

GENERAL FEATURES

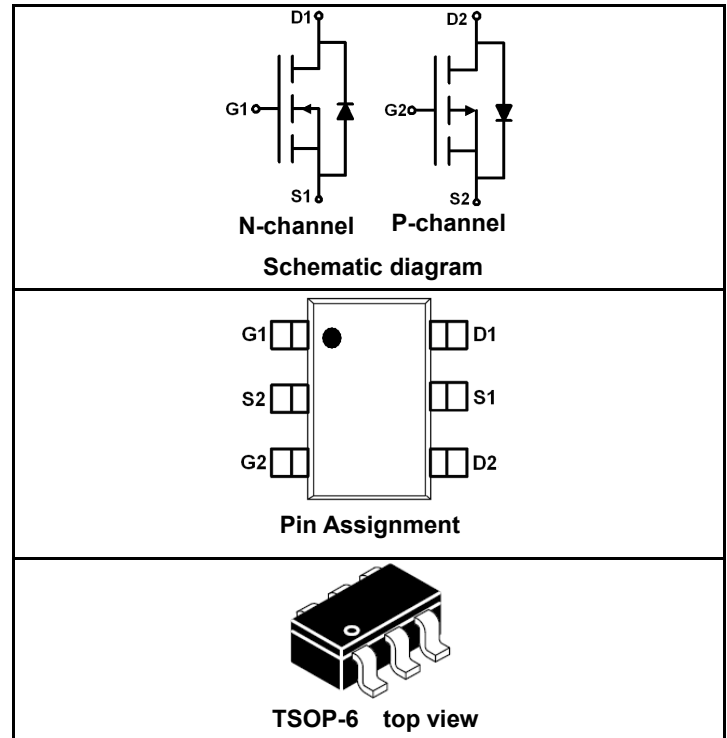
- **N-Channel**

$V_{DS} = 20V, I_D = 2.4A$
 $R_{DS(ON)} < 125m\Omega @ V_{GS}=4.5V$
 $R_{DS(ON)} < 200m\Omega @ V_{GS}=2.5V$

- **P-Channel**

$V_{DS} = -20V, I_D = -2.8A$
 $R_{DS(ON)} < 100m\Omega @ V_{GS}=-4.5V$
 $R_{DS(ON)} < 150m\Omega @ V_{GS}=-2.5V$

- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package



PACKAGE MARKING AND ORDERING INFORMATION

| Device Marking | Device | Device Package | Reel Size | Tape width | Quantity |
|----------------|---------|----------------|-----------|------------|----------|
| 2701 | SSF2701 | TSOP-6 | — | — | — |

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

| Parameter | | Symbol | N-Channel | P-Channel | Unit |
|--|------------------|----------------|------------|------------|------|
| Drain-Source Voltage | | V_{DS} | 20 | -20 | V |
| Gate-Source Voltage | | V_{GS} | ±12 | ±12 | V |
| Continuous Drain Current | $T_A=25^\circ C$ | I_D | 2.4 | -2.8 | A |
| | $T_A=70^\circ C$ | | 1.7 | -2 | |
| Pulsed Drain Current (Note 1) | | I_{DM} | 8 | -10 | A |
| Maximum Power Dissipation | $T_A=25^\circ C$ | P_D | 1.15 | 1.15 | W |
| | $T_A=70^\circ C$ | | 0.6 | 0.6 | |
| Operating Junction and Storage Temperature Range | | T_J, T_{STG} | -55 To 150 | -55 To 150 | °C |

THERMAL CHARACTERISTICS

| | | | | |
|---|-----------------|------|----|------|
| Thermal Resistance, Junction-to-Ambient (Note2) | $R_{\theta JA}$ | N-Ch | 87 | °C/W |
| | | P-Ch | 87 | |

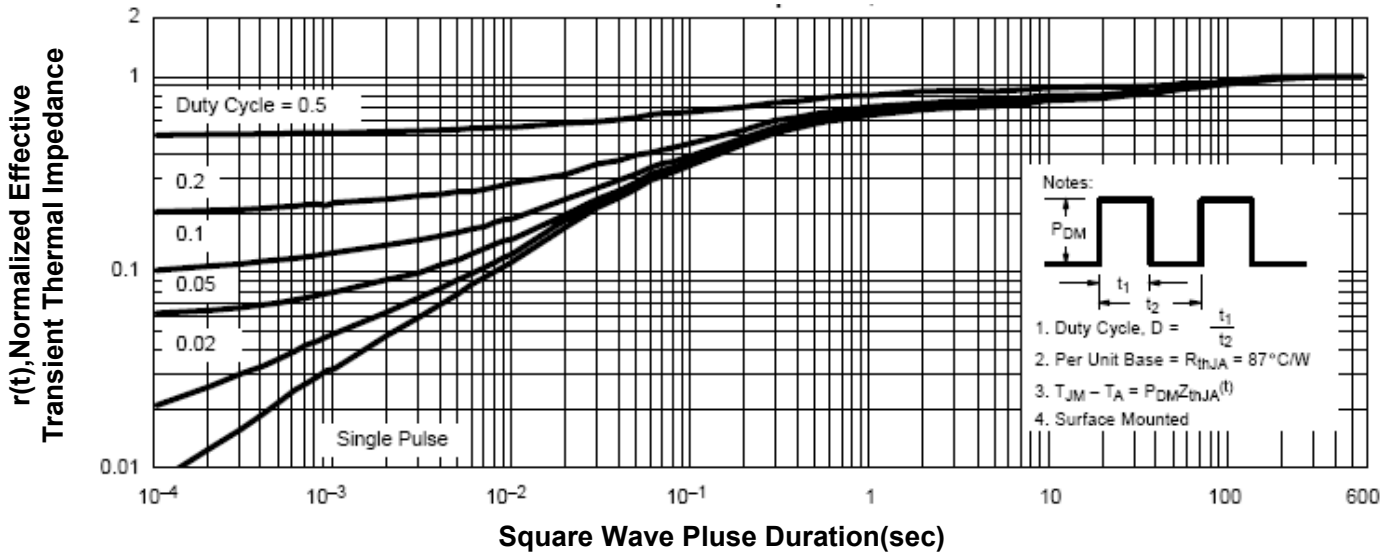
ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | |
|---|---------------------|--|---|------|------|------|-----|
| OFF CHARACTERISTICS | | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | V _{GS} =0V, I _D =250μA | N-Ch | 20 | | V | |
| | | V _{GS} =0V, I _D =-250μA | P-Ch | -20 | | | |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =20V, V _{GS} =0V | N-Ch | | 1 | μA | |
| | | V _{DS} =-20V, V _{GS} =0V | P-Ch | | -1 | | |
| Gate-Body Leakage Current | I _{GSS} | V _{GS} =±12V, V _{DS} =0V | N-Ch | | ±100 | nA | |
| | | | P-Ch | | ±100 | | |
| ON CHARACTERISTICS (Note 3) | | | | | | | |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | N-Ch | 0.6 | | 1 | V |
| | | V _{DS} =V _{GS} , I _D =-250μA | P-Ch | -0.5 | | -1 | |
| Drain-Source On-State Resistance | R _{DS(on)} | V _{GS} =4.5V, I _D =2.4A | N-Ch | | 100 | 125 | mΩ |
| | | V _{GS} =-4.5V, I _D =-2.8A | P-Ch | | 80 | 100 | |
| | | V _{GS} =2.5V, I _D =1.8A | N-Ch | | 160 | 200 | |
| | | V _{GS} =-2.5V, I _D =-2A | P-Ch | | 110 | 150 | |
| Forward Transconductance | g _{FS} | V _{DS} =5V, I _D =2.4A | N-Ch | | 5 | | S |
| | | V _{DS} =-5V, I _D =-2.8A | P-Ch | | 9 | | |
| SWITCHING CHARACTERISTICS (Note 4) | | | | | | | |
| Turn-on Delay Time | t _{d(on)} | N-Ch V _{DD} =10V, R _L =10Ω V _{GEN} =4.5V, R _{GEN} =6Ω P-Ch V _{DD} =-10V, R _L =10Ω V _{GEN} =-4.5V, R _{GEN} =6Ω | N-Ch | | 10 | | nS |
| | | | P-Ch | | 12 | | |
| Turn-on Rise Time | t _r | | N-Ch | | 28 | | nS |
| | | | P-Ch | | 35 | | |
| Turn-Off Delay Time | t _{d(off)} | | N-Ch | | 16 | | nS |
| | | | P-Ch | | 19 | | |
| Turn-Off Fall Time | t _f | | N-Ch | | 8 | | nS |
| | | | P-Ch | | 22 | | |
| Total Gate Charge | Q _g | N-Ch V _{DS} =10V, I _D =2.4A, V _{GS} =4.5V P-Ch V _{DS} =-10V, I _D =-2.8A, V _{GS} =-4.5V | N-Ch | | 3.8 | | nC |
| | | | P-Ch | | 8 | | |
| Gate-Source Charge | Q _{gs} | | N-Ch | | 0.9 | | nC |
| | | | P-Ch | | 1.1 | | |
| Gate-Drain Charge | Q _{gd} | | N-Ch | | 0.8 | | nC |
| | | | P-Ch | | 2.6 | | |
| DRAIN-SOURCE DIODE CHARACTERISTICS | | | | | | | |
| Diode Forward Voltage (Note 3) | V _{SD} | | V _{GS} =0V, I _S =1A | N-Ch | | 0.8 | 1.1 |
| | | V _{GS} =0V, I _S =-1A | P-Ch | | -0.8 | -1.1 | V |

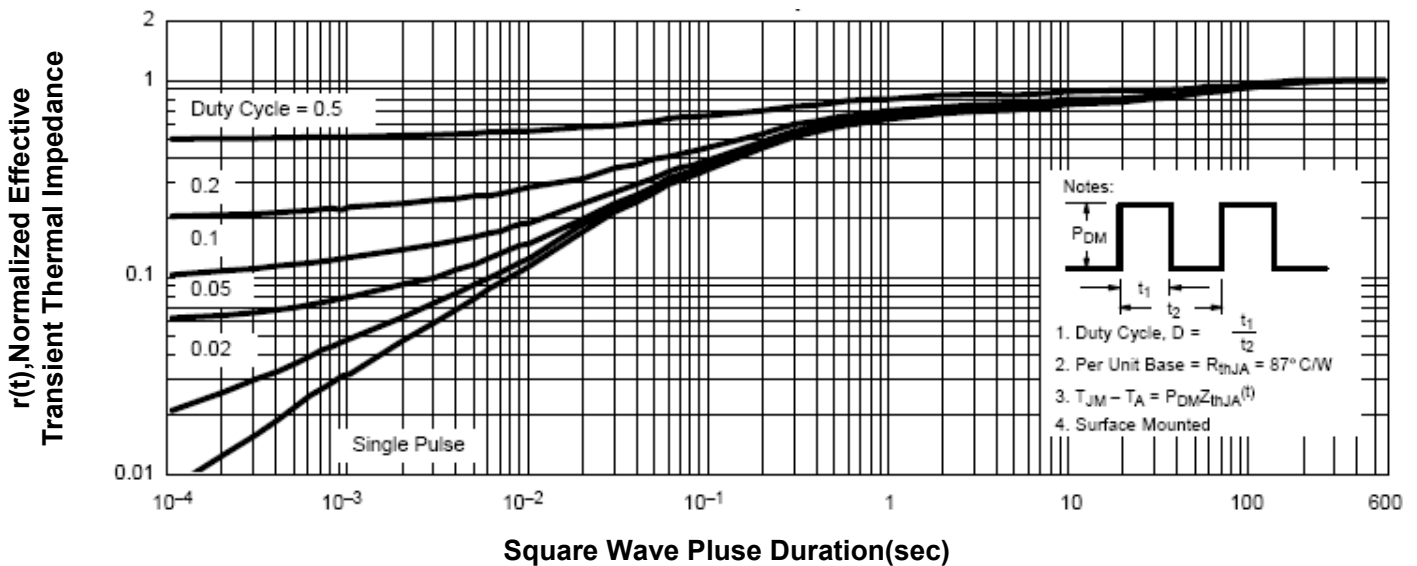
NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

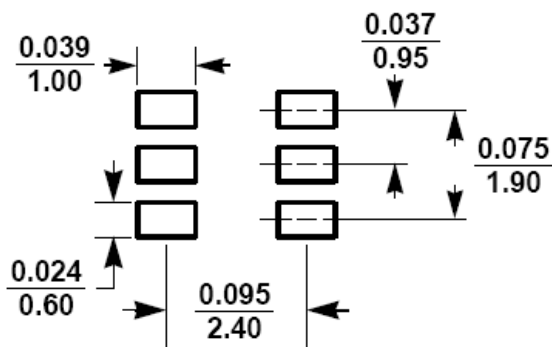
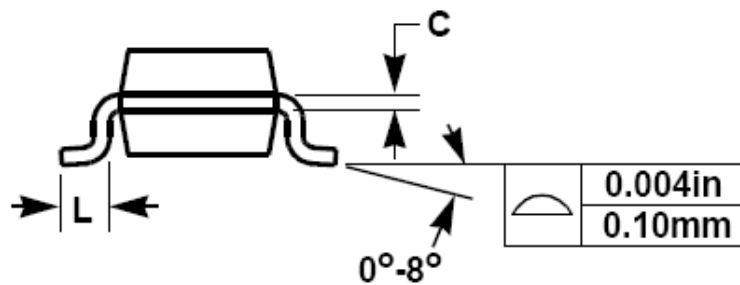
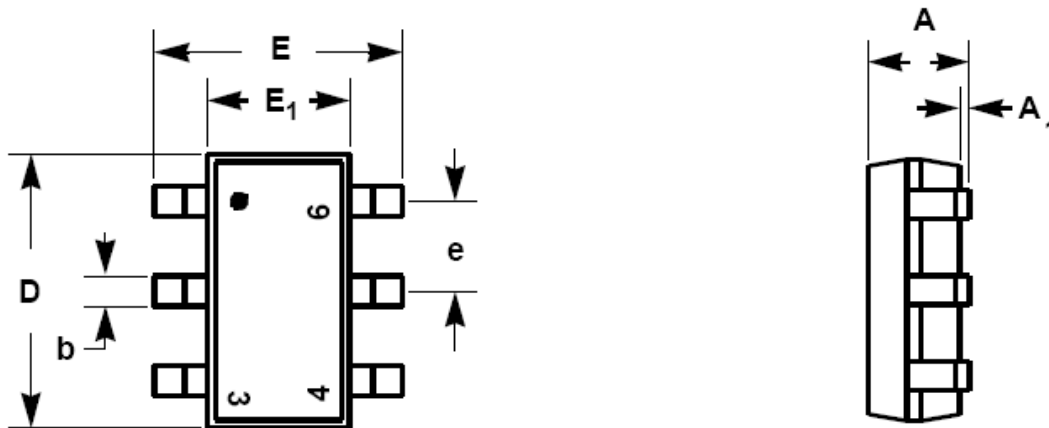
N-Channel THERMAL CHARACTERISTICS



P-Channel THERMAL CHARACTERISTICS



TSOP-6 PACKAGE INFORMATION



| SYMBOL | Millimeters | |
|--------|-------------|------|
| | MIN | MAX |
| A | 0.90 | 1.10 |
| A1 | 0.10 | |
| b | 0.30 | 0.50 |
| c | 0.08 | 0.20 |
| D | 2.70 | 3.10 |
| E | 2.60 | 3.00 |
| E1 | 1.40 | 1.80 |
| e | 0.95 BSC | |
| L | 0.35 | 0.55 |

NOTES:

1. Dimensions are inclusive of plating
2. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 6 mils.
3. Dimension L is measured in gauge plane.
4. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.

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