

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

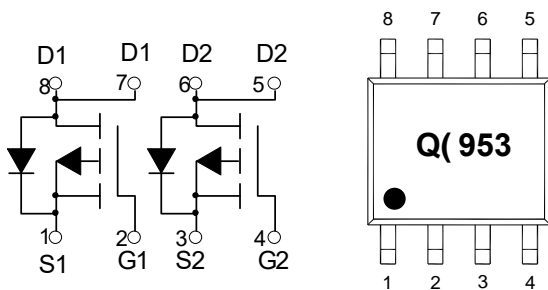
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient (Note 2)

| Parameter | Symbol | Rating | Unit |
|--------------------------|----------|--------|------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Gate-Source Voltage | V_{GS} | ±20 | V |
| Continuous Drain Current | I_D | -5.0 | A |
| Total Power Dissipation | P_D | 2.5 | W |

Note:

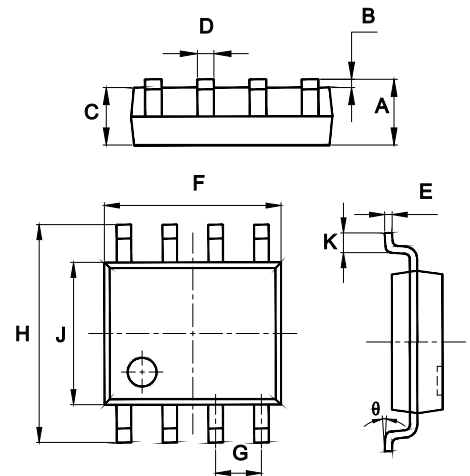
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The Value of $R_{\theta JA}$ is Measured with the Device Mounted on 1 in² FR-4 Board with 2oz Copper, in a Still Air Environment with $T_A=25^\circ\text{C}$.

Internal Structure and Marking Code



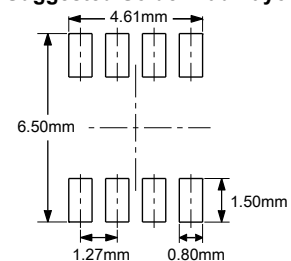
Dual P-Channel Power MOSFET

SOP-8



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.053 | 0.069 | 1.35 | 1.75 | |
| B | 0.004 | 0.010 | 0.10 | 0.25 | |
| C | 0.053 | 0.061 | 1.35 | 1.55 | |
| D | 0.013 | 0.020 | 0.33 | 0.51 | |
| E | 0.007 | 0.010 | 0.17 | 0.25 | |
| F | 0.185 | 0.200 | 4.70 | 5.10 | |
| G | 0.050 | | 1.270 | | TYP. |
| H | 0.228 | 0.244 | 5.80 | 6.20 | |
| J | 0.150 | 0.157 | 3.80 | 4.00 | |
| K | 0.016 | 0.050 | 0.40 | 1.27 | |
| θ | 0° | 8° | 0° | 8° | |

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|---------------|--|------|------|-----------|------------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}=0V, I_D=-250\mu A$ | -30 | | | V |
| Gate-Source Leakage Current | I_{GSS} | $V_{DS}=0V, V_{GS}=\pm 20V$ | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-30V, V_{GS}=0V$ | | | -1 | μA |
| Gate-Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=-250\mu A$ | -1.0 | -1.5 | -2.5 | V |
| Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=-10V, I_D=-4.9A$ | | 50 | 60 | m Ω |
| | | $V_{GS}=-4.5V, I_D=-3.7A$ | | 66 | 90 | |
| Forward Transconductance ^(Note 3) | g_{FS} | $V_{DS}=-10V, I_D=-4.9A$ | 6 | | | S |
| Diode Forward Voltage ^(Note 3) | V_{SD} | $V_{GS}=0V, I_S=-1.7A$ | | | -1.2 | V |
| Dynamic Characteristics^(Note4) | | | | | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{GEN}=-10V, V_{DD}=-15V, I_D\approx -1A$ $R_G=6\Omega, R_L=15\Omega$ | | | 15 | ns |
| Turn-On Rise Time | t_r | | | | 20 | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | | 80 | |
| Turn-Off Fall Time | t_f | | | | 40 | |
| Total Gate Charge | Q_g | $V_{GS}=-10V, V_{DS}=-15V$ $I_D=-4.9A$ | | | 25 | nC |
| Gate-Source Charge | Q_{gs} | | | 4 | | |
| Gate-Drain Charge | Q_{gd} | | | 2 | | |

Notes :

 3.Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

4.Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

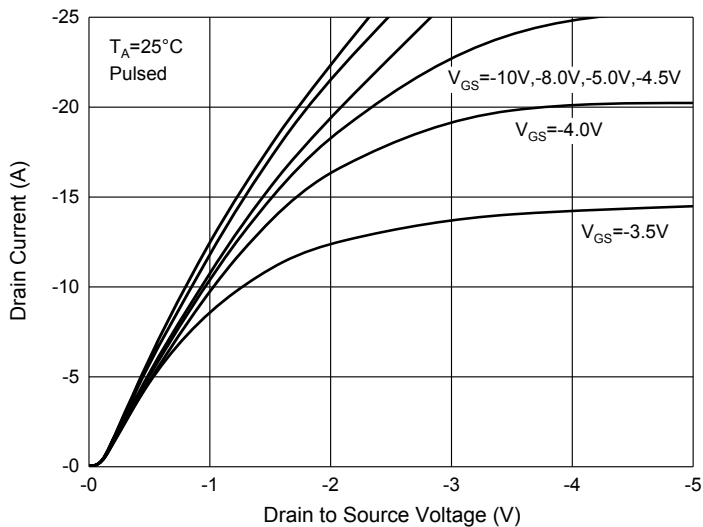


Fig. 2 - Transfer Characteristics

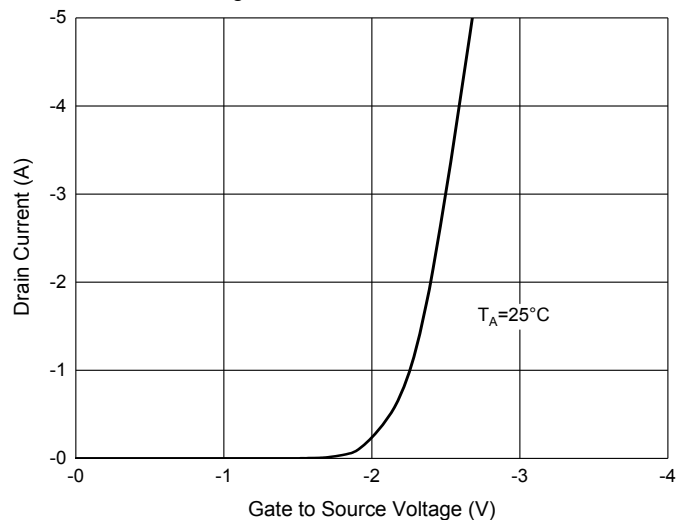


Fig. 3 - $R_{DS(ON)} - I_D$

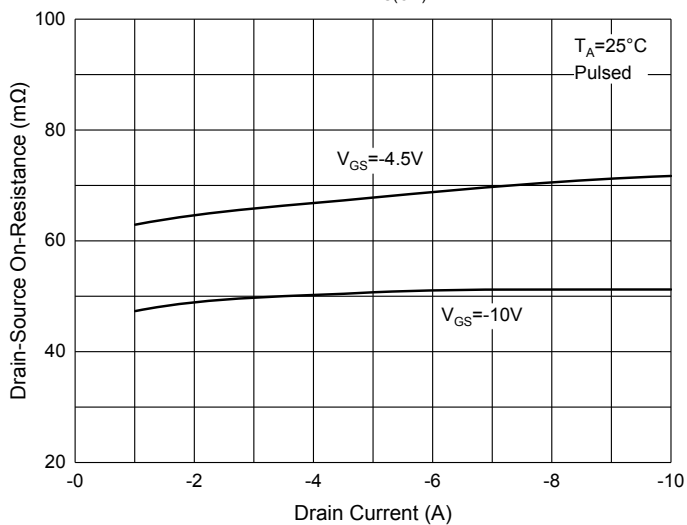


Fig. 4 - $R_{DS(ON)} - V_{GS}$

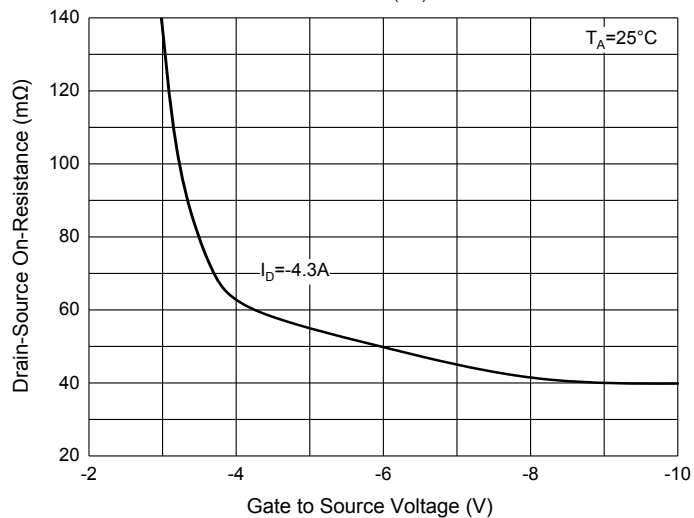


Fig. 5 - $I_S - V_{SD}$

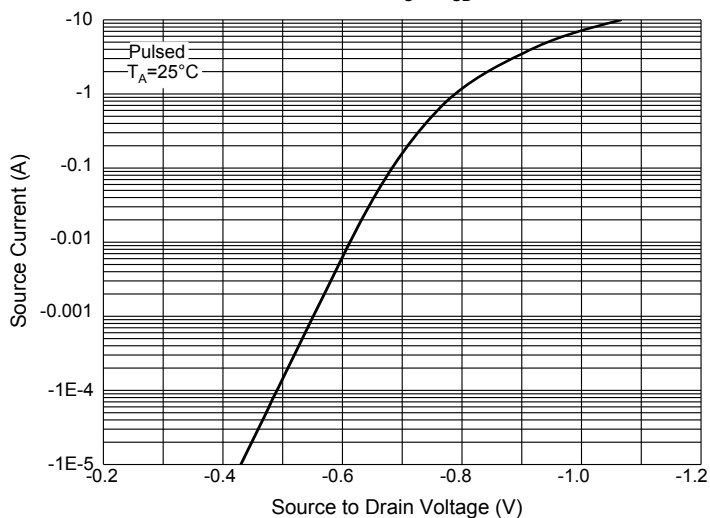
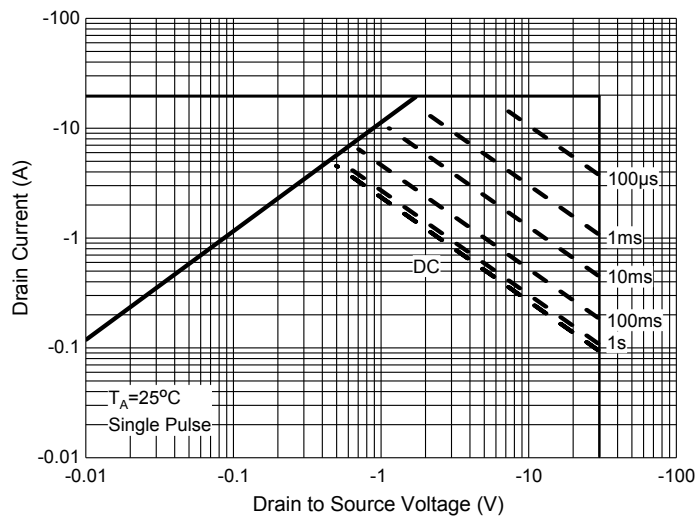


Fig. 6 - Safe Operation Area



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 4Kpcs/Reel |

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