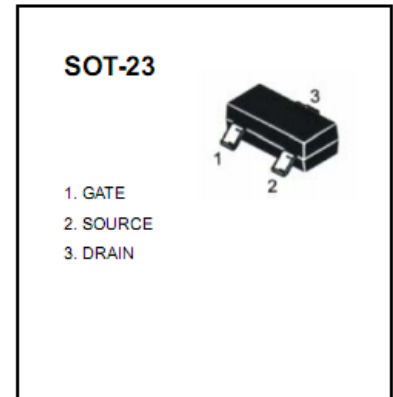
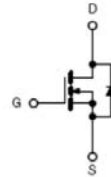


FH2300-2.5A

N-Channel Enhancement Mode Field Effect Transistor

FEATURES

TrenchFET Power MOSFET



MARKING: 2300

MAXIMUM RATINGS (TA=25°C unless otherwise noted)

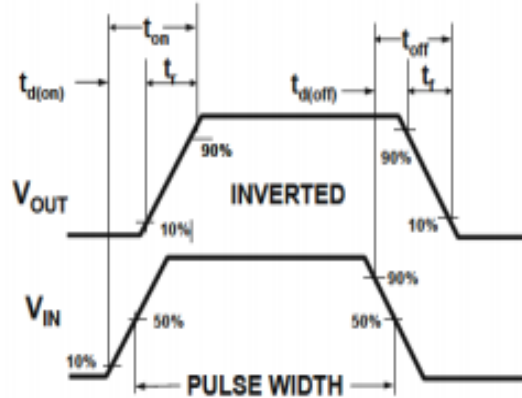
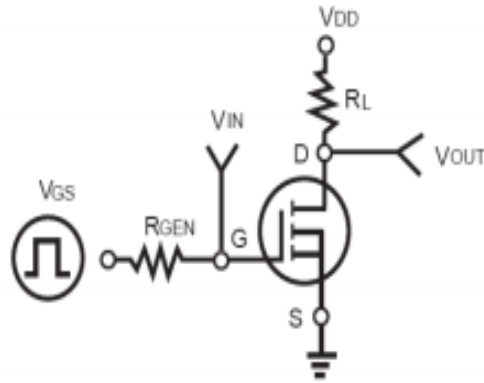
| Symbol | Parameter | Value | Units |
|------------------|----------------------|---------|-------|
| V _{DS} | Drain-Source voltage | 20 | V |
| V _{GS} | Gate-Source voltage | ±12 | V |
| I _D | Drain current | 2.5 | A |
| P _D | Power Dissipation | 0.9 | W |
| T _j | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -55-150 | °C |

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|------------------------------------|----------------------|---|-----|------|------|------|
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =250uA | 20 | | | V |
| Gate-Threshold Voltage | V _{th(GS)} | V _{DS} =V _{GS} , I _D =250 uA | 0.5 | 0.75 | 1.2 | V |
| Gate-body Leakage | I _{GSS} | V _{DS} =0V, V _{GS} =±10V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =20V, V _{GS} =0V | | | 1 | uA |
| Drain-Source On-Resistance | r _{DS(ON)} | V _{GS} =2.5V, I _D =2A | | 58 | 82 | mΩ |
| | | V _{GS} =4.5V, I _D =2.5A | | 43 | 59 | mΩ |
| Forward Trans conductance | g _{fs} | V _{DS} =5V, I _D =2.9A | | 9.5 | | s |
| Dynamic Characteristics | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =10V, V _{GS} =0V, f=1MHz | | 280 | | pF |
| Output Capacitance | C _{oss} | | | 60 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 40 | | |
| Switching Capacitance | | | | | | |
| Turn-on Delay Time | t _{d(on)} | V _{DD} =10V, I _D =2.5A, V _{GS} =4.5V, R _{GEN} =2.8Ω | | 6 | | nS |
| Turn-on Rise Time | t _r | | | 5 | | nS |
| Turn-off Delay Time | t _{d(off)} | | | 9 | | nS |
| Turn-off Fall Time | t _f | | | 1.5 | | nS |
| Total Gate Charge | Q _g | V _{DS} =10V, I _D =2.5A, V _{GS} =4.5V, | | 1.7 | | nC |
| Gate-Source Charge | Q _{gs} | | | 0.3 | | nC |
| Gate-Drain Charge | Q _{gd} | | | 0.8 | | nC |
| Drain-Source Diode Characteristics | | | | | | |
| Diode Forward Voltage | V _{SD} | V _{GS} =0V, I _S =2.5A | | | 1.2 | V |
| Diode Forward Current | I _S | | | | 2.5 | A |

Typical Characteristics

Switch Time Test Circuit and Switching Waveforms:



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS (Curves)

Figure1. Power Dissipation

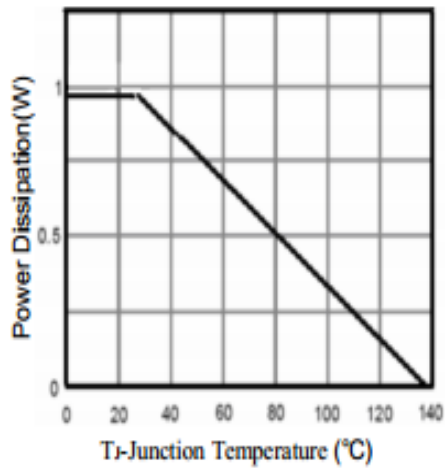


Figure2. Drain Current

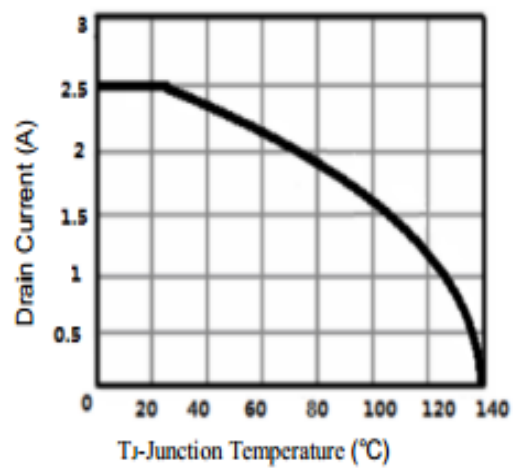


Figure3. Output Characteristics

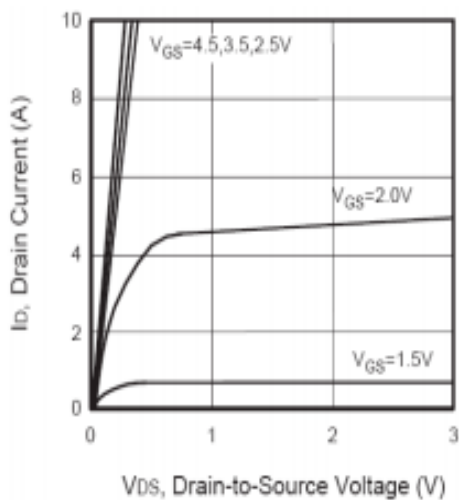
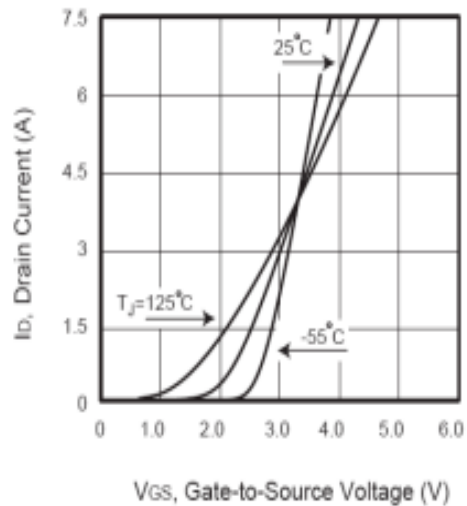
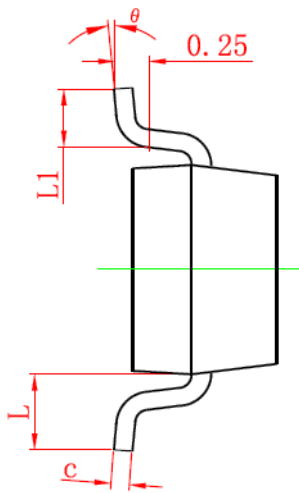
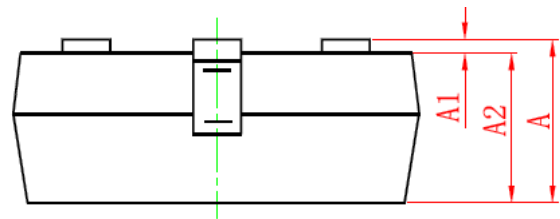
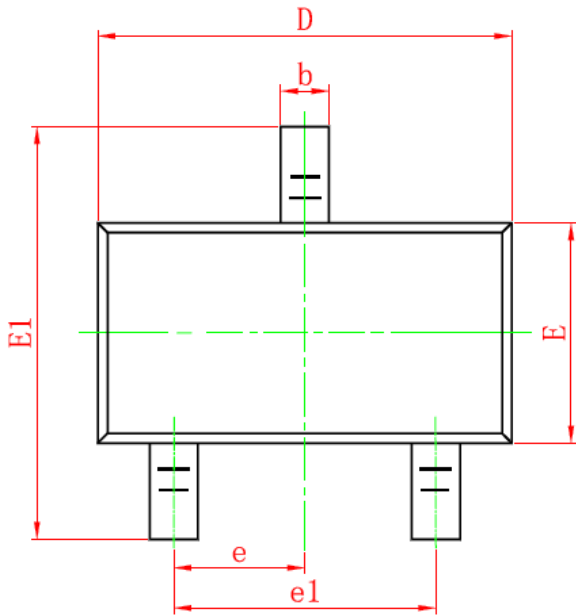


Figure4. Transfer Characteristics



SOT-23 PACKAGE INFORMATION



| Symbol | Dimensions in Millimeters | |
|--------|---------------------------|-------|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |