

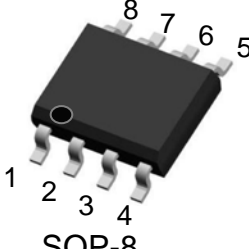
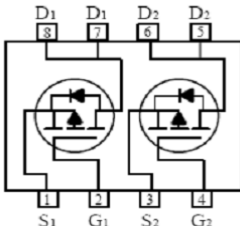
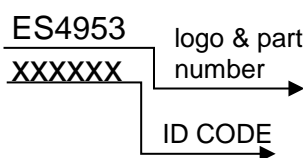
Dual P-Channel Enhancement-Mode MOSFET (-30V, -5.3A)

PRODUCT SUMMARY

| | | |
|-----------|-------|------------------------------------|
| V_{DSS} | I_D | $R_{DS(on)}$ (m Ω)TYP |
| -30V | -5.3A | 49 @ $V_{GS} = -10V, I_D = -5.3A$ |
| | | 68 @ $V_{GS} = -4.5V, I_D = -3.9A$ |

Features

- Advanced Trench Process Technology
- High Density Cell Design for Ultra Low On-Resistance
- Surface mount Package
- Lead (Pb) -free and halogen-free

| | | | |
|---|---|--|---|
|  <p>SOP-8</p> |  | <p>Pin1: Source1 Pin2: Gate1 Pin3: Source2 Pin4: Gate2 Pin5/6: Drain2 Pin7/8: Drain1</p> | TOP Marking |
| | | |  |

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$, unless otherwise noted)

| Symbol | Parameter | Ratings | Units |
|----------------|---|-------------|--------------------|
| V_{DS} | Drain-Source Voltage | -30 | V |
| V_{GS} | Gate-Source Voltage | ± 20 | V |
| I_D | Drain Current (Continuous) | -5.3 | A |
| I_{DM} | Drain Current (Pulsed) ^a | -20 | A |
| P_D | Total Power Dissipation @ $T_A=25^\circ\text{C}$ | 2.0 | W |
| I_S | Maximum Diode Forward Current | -2 | A |
| T_J, T_{stg} | Operating Junction and Storage Temperature Range | -55 to +150 | $^\circ\text{C}$ |
| R_{QJA} | Thermal Resistance Junction to Ambient (PCB mounted) ^b | 50 | $^\circ\text{C/W}$ |

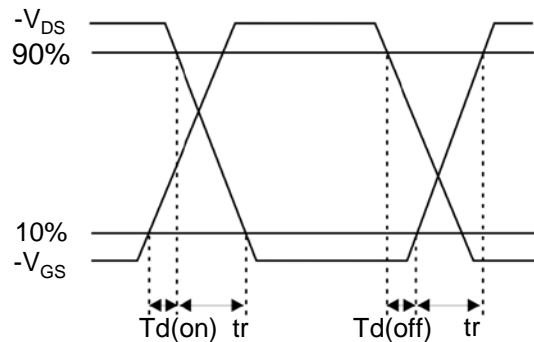
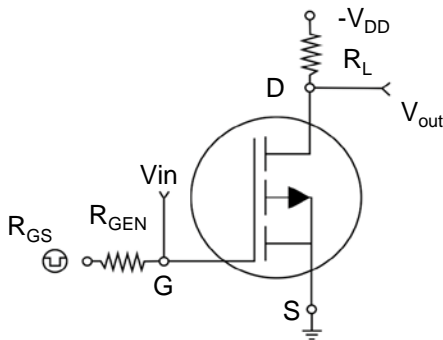
a: Repetitive Rating: Pulse width limited by the maximum junction temperature.

b: 1-in² 2oz Cu PCB board

Electrical Characteristics ($T_A=25^\circ\text{C}$, unless otherwise noted)

| Symbol | Characteristic | Test Conditions | Min. | Typ. | Max. | Unit |
|---|----------------------------------|--|------|------|-----------|------------|
| • Off Characteristics | | | | | | |
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=-250\mu A$ | -30 | - | - | V |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=-18V, V_{GS}=0V$ | - | - | -1 | μA |
| I_{GSS} | Gate-Body Leakage Current | $V_{GS}=\pm 10V, V_{DS}=0V$ | - | - | ± 100 | nA |
| • On Characteristics | | | | | | |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}, I_D=-250\mu A$ | -1.0 | -1.4 | 1.9 | V |
| $R_{DS(on)}$ | Drain-Source On-State Resistance | $V_{GS}=-10V, I_D=-4.8A$ | - | 49 | 60 | m Ω |
| | | $V_{GS}=-4.5V, I_D=-2A$ | - | 68 | 85 | |
| • Dynamic Characteristics | | | | | | |
| C_{iss} | Input Capacitance | $V_{DS}=-6V, V_{GS}=0V, f=1\text{MHz}$ | - | 504 | - | PF |
| C_{oss} | Output Capacitance | | - | 68 | - | |
| C_{rss} | Reverse Transfer Capacitance | | - | 56 | - | |
| • Switching Characteristics | | | | | | |
| Q_g | Total Gate Charge | $V_{DS}=-6V, I_D=-2.8A, V_{GS}=-4.5V$ | - | 12 | - | nC |
| Q_{gs} | Gate-Source Charge | | - | 2.3 | - | |
| Q_{gd} | Gate-Drain Charge | | - | 1.4 | - | |
| $t_{d(on)}$ | Turn-on Delay Time | $V_{DD}=-6V, R_L=5W, I_D=-1A, V_{GEN}=-4.5V, R_G=6W$ | - | 8.1 | - | nS |
| t_r | Turn-on Rise Time | | - | 3.3 | - | |
| $t_{d(off)}$ | Turn-off Delay Time | | - | 29.3 | - | |
| t_f | Turn-off Fall Time | | - | 5.6 | - | |
| • Drain-Source Diode Characteristics | | | | | | |
| V_{SD} | Drain-Source Diode Forward | $V_{GS}=0V, I_S=-2A$ | - | - | -1.3 | V |

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



Switching Test Circuit and Switching Waveforms

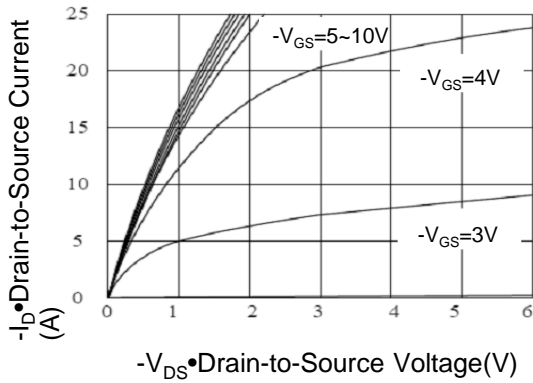


Fig.1 Output Characteristic

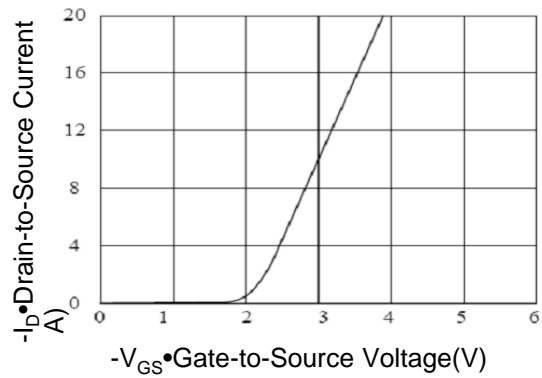


Fig.2 Transfer Characteristic

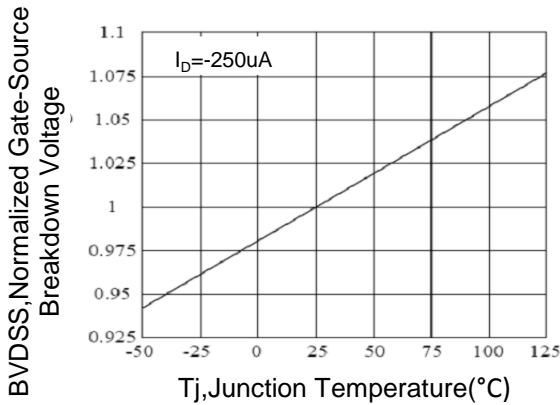


Fig.3 Breakdown Voltage Variation with Temperature

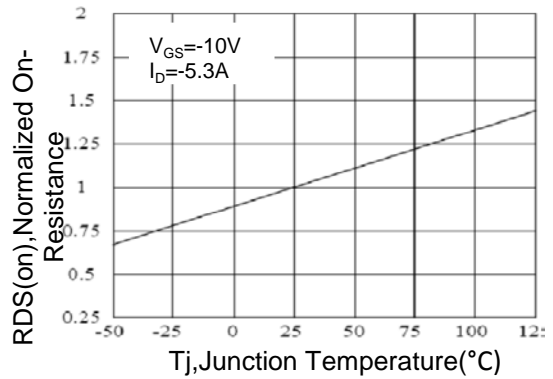


Fig.4 On-Resistance Variation with Temperature

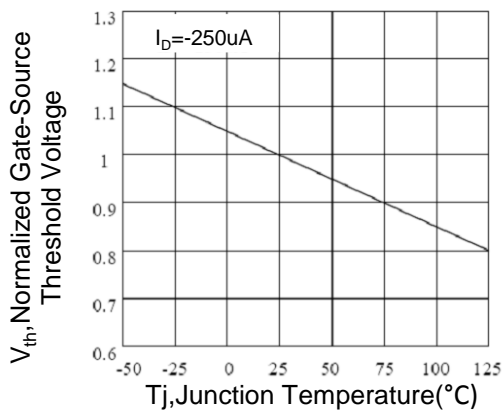


Fig.5 Gate Threshold Variation with Temperature

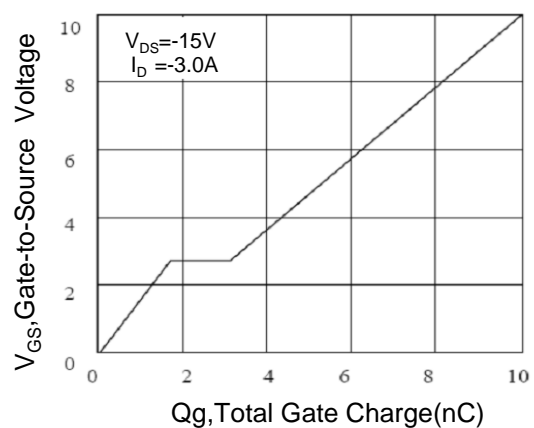
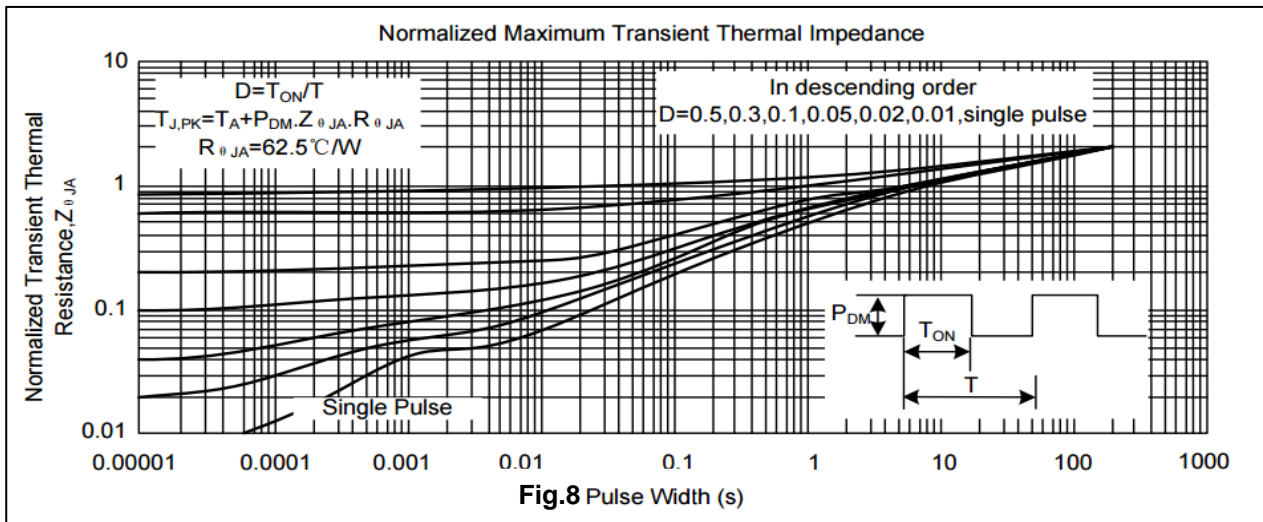
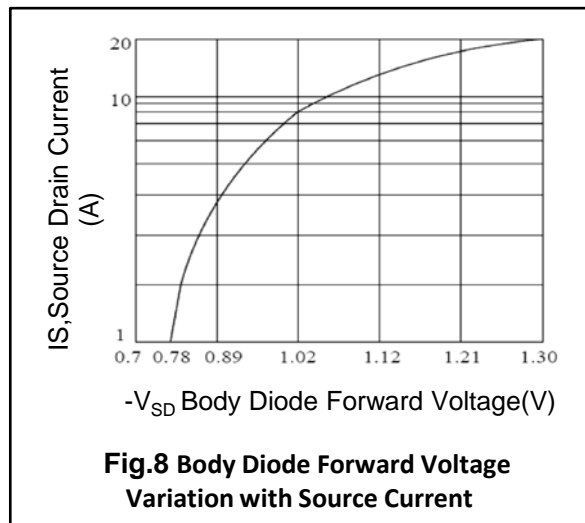
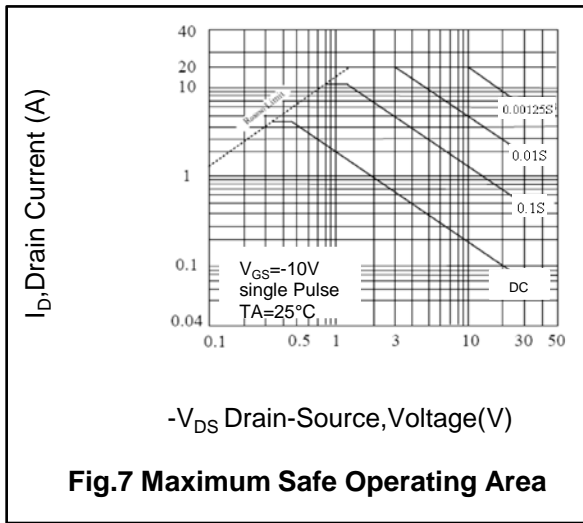
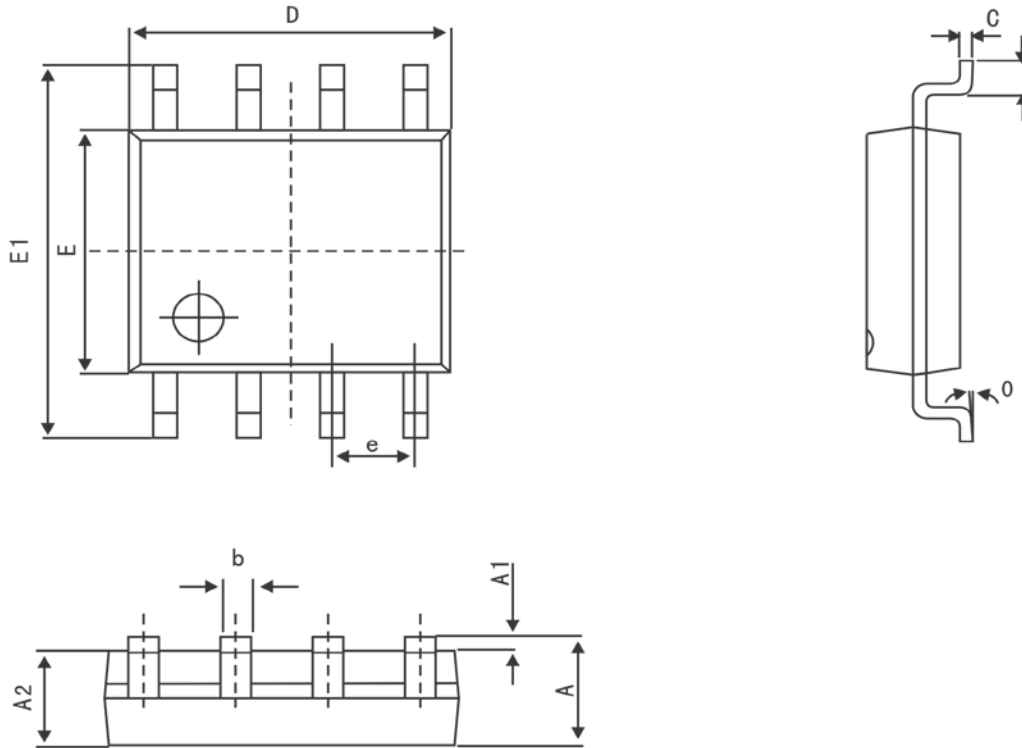


Fig.6 Gate Charge



SO-8 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters (MM) | | Dimensions In Inches (MIL) | |
|--------|--------------------------------|-------|----------------------------|-------|
| | Min | Max | Min | Max |
| A | 1.350 | 1.750 | 0.053 | 0.069 |
| A1 | 0.100 | 0.250 | 0.004 | 0.010 |
| A2 | 1.350 | 1.550 | 0.053 | 0.061 |
| b | 0.330 | 0.510 | 0.013 | 0.020 |
| c | 0.170 | 0.250 | 0.007 | 0.010 |
| D | 4.700 | 5.100 | 0.185 | 0.201 |
| E | 3.800 | 4.000 | 0.150 | 0.157 |
| E1 | 5.800 | 6.200 | 0.228 | 0.244 |
| e | 1.270 (BSC) | | 0.050 (BSC) | |
| L | 0.400 | 1.270 | 0.016 | 0.050 |
| θ | 0° | 8° | 0° | 8° |

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