

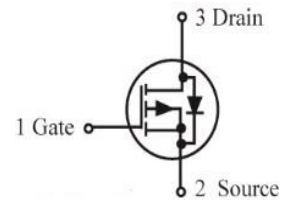
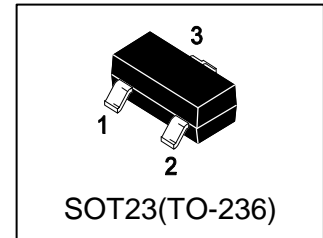
LP2301LT1G

S-LP2301LT1G

20V P-Channel Enhancement-Mode MOSFET

1. FEATURES

- $V_{DS} = -20V$
- $R_{DS(ON)}, V_{GS@-2.5V}, I_{DS@-2.0A} = 150m\Omega$
- $R_{DS(ON)}, V_{GS@-4.5V}, I_{DS@-2.8A} = 100m\Omega$
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.
- Advanced trench process technology
- High density cell design for ultra low on-resistance
- Fully characterized avalanche voltage and current improved shoot-through FOM



2. APPLICATIONS

- Simple drive requirement
- Small package outline
- Surface mount device

3. DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|------------|---------|-----------------|
| LP2301LT1G | 01 | 3000/Tape&Reel |
| LP2301LT3G | 01 | 10000/Tape&Reel |

4. MAXIMUM RATINGS($T_a = 25^\circ C$)

| Parameter | Symbol | Limits | Unit |
|-------------------------------------|-----------|---------|------|
| Drain-Source Voltage | V_{DSS} | -20 | V |
| Gate-to-Source Voltage – Continuous | V_{GS} | ± 8 | V |
| Drain Current | | | A |
| – Continuous $T_A = 25^\circ C$ | I_D | -2.3 | |
| – Pulsed(Note 1) | I_{DM} | -8 | |

5. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|---|-----------------|-----------------|--------------|
| Maximum Power Dissipation | PD | 0.9 | W |
| Thermal Resistance, Junction-to-Ambient(Note 2) | $R_{\theta JA}$ | 140 | $^\circ C/W$ |
| Junction and Storage temperature | T_J, T_{stg} | $-55 \sim +150$ | $^\circ C$ |

1. Repetitive Rating: Pulse width limited by the Maximum junction temperature.
2. 1-in² 2oz Cu PCB board.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|--------|------|------|------|------|
| Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA) | VBRDSS | -20 | - | - | V |
| Zero Gate Voltage Drain Current (VGS = 0, VDS = -9.6 V) | IDSS | - | - | -1 | μA |
| Gate–Body Leakage Current, Forward (VGS = 8 V) | IGSSF | - | - | 100 | nA |
| Gate–Body Leakage Current, Reverse (VGS = - 8 V) | IGSSR | - | - | -100 | nA |

ON CHARACTERISTICS (Note 3)

| | | | | | |
|---|---------|------|----------|------------|----|
| Gate Threshold Voltage (VDS = VGS, ID = -250μA) | VGS(th) | -0.4 | - | -0.9 | V |
| Static Drain–Source On–State Resistance (VGS = -4.5 V, ID = -2.8 A) (VGS = -2.5 V, ID = -2 A) | RDS(on) | - | 69 83 | 100 150 | mΩ |
| Forward Transconductance (VDS = -5V, ID = -4.0A) | gfs | - | 6.5 | - | S |

DYNAMIC CHARACTERISTICS

| | | | | | |
|--|------|---|-------|---|----|
| Input Capacitance (VGS = 0 V, f = 1.0MHz, VDS= -6 V) | Ciss | - | 882.5 | - | pF |
| Output Capacitance (VGS = 0 V, f = 1.0MHz, VDS= -6 V) | Coss | - | 145.5 | - | pF |
| Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz, VDS= -6 V) | Crss | - | 97.26 | - | pF |

SWITCHING CHARACTERISTICS

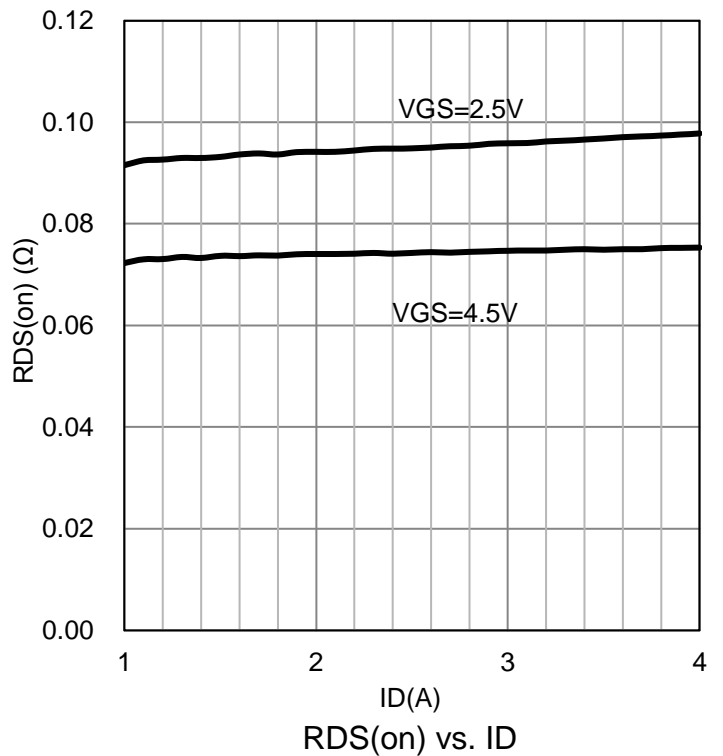
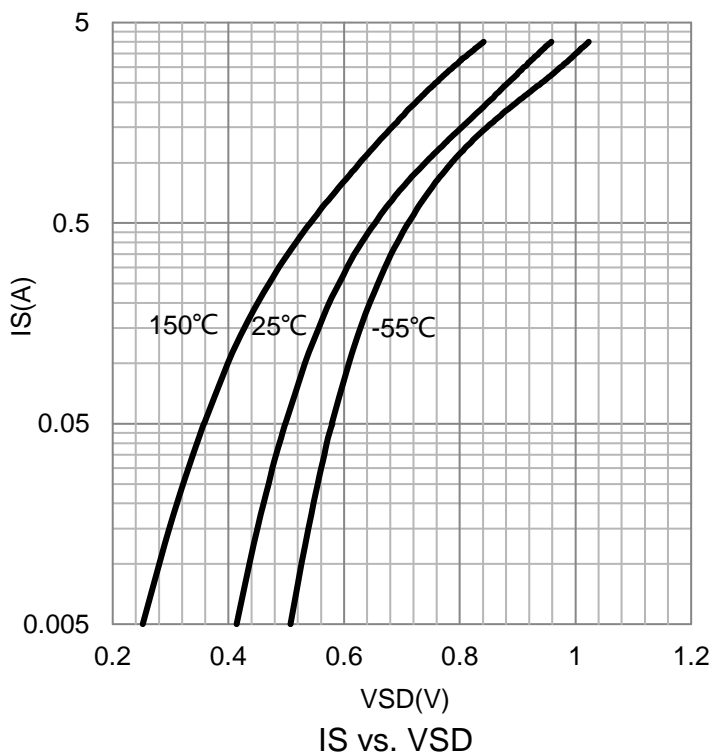
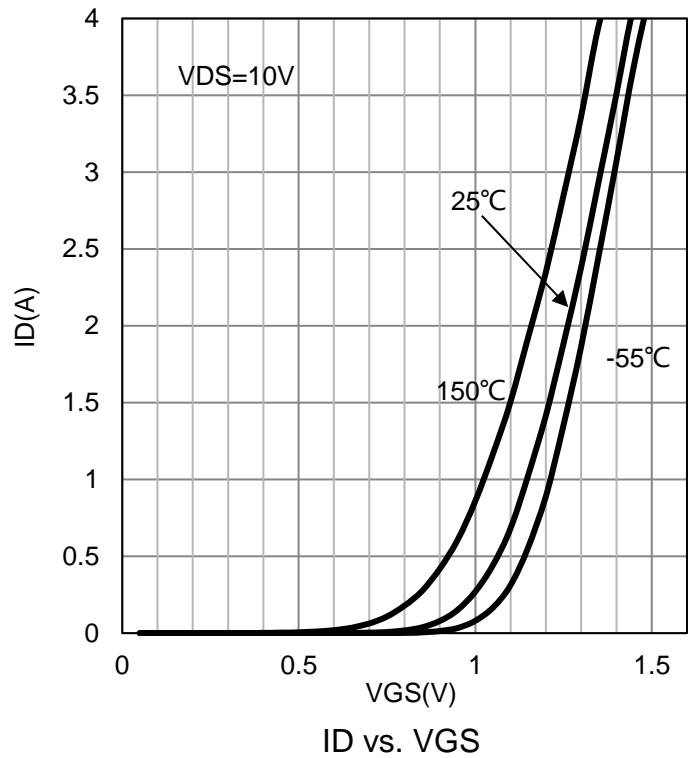
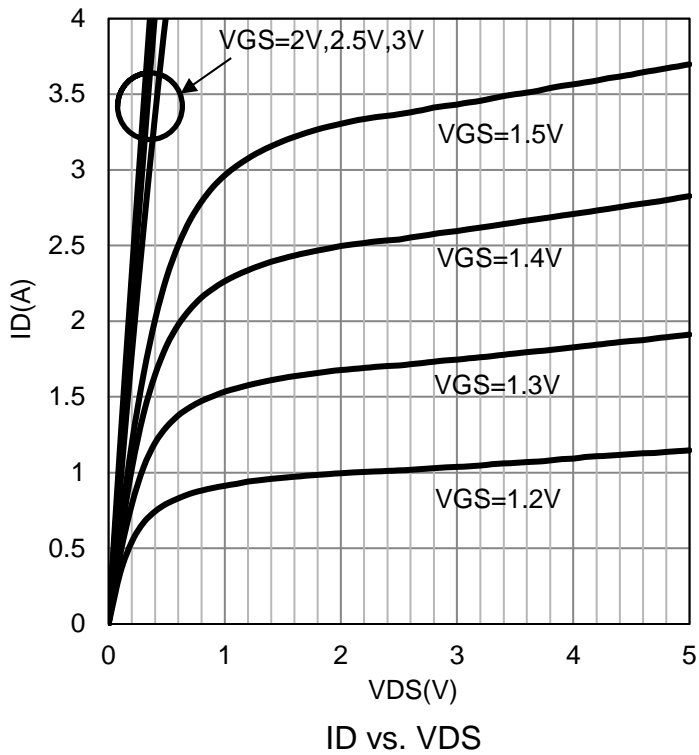
| | | | | | | |
|---------------------|---|---------|---|-------|---|----|
| Turn-On Delay Time | (VDD = -6V, RL = 6Ω ID = -1A, VGEN = -4.5V RG = 6Ω) | td(on) | - | 17.28 | - | ns |
| Rise Time | | tr | - | 3.73 | - | |
| Turn-Off Delay Time | | td(off) | - | 36.05 | - | |
| Fall Time | | tf | - | 6.19 | - | |

SOURCE–DRAIN DIODE CHARACTERISTICS

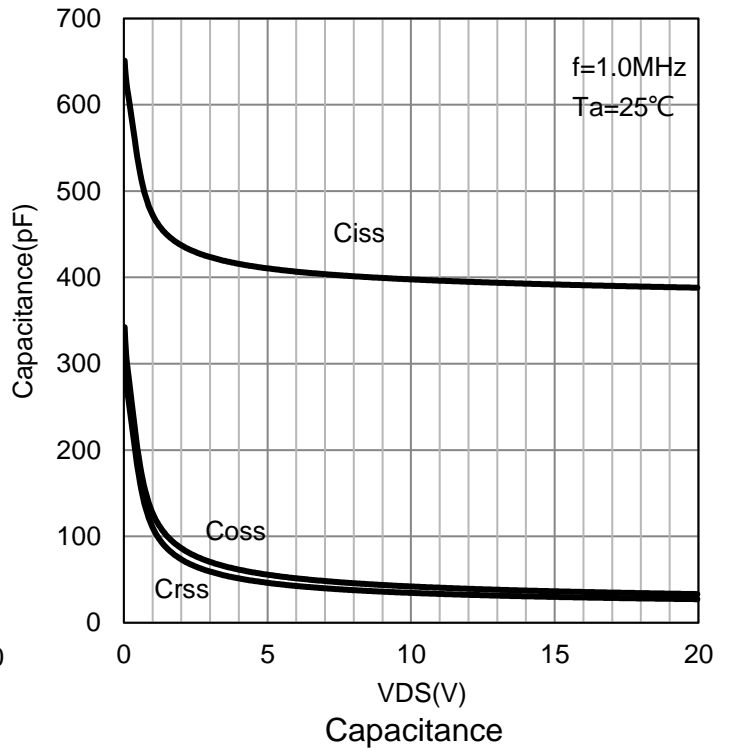
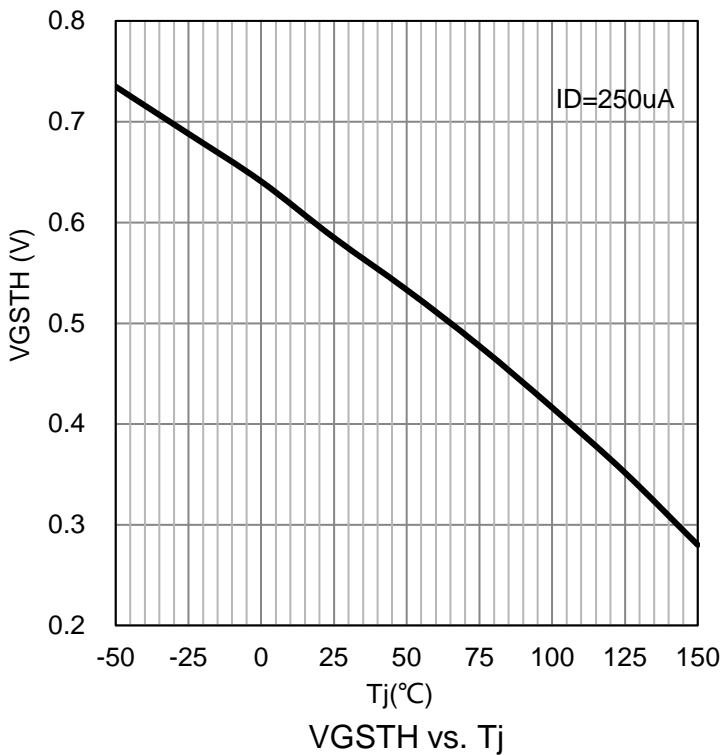
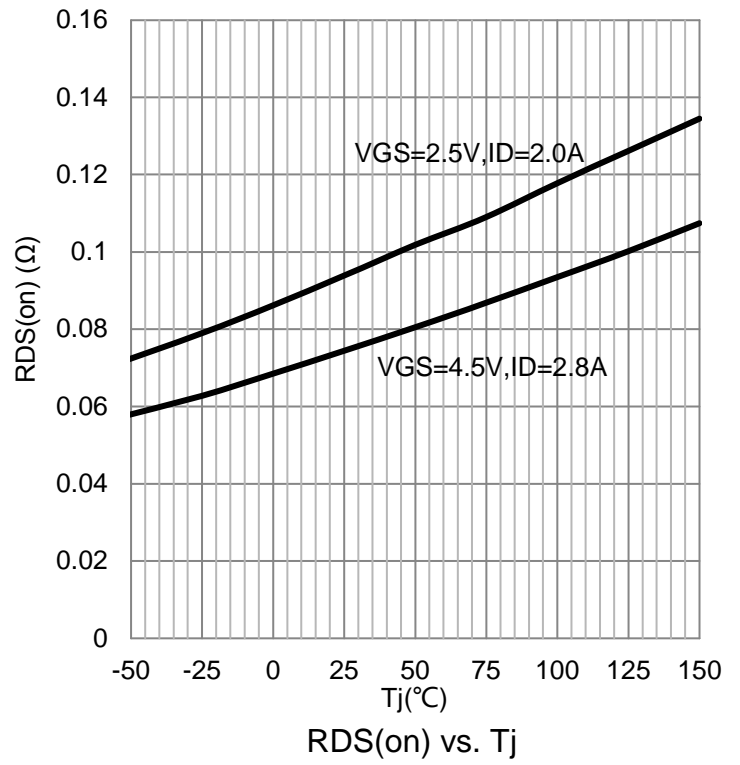
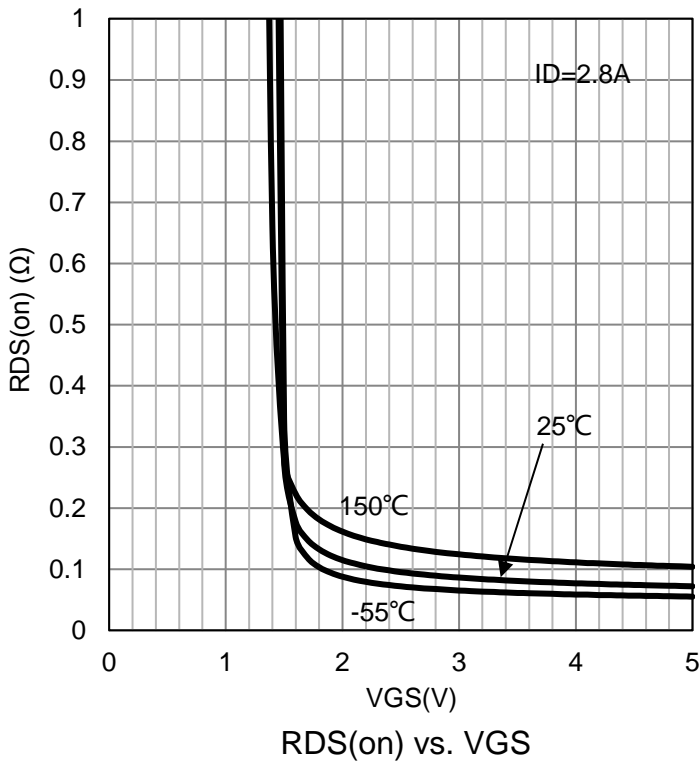
| | | | | | |
|---|-----|---|------|------|---|
| Forward Voltage (VGS = 0 V, ISD = -0.75 A) | VSD | - | -0.8 | -1.2 | V |
|---|-----|---|------|------|---|

3.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

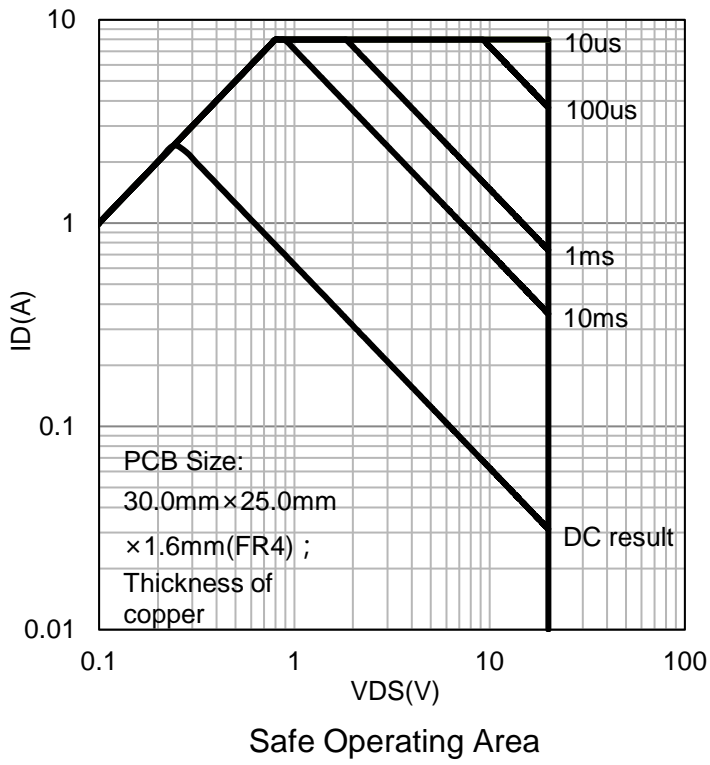
7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



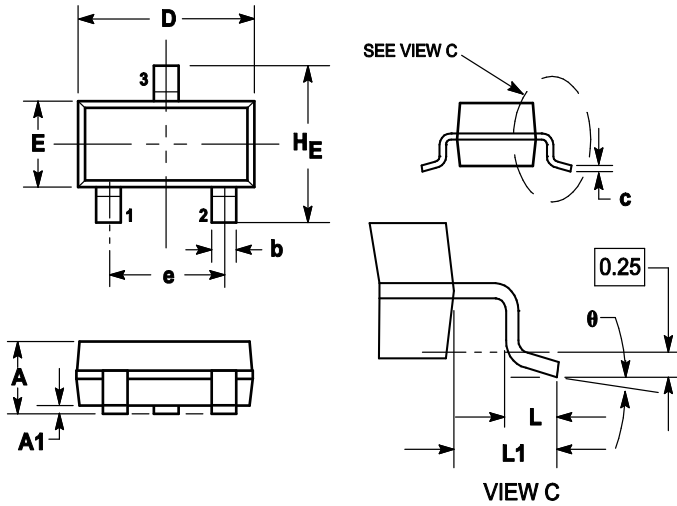
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS

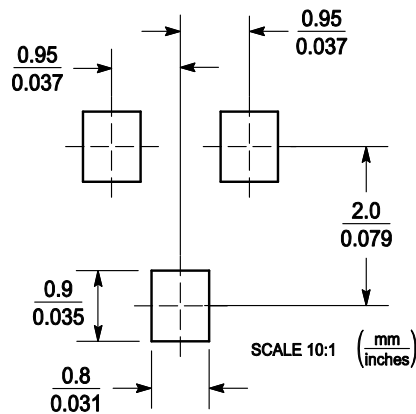
Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.89 | 1 | 1.11 | 0.035 | 0.04 | 0.044 |
| A1 | 0.01 | 0.06 | 0.1 | 0.001 | 0.002 | 0.004 |
| b | 0.37 | 0.44 | 0.5 | 0.015 | 0.018 | 0.02 |
| c | 0.09 | 0.13 | 0.18 | 0.003 | 0.005 | 0.007 |
| D | 2.80 | 2.9 | 3.04 | 0.11 | 0.114 | 0.12 |
| E | 1.20 | 1.3 | 1.4 | 0.047 | 0.051 | 0.055 |
| e | 1.78 | 1.9 | 2.04 | 0.07 | 0.075 | 0.081 |
| L | 0.10 | 0.2 | 0.3 | 0.004 | 0.008 | 0.012 |
| L1 | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| HE | 2.10 | 2.4 | 2.64 | 0.083 | 0.094 | 0.104 |
| θ | 0° | --- | 10° | 0° | --- | 10° |

9. SOLDERING FOOTPRINT



单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)