

Features

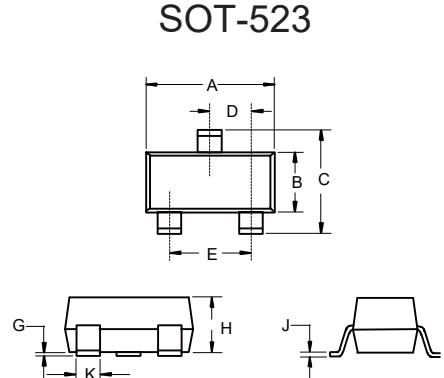
- Low On-Resistance
- Fast Switching Speed
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-Channel MOSFET

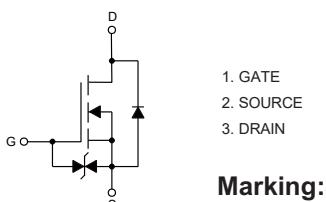
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 833°C/W Junction to Ambient

| Parameter | Symbol | Rating | Unit |
|--|----------|----------|------|
| Drain -source Voltage | V_{DS} | 20 | V |
| Gate -Source Voltage | V_{GS} | ± 12 | V |
| Drain Current-Continuous | I_D | 0.75 | A |
| Pulsed Drain Current ^(Note 1) | I_{DM} | 3.0 | A |
| Power Dissipation ^(Note 2) | P_D | 0.15 | W |



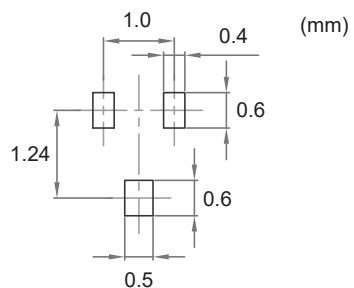
Internal Structure



Marking: 34K

| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.059 | 0.067 | 1.50 | 1.70 | |
| B | 0.030 | 0.033 | 0.75 | 0.85 | |
| C | 0.057 | 0.069 | 1.45 | 1.75 | |
| D | 0.020 | | 0.50 | | TYP. |
| E | 0.035 | 0.043 | 0.90 | 1.10 | |
| G | 0.000 | 0.004 | 0.00 | 0.10 | |
| H | 0.024 | 0.031 | 0.60 | 0.80 | |
| J | 0.004 | 0.008 | 0.10 | 0.20 | |
| K | 0.006 | 0.014 | 0.15 | 0.35 | |

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25°C 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 | 20 | | | V |
| Gate-Threshold Voltage ^(Note 3) | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 0.35 | 0.75 | 1.1 | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =20V, V _{GS} =0V | | | 1.0 | μA |
| Gate-body Leakage Current | I _{GSS} | V _{GS} =±10V, V _{DS} =0V | | | ±20 | μA |
| Drain-Source On-Resistance ^(Note 3) | R _{DS(on)} | V _{GS} =4.5V, I _D =650mA | | 0.19 | 0.38 | Ω |
| | | V _{GS} =2.5V, I _D =550mA | | 0.26 | 0.45 | |
| | | V _{GS} =1.8V, I _D =450mA | | 0.39 | 0.80 | |
| Forward transconductance | g _{FS} | V _{DS} =10V, I _D =800mA | 1.0 | | | S |
| Diode Forward Voltage ^(Note 3) | V _{SD} | V _{GS} =0V, I _S =150mA | | | 1.2 | V |
| Dynamic Characteristics^(Note 4) | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =16V, V _{GS} =0V, f=1MHz | | | 120 | pF |
| Output Capacitance | C _{oss} | | | | 20 | |
| Reverse Transfer Capacitance | C _{rss} | | | | 15 | |
| Switching Characteristics^(Note 4) | | | | | | |
| Turn-on Delay Time | t _{d(on)} | V _{DS} =10V, V _{GS} =4.5V, I _D =500 mA, R _{GEN} =10Ω | | 6.7 | | ns |
| Turn-off Delay Time | t _{d(off)} | | | 17.3 | | |
| Rise Time | t _r | | | 4.8 | | |
| Fall Time | t _f | | | 7.4 | | |

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at Ta=25°C.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

Curve Characteristics

Fig. 1 - Output Characteristics

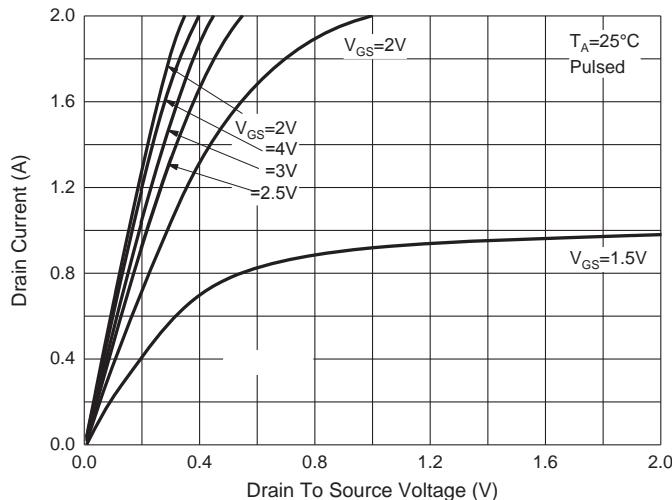


Fig. 2 - Transfer Characteristics

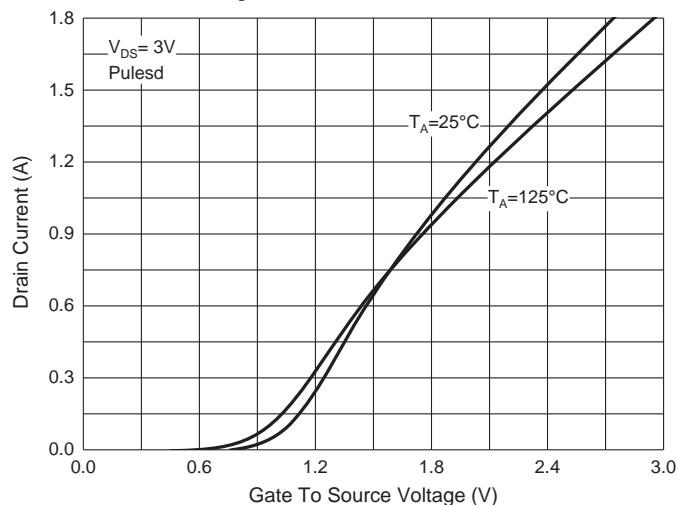


Fig. 3 - $R_{DS(ON)}$ — I_D

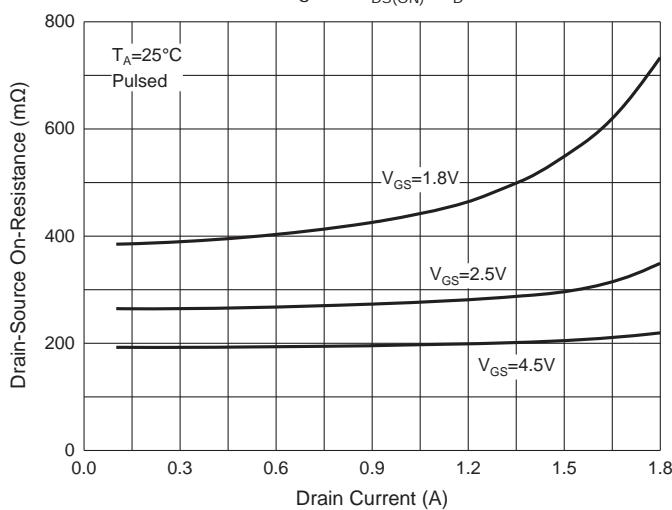


Fig. 4 - $R_{DS(ON)}$ — V_{GS}

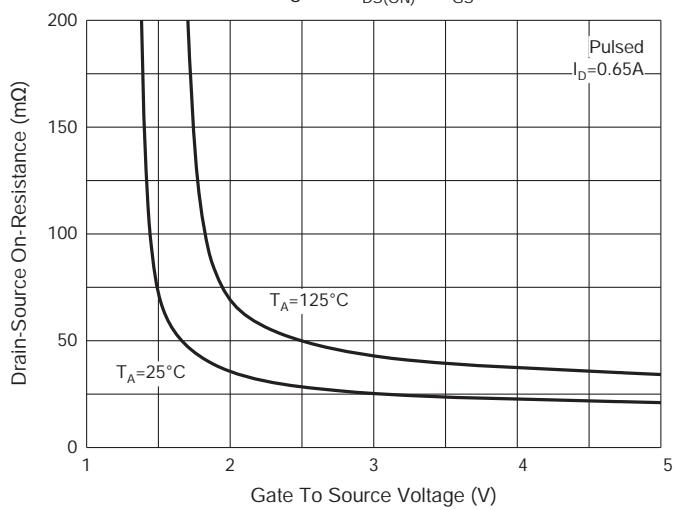


Fig. 5 - I_S — V_{SD}

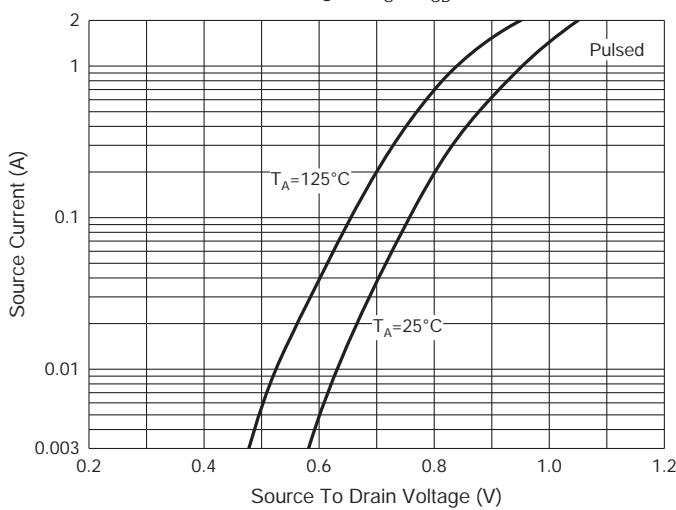
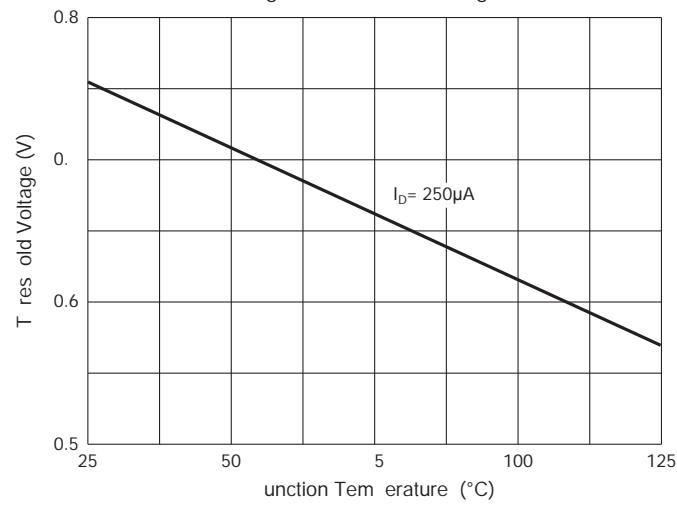


Fig. 6 - $T_{res\ old}$ vs. V_{GS}



Ordering Information

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

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

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