{DS(on)}
Good stability and uniformity with high EAS
Pb-free lead plating



PDFN3X3-8L

■ ORDER INFORMATION

| Order codes | | Package | Packing |
|--------------|----------|------------|-----------------|
| Halogen-free | Halogen | | |
| N/A | MOT3520J | PDFN3X3-8L | 5000pieces/Reel |

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

| Parameter | Symbol | Value | Unit |
|----------------------|------------------|-----------|------|
| Drain-source voltage | V _{DSS} | 30 | V |
| Gate-source voltage | V _{GSS} | ±20 | V |
| Drain current | I _D | 8 | A |
| Pulsed drain current | I _{DM} | 30 | A |
| Power dissipation | P _D | 1.5 | W |
| Junction temperature | T _J | +150 | °C |
| Storage temperature | T _{STG} | -55~ +150 | °C |

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

| Parameter | Symbol | Condition | Min | Typ | Max | Unit |
|--|---------------------|--|-----|------|-----|------|
| Off characteristics | | | | | | |
| Drain-source breakdown voltage | BV _{DSS} | V _{GS} =0V, I _{DS} =250μA | 30 | - | - | V |
| Drain-source leakage current | I _{DSS} | V _{DS} =30V, V _{GS} =0V | - | - | 1 | μA |
| Gate-source leakage current | I _{GSS} | V _{GS} = ±20V, V _{DS} =0V | - | - | 100 | nA |
| On characteristics | | | | | | |
| Gate threshold voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _{DS} =250μA | 1 | - | 2.4 | V |
| On-state characteristics | R _{DS(ON)} | V _{GS} =10V, I _D =8A | - | 13 | 20 | mΩ |
| | | V _{GS} =4.5V, I _D =6A | - | 19 | 29 | mΩ |
| Forward transconductance | g _{FS} | V _{DS} =10V, I _D =8A | 10 | - | - | S |
| Dynamic characteristics | | | | | | |
| Input capacitance | C _{iss} | V _{GS} =0V, V _{DS} =15V f=1MHz | - | 564 | - | pF |
| Out capacitance | C _{oss} | | - | 75 | - | pF |
| Reverse transfer capacitance | C _{rss} | | - | 66 | - | pF |
| Switching characteristics | | | | | | |
| Total gate charge | Q _g | V _{GS} =10V, V _{DS} =15V I _D =8A | - | 19.4 | - | nC |
| Gate-source charge | Q _{gs} | | - | 2.5 | - | nC |
| Gate-drain charge | Q _{gd} | | - | 5 | - | nC |
| Turn-on delay time | t _{d(on)} | V _{DD} =30V, I _D =1.5A R _G =1Ω, V _{GS} =10V | - | 9 | - | nS |
| Turn-on rise time | t _r | | - | 10 | - | nS |
| Turn-off delay time | t _{d(off)} | | - | 15 | - | nS |
| Turn-off fall time | t _f | | - | 5 | - | nS |
| Source-drain diode ratings and characteristics | | | | | | |
| Continuous diode forward current | I _{SD} | | - | - | 8 | A |
| Diode forward current | V _{SD} | V _{GS} =0V, I _{SD} =8A | - | - | 1.2 | V |
| Reverse recovery time | t _{rr} | I _F =6A di/dt=100A/us | - | 27 | - | nS |
| Reverse recovery charge | Q _{rr} | | - | 20 | - | nC |

■ TYPICAL CHARACTERISTICS

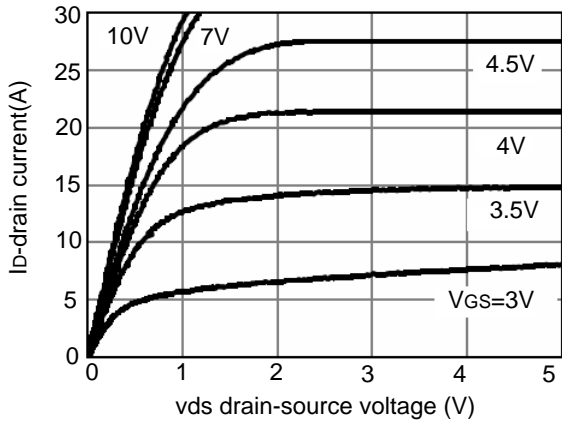


Fig.1 output characteristics

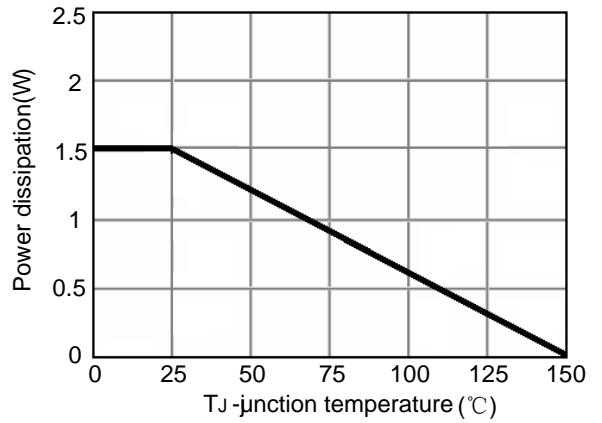


Fig.2 power dissipation

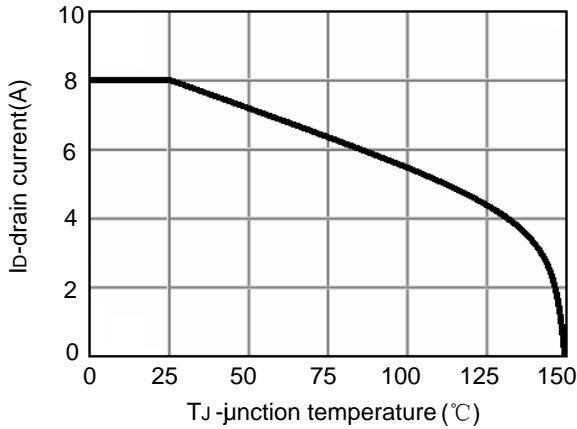


Fig.3 drain current

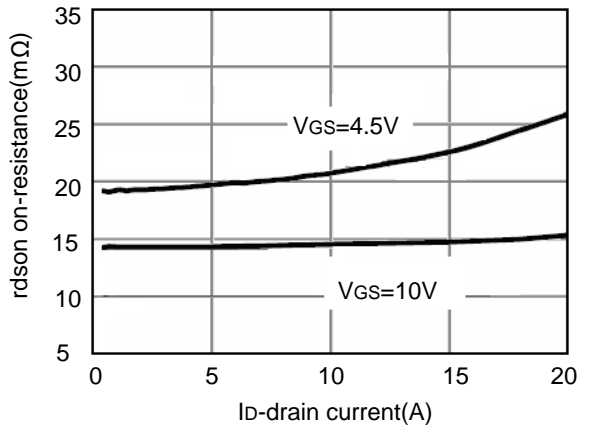


Fig.4 drain-source on-resistance

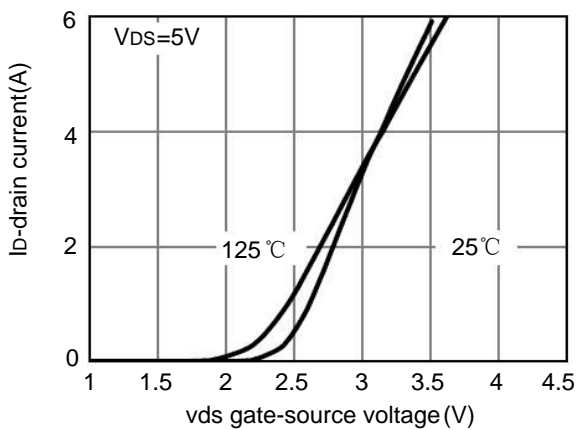


Fig.5 transfer characteristics

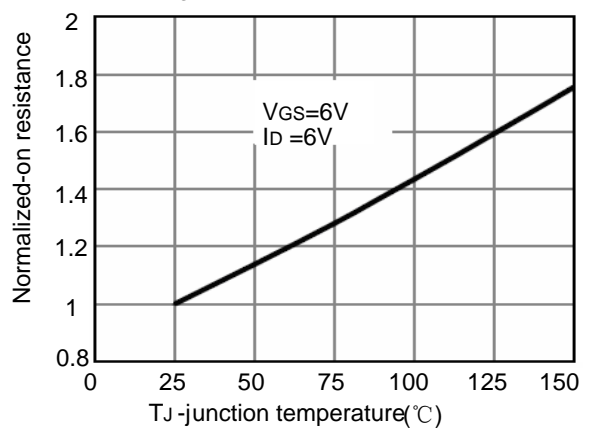


Fig.6 drain-source on-resistance

■ TYPICAL CHARACTERISTICS(Cont.)

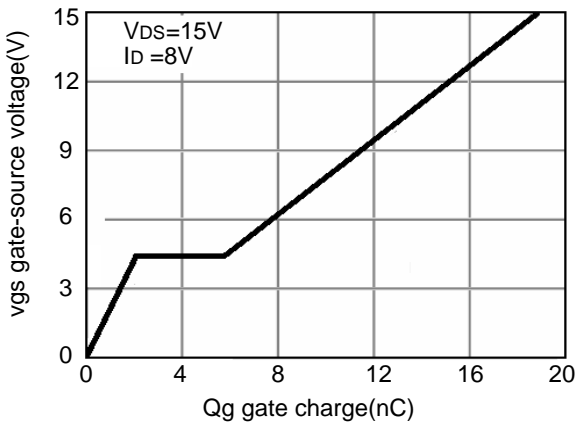


Fig.7 gate charge

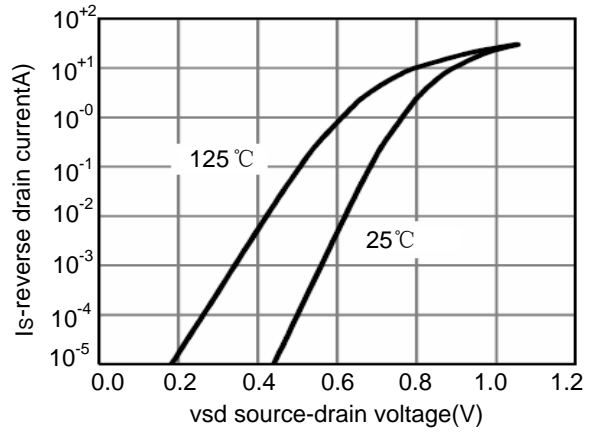


Fig.8 source-drain diode forward

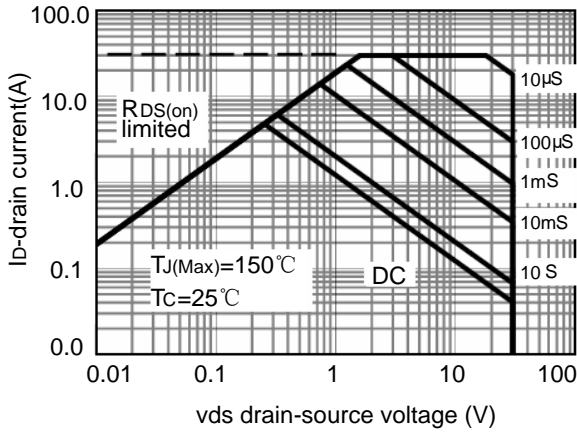


Fig.9 safe operation area

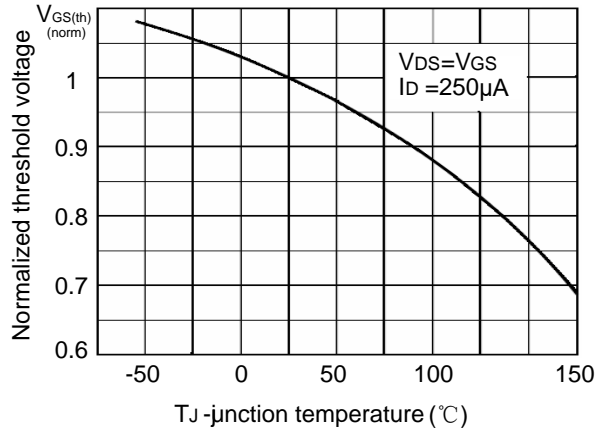
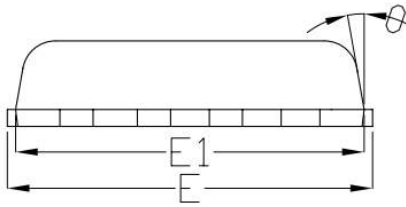
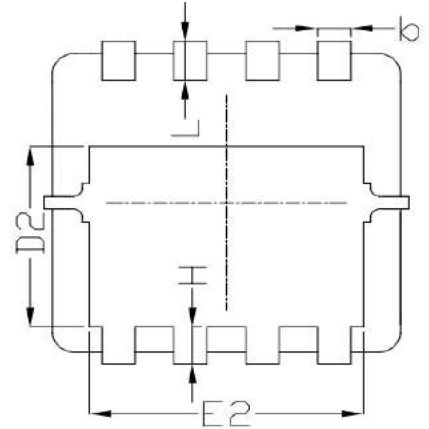
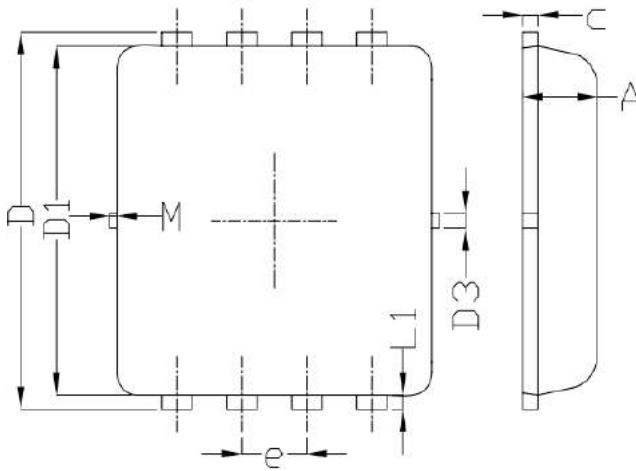
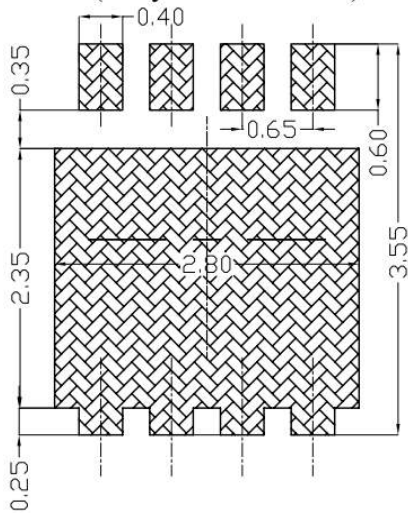


Fig.10 $V_{GS(th)}$ VS junction temperature

■ PDFN3X3-8L PACEAGE MECHANICAL DATA



Land Pattern
(Only for Reference)



| SYMBOL | DIMENSIONAL REOMTS | | |
|-----------------|--------------------|------|------|
| | MIN | NOM | MAX |
| A | 0.70 | 0.75 | 0.80 |
| b | 0.25 | 0.30 | 0.35 |
| c | 0.10 | 0.15 | 0.25 |
| D | 3.25 | 3.35 | 3.45 |
| D1 | 3.00 | 3.10 | 3.20 |
| D2 | 1.78 | 1.88 | 1.98 |
| D3 | --- | 0.13 | --- |
| E | 3.20 | 3.30 | 3.40 |
| E1 | 3.00 | 3.15 | 3.20 |
| E2 | 2.39 | 2.49 | 2.59 |
| e | 0.65BSC | | |
| H | 0.30 | 0.39 | 0.50 |
| L | 0.30 | 0.40 | 0.50 |
| L1 | --- | 0.13 | --- |
| θ | --- | 10° | 12° |
| M | * | * | 0.15 |
| * Not specified | | | |

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