

LMNP0720DW1T1G

S-LMNP0720DW1T1G

N channel+P Channel MOSFET

1. FEATURES

- 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.
- Low RDS (on)
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate

2. APPLICATION

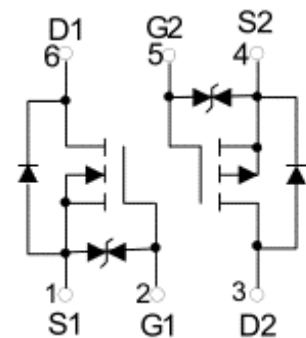
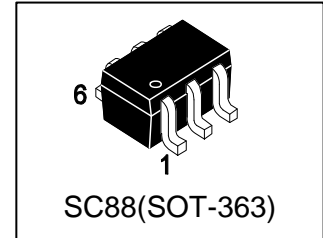
- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

3. DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|----------------|---------|----------------|
| LMNP0720DW1T1G | DW | 3000/Tape&Reel |

4. MAXIMUM RATINGS(Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|--|--------|----------|------|
| N-MOSFET | | | |
| Drain-Source Voltage | VDSS | 20 | V |
| Gate-Source Voltage | VGSS | ±10 | V |
| Drain Current (TA = 25 °C, VGS = 10 V) | ID | 0.9 | A |
| Pulsed Drain Current (TA = 25 °C, VGS = 10 V) | IDM | 3.6 | A |
| Thermal Resistance- Junction to Ambient | RθJA | 250 | °C/W |
| Storage Temperature | Tstg | -55~+150 | °C |
| Junction Temperature | TJ | 150 | °C |
| P-MOSFET | | | |
| Drain-Source Voltage | VDSS | -20 | V |
| Gate-Source Voltage | VGSS | ±10 | V |
| Drain Current (TA = 25 °C, VGS = -4.5 V) | ID | -0.67 | A |
| Pulsed Drain Current (TA = 25 °C, VGS = -4.5 V) | IDM | -2.6 | A |
| Thermal Resistance- Junction to Ambient | RθJA | 150 | °C/W |
| Storage Temperature | Tstg | -55~+150 | °C |
| Junction Temperature | TJ | 150 | °C |



5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

N-MOSFET

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---------|---------------------------------|-------------------------|------|
| Static Characteristics | | | | | |
| Drain-Source Breakdown Voltage (VGS = 0 V, IDS = 250 μA) | BVDSS | 20 | - | - | V |
| Gate Threshold Voltage (VDS = VGS, IDS = 250 μA) | VGS(th) | 0.3 | 0.65 | 1 | V |
| Drain Leakage Current (VDS = 16 V, VGS = 0V) (VDS = 16 V, VGS = 0V, TJ = 85 °C) | IDSS | - | - | 1 30 | μA |
| Gate Leakage Current (VGS = ±8 V, VDS = 0 V) | IGSS | - | - | ±10 | μA |
| On-State Resistance (VGS = 4.5 V, IDS = 0.5 A) (VGS = 2.5 V, IDS = 0.2 A) (VGS = 1.8 V, IDS = 0.1 A) (VGS = 1.5 V, IDS = 0.05 A) (VGS = 1.2 V, IDS = 0.02 A) | RDS(ON) | - | 0.25 0.35 0.4 0.5 1 | 0.4 0.65 0.8 - | Ω |
| Diode Characteristics | | | | | |
| Diode Forward Voltage (ISD = 0.5 A, VGS = 0 V) | VSD | - | 0.7 | 1.3 | V |
| Dynamic | | | | | |
| Input Capacitance | (VGS = 0 V, VDS = 10 V, f=1MHz) | Ciss | - | 67 | - |
| Output Capacitance | | Coss | - | 19 | - |
| Reverse Transfer Capacitance | | Crss | - | 6 | - |
| Turn-On Delay Time | (VDS = 10 V, VGEN= 4.5 V, RG = 10 Ω, RL = 66 Ω, IDS = 0.15 A) | td(on) | - | 2.8 | - |
| Rise Time | | tr | - | 20 | - |
| Turn-Off Delay Time | | td(off) | - | 23 | - |
| Fall Time | | tf | - | 23 | - |
| Total Gate Charge | (VGS = 4.5 V, VDS = 10 V, IDS = 0.5 A) | Qg | - | 1.4 | - |
| Gate-Source Charge | | Qgs | - | 0.22 | - |
| Gate-Drain Charge | | Qgd | - | 0.21 | - |

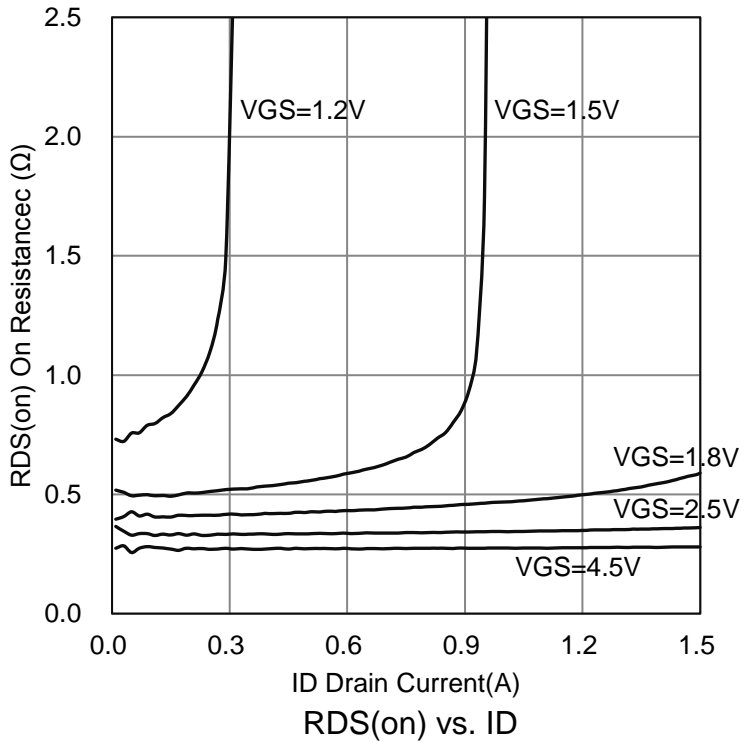
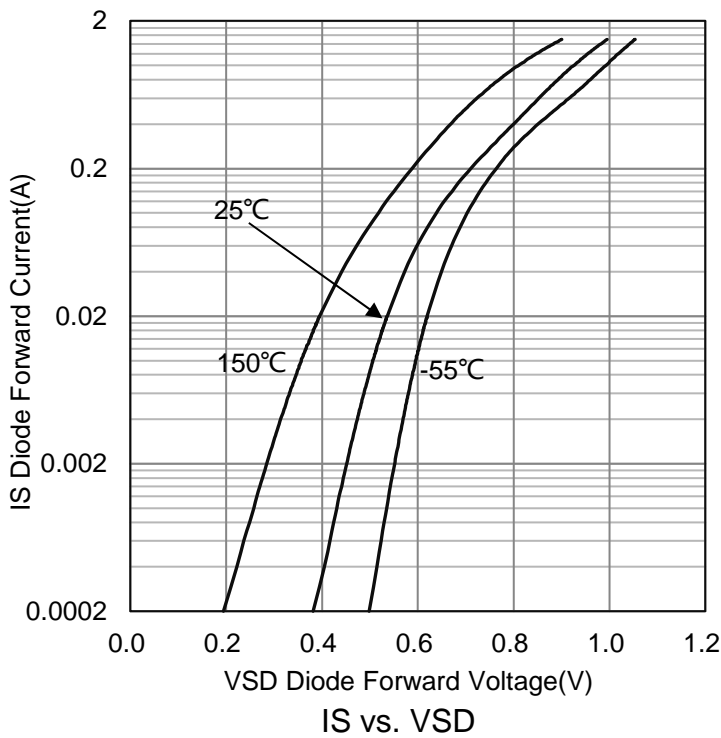
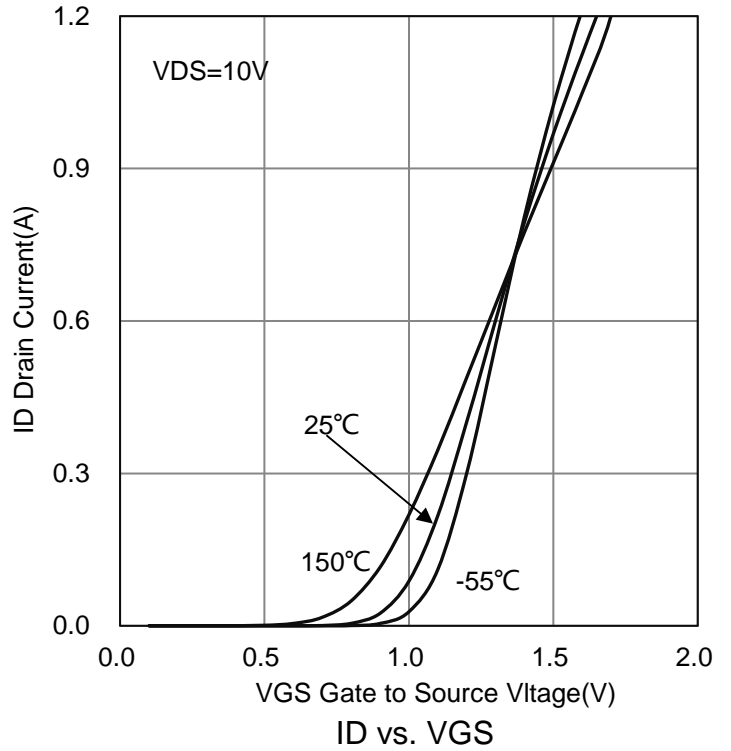
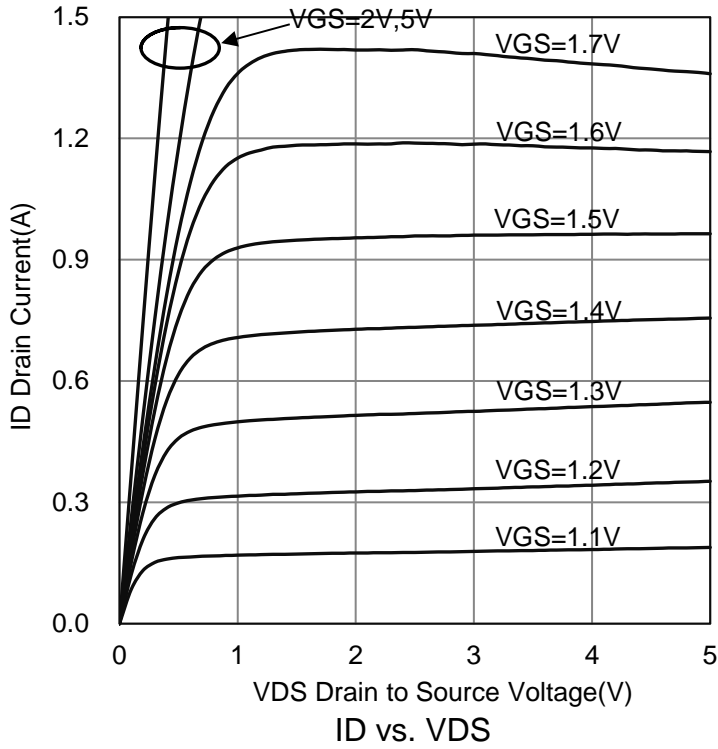
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)(Con.)

P-MOSFET

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---------|---------------------------------|------------------------|------|
| Static Characteristics | | | | | |
| Drain-Source Breakdown Voltage (VGS = 0 V, IDS = -250 μA) | BVDSS | -20 | - | - | V |
| Gate Threshold Voltage (VDS = VGS, IDS = -250 μA) | VGS(th) | -0.3 | -0.65 | -1 | V |
| Drain Leakage Current (VDS = -16 V, VGS = 0V) (VDS = -16 V, VGS = 0V, TJ = 85 °C) | IDSS | - | - | -1 -30 | μA |
| Gate Leakage Current (VGS = ±8 V, VDS = 0 V) | IGSS | - | - | ±10 | μA |
| On-State Resistance (VGS = -4.5 V, IDS = -0.5 A) (VGS = -2.5 V, IDS = -0.2 A) (VGS = -1.8 V, IDS = -0.1 A) (VGS = -1.5 V, IDS = -0.04 A) (VGS = -1.2 V, IDS = -0.01 A) | RDS(ON) | - | 0.85 1.05 1.2 1.5 2 | 1.2 1.5 2.2 - | Ω |
| Diode Characteristics | | | | | |
| Diode Forward Voltage (ISD = 0.5 A, VGS = 0 V) | VSD | - | 0.7 | 1.3 | V |
| Dynamic | | | | | |
| Input Capacitance | (VGS = 0 V, VDS = -10 V, f=1MHz) | Ciss | - | 87 | - |
| Output Capacitance | | Coss | - | 15 | - |
| Reverse Transfer Capacitance | | Crss | - | 8.2 | - |
| Turn-On Delay Time | (VDS = -30 V, VGEN= -10 V, RG =25 Ω, RL= 60 Ω, IDS = -0.67 A) | td(on) | - | 5.6 | - |
| Rise Time | | tr | - | 5.3 | - |
| Turn-Off Delay Time | | td(off) | - | 30 | - |
| Fall Time | | tf | - | 21 | - |
| Total Gate Charge | (VGS = -4.5 V, VDS = -10 V, IDS = -0.67A) | Qg | - | 1.8 | - |
| Gate-Source Charge | | Qgs | - | 0.82 | - |
| Gate-Drain Charge | | Qgd | - | 0.59 | - |

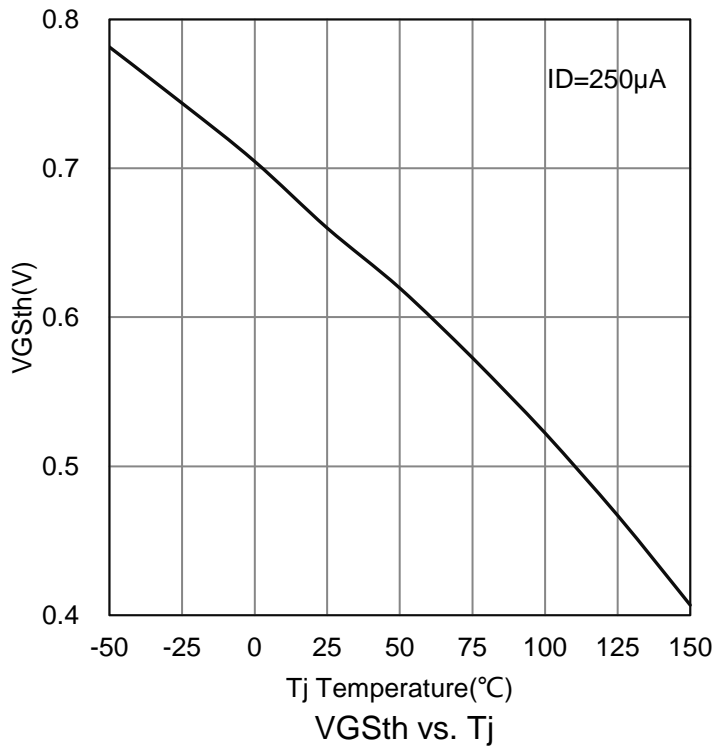
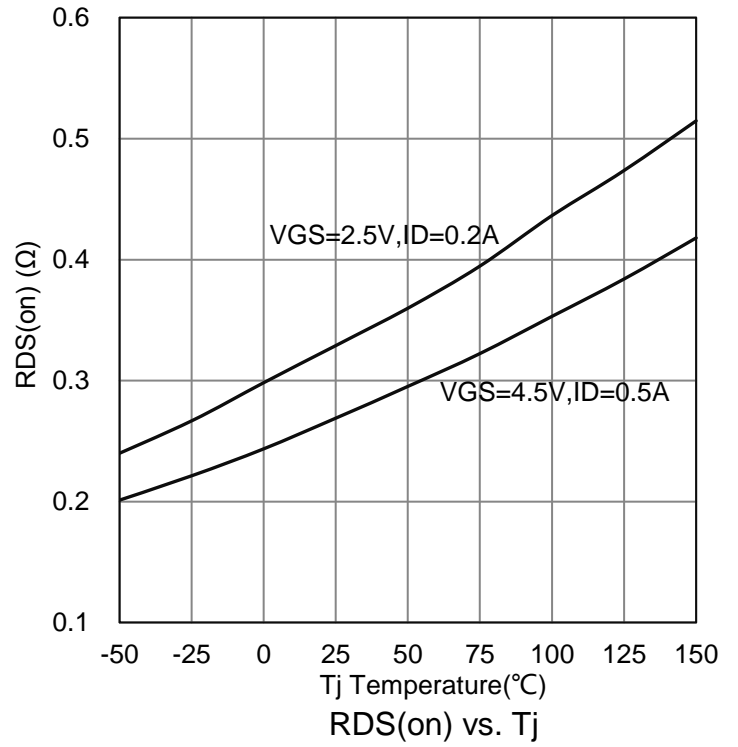
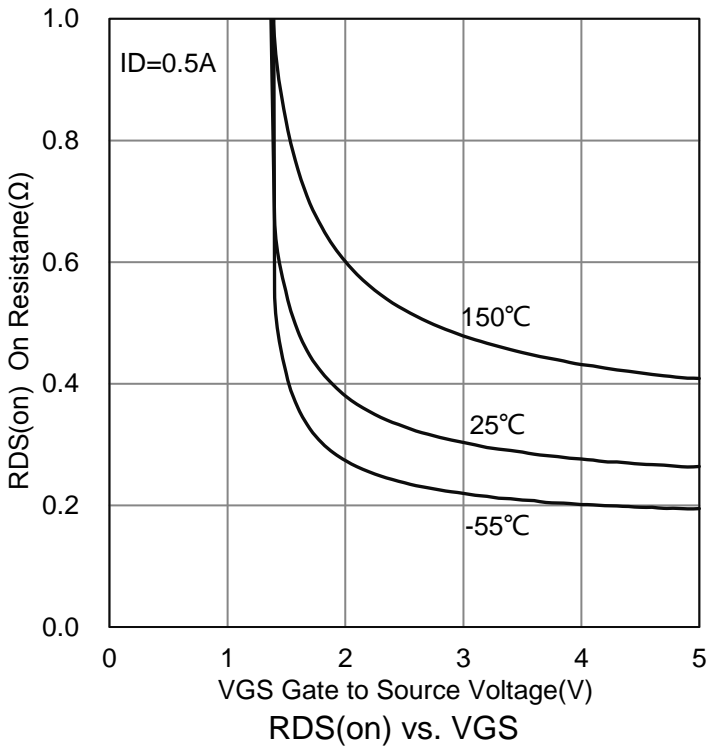
6.ELECTRICAL CHARACTERISTICS CURVES

N-MOSFET



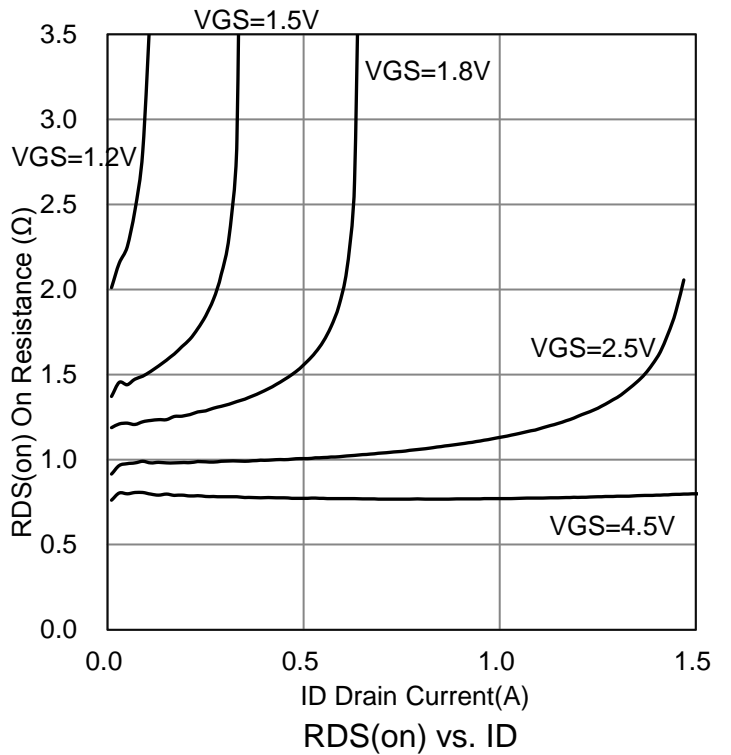
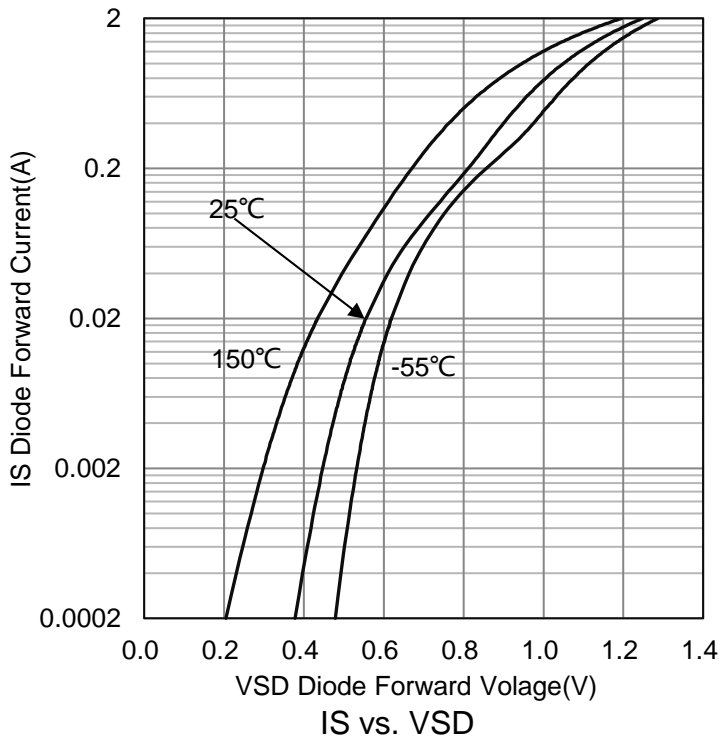
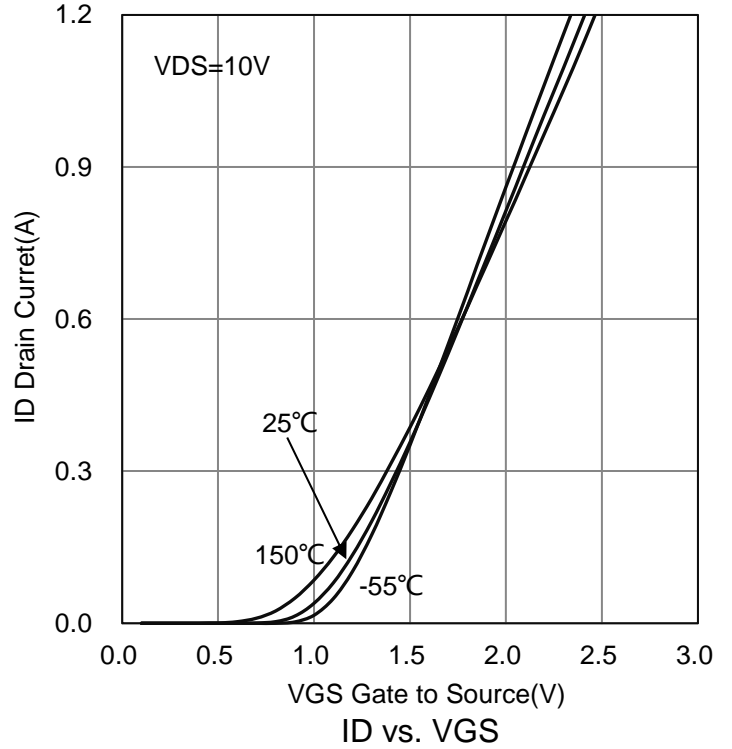
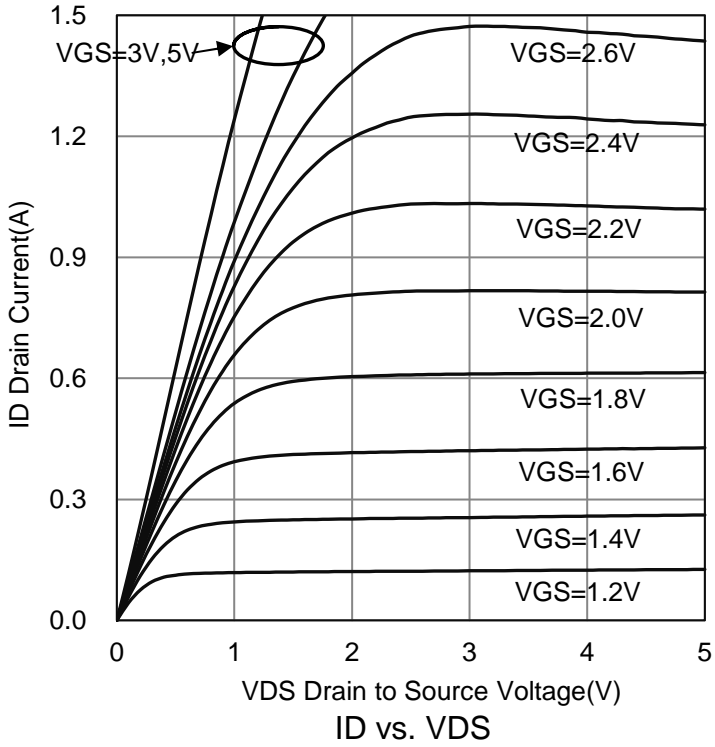
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

N-MOSFET



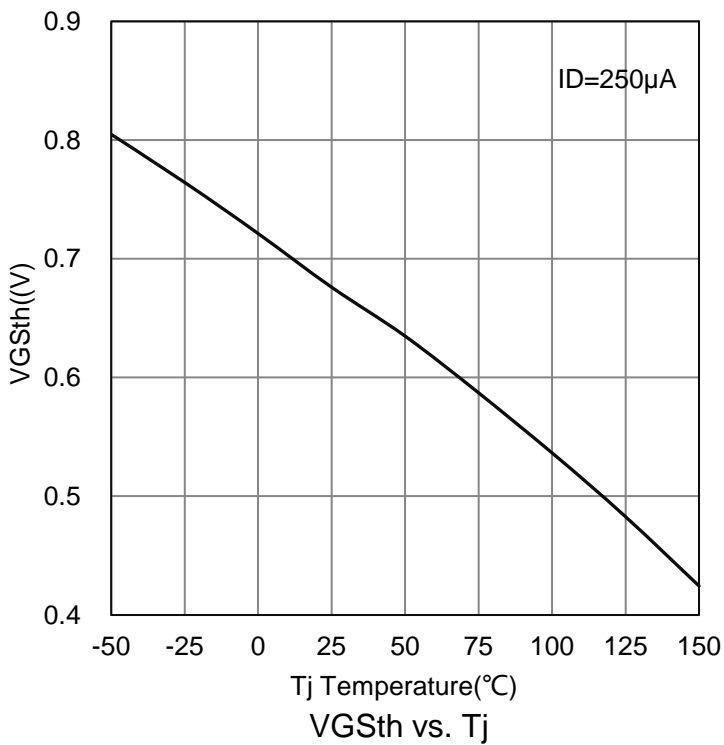
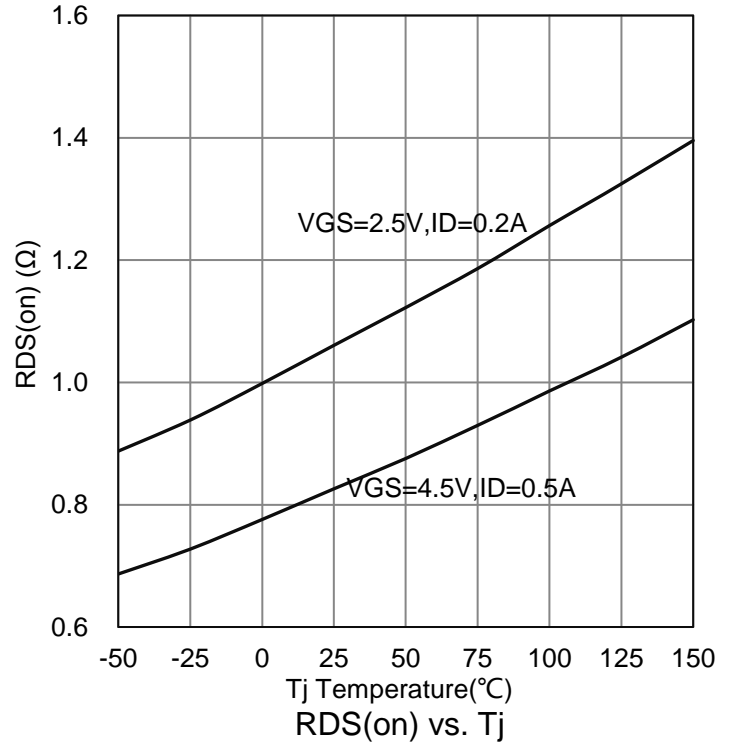
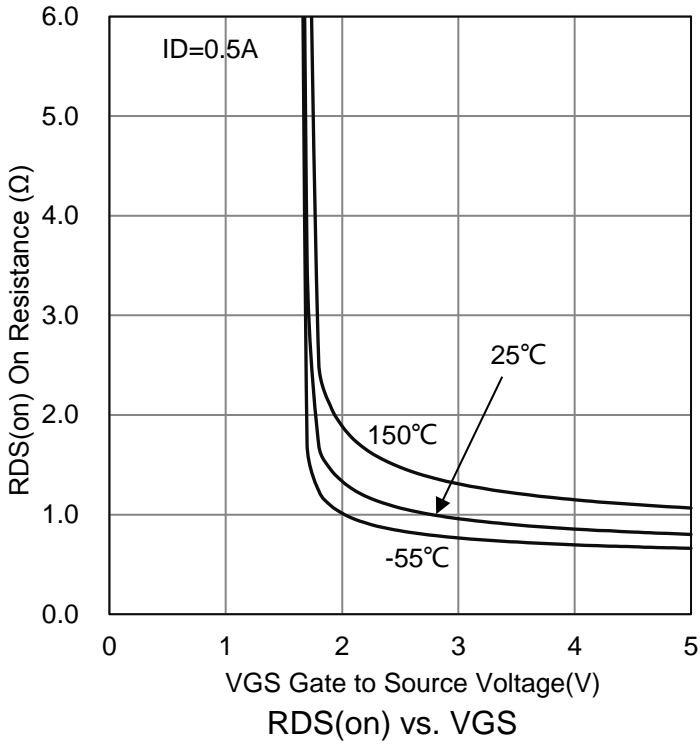
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

P-MOSFET



6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

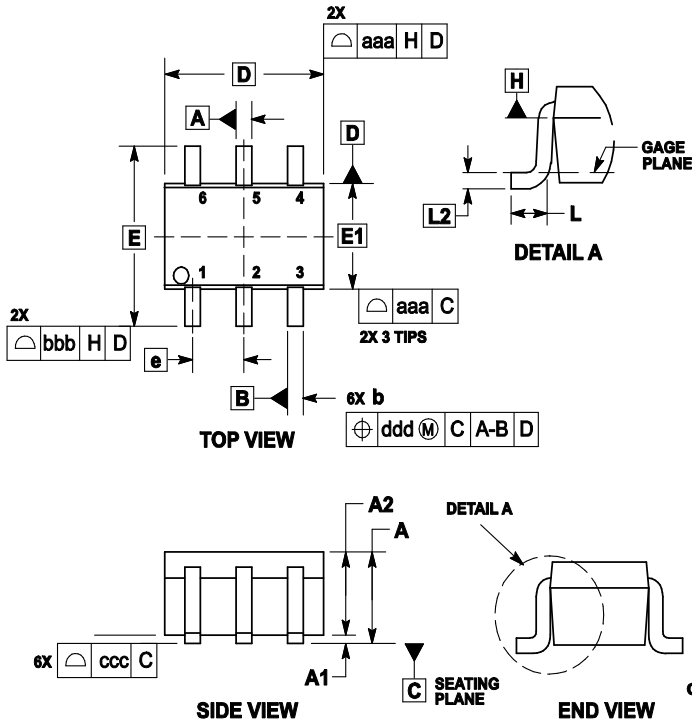
P-MOSFET



7.OUTLINE AND DIMENSIONS

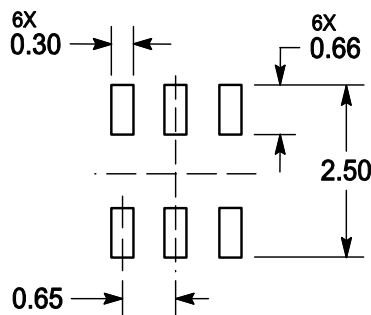
Notes:

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 | --- | --- | 1.10 | --- | --- | 0.043 |
| A1 | 0.00 | --- | 0.10 | 0 | --- | 0.004 |
| A2 | 0.70 | 0.90 | 1.00 | 0.027 | 0.035 | 0.039 |
| b | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.01 |
| C | 0.08 | 0.15 | 0.22 | 0.003 | 0.006 | 0.009 |
| D | 1.80 | 2.00 | 2.20 | 0.07 | 0.078 | 0.086 |
| E | 2.00 | 2.10 | 2.20 | 0.078 | 0.082 | 0.086 |
| E1 | 1.15 | 1.25 | 1.35 | 0.045 | 0.049 | 0.053 |
| e | 0.65 BSC | | | 0.026 BSC | | |
| L | 0.26 | 0.36 | 0.46 | 0.010 | 0.014 | 0.018 |
| L2 | 0.15 BSC | | | 0.006 BSC | | |
| aaa | 0.15 | | | 0.01 | | |
| bbb | 0.30 | | | 0.01 | | |
| ccc | 0.10 | | | 0.00 | | |
| ddd | 0.10 | | | 0.00 | | |

8.SOLDERING FOOTPRINT



DISCLAIMER

- Before you use our Products, you are requested to carefully read this document and fully understand its contents. LRC shall not be in any way responsible or liable for failure, malfunction or accident arising from the use of any LRC's Products against warning, caution or note contained in this document.
- All information contained in this document is current as of the issuing date and subject to change without any prior notice. Before purchasing or using LRC's Products, please confirm the latest information with a LRC sales representative.

单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)