## Features

- High Density Cell Design For Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

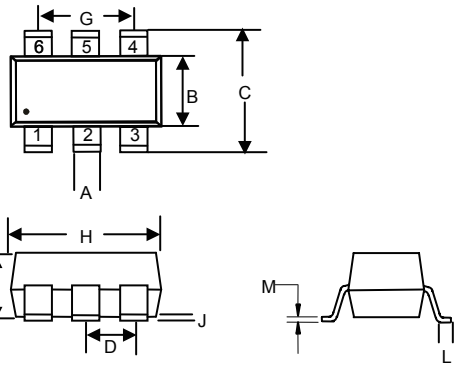
# DUAL N-CHANNEL MOSFET

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 277°C/W Junction to Ambient

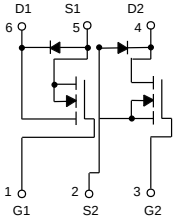
| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 60 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | V |
| Drain Current | $I_D$ | 115 | mA |
| Total Power Dissipation | $P_D$ | 225 | mW |

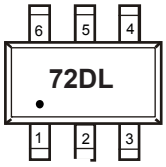
## SOT23-6L




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | 0.012 | 0.020 | 0.30 | 0.50 | |
| B | 0.051 | 0.070 | 1.30 | 1.80 | |
| C | 0.087 | 0.126 | 2.20 | 3.20 | |
| D | 0.037 | | 0.95 | | TYP. |
| G | 0.074 | | 1.90 | | TYP. |
| H | 0.106 | 0.122 | 2.70 | 3.10 | |
| J | 0.002 | 0.006 | 0.05 | 0.15 | |
| K | 0.030 | 0.051 | 0.75 | 1.30 | |
| L | 0.012 | 0.024 | 0.30 | 0.60 | |
| M | 0.003 | 0.008 | 0.08 | 0.22 | |

## Circuit and Pin Schematic




Dot Denotes Pin1

**ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)**

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}$=0V, $I_D$=250μA | 60 | | | V |
| Gate-Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$, $I_D$=250μA | 1.0 | 1.4 | 2.5 | V |
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{GS}$ =±20V, $V_{DS}$ =0V | | | ±1 | μA |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$ =60V, $V_{GS}$ =0V | | | 100 | nA |
| On-State Drain Current | $I_{D(ON)}$ | $V_{DS}$ =7.0V, $V_{GS}$ =10V | 500 | | | mA |
| Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}$=10V, $I_D$=500mA | | | 4.5 | Ω |
| | | $V_{GS}$=5.0V, $I_D$=50mA | | | 5.0 | |
| On-State Drain-Source Voltage | $V_{DS(on)}$ | $V_{GS}$=10V, $I_D$=500mA | | | 3.0 | V |
| | | $V_{GS}$=5V, $I_D$=50mA | | | 0.375 | |
| **Dynami Characteristics** | | | | | | |
| Input Capacitance(1) | $C_{iss}$ | $V_{DS}$=25V,$V_{GS}$=0V, f=1MHz | | 10.1 | 50 | pF |
| Output Capacitance(1) | $C_{oss}$ | | | 4.2 | 25 | |
| Reverse Transfer Capacitance(1) | $C_{rss}$ | | | 1.9 | 5 | |
| **Switching Characteristics** | | | | | | |
| Turn-On Delay Time(1) | $t_{d(on)}$ | $V_{DD}$=10V,$V_{GEN}$=10V,$R_L$=20Ω , $I_D$=500mA,$R_{GEN}$=10Ω | | 5.6 | | ns |
| Turn-Off Delay Time(1) | $t_{d(off)}$ | | | 25 | | |
| **Source-Drain Diode Characteristics** | | | | | | |
| Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V, $I_S$=150mA | 0.6 | 0.82 | 1.0 | V |
| Source Current Continuous | $I_S$ | | | | 115 | mA |

Note: 1. These Parameters Have No Way to Verify.

## Curve Characteristics

Fig. 1 - Output Characteristics

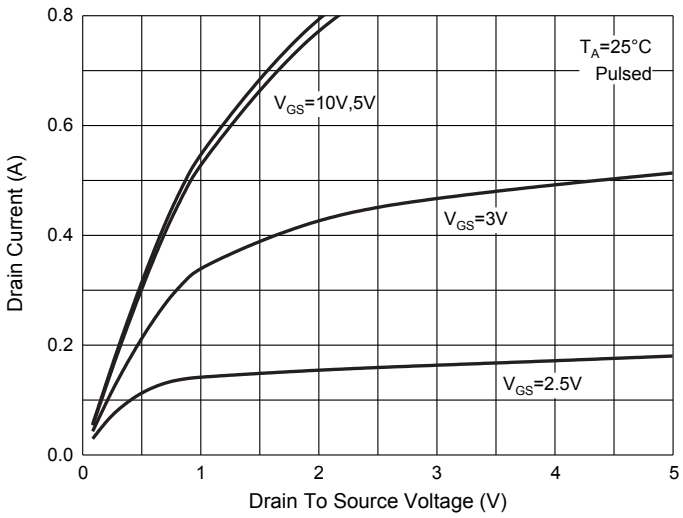



Fig. 2 - Transfer Characteristics

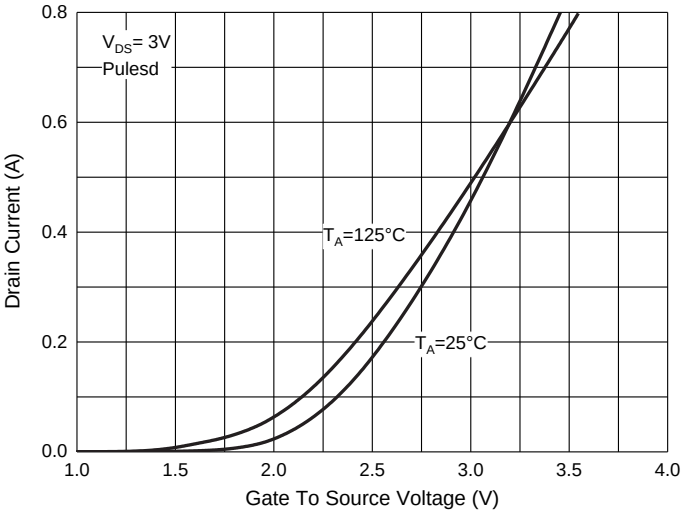



Fig. 3 - $R_{DS(ON)}$—$I_D$

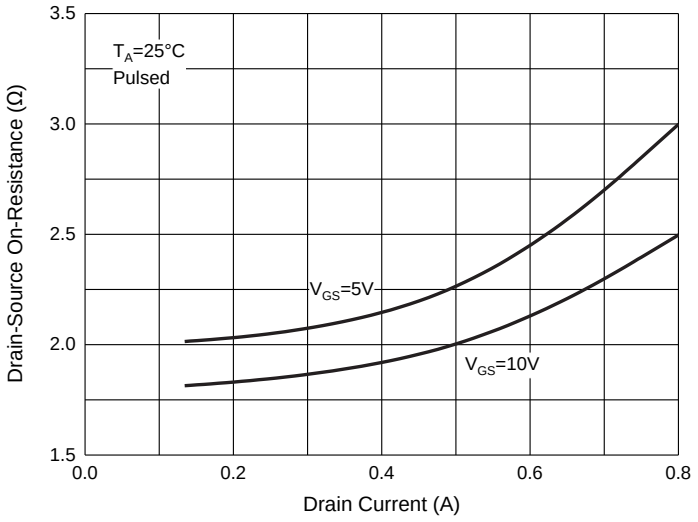



Fig. 4 - $R_{DS(ON)}$—$V_{GS}$

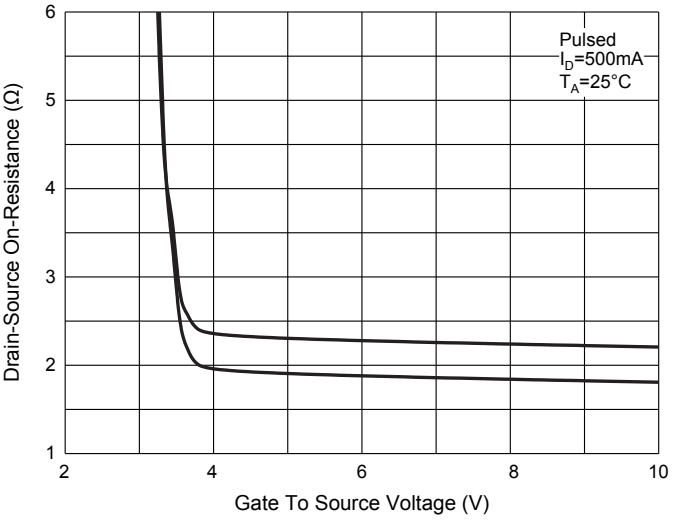



Fig. 5 - $I_S$—$V_{SD}$

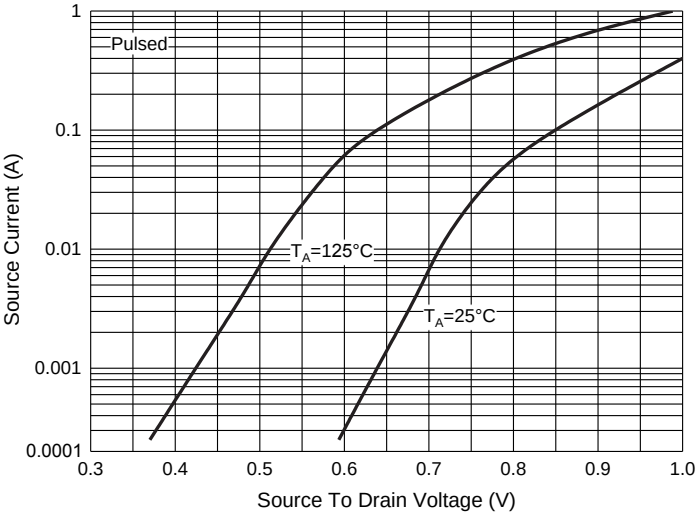
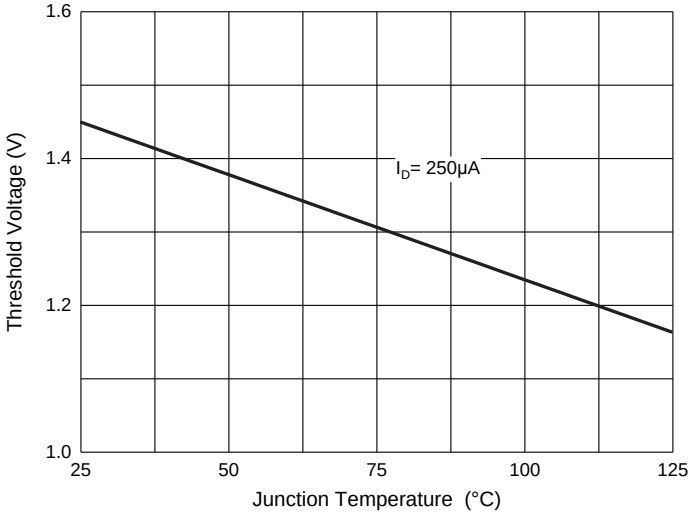



Fig. 6 - Threshold Voltage



## Ordering Information

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF