

L2N7002KTT1G

S-L2N7002KTT1G

Small Signal MOSFET
380 mAmps, 60 Volts N-Channel

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.
- ESD Protected

2. DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|--------------|---------|-----------------|
| L2N7002KTT1G | RK | 3000/Tape&Reel |
| L2N7002KTT3G | RK | 10000/Tape&Reel |

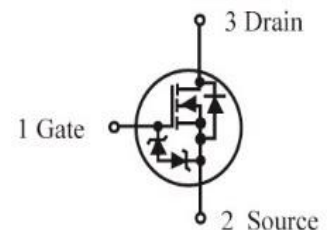
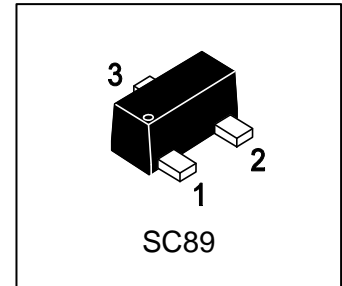
3. MAXIMUM RATINGS(Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|--------------------------------|--------|--------|------|
| Drain-Source Voltage | VDSS | 60 | V |
| Gate-Source Voltage | VGS | ±20 | V |
| Drain Current | ID | | mA |
| – Steady State TA = 25°C | | 320 | |
| TA = 85°C | | 230 | |
| – t<5s TA = 25°C | | 380 | |
| TA = 85°C | | 270 | |
| Pulsed Drain Current (tp=10µs) | IDM | 1.5 | A |
| Source Current (Body Diode) | IS | 300 | mA |

4. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|--|---------|----------|------|
| Total Device Dissipation(Note 1) | PD | | mW |
| – Steady State | | 300 | |
| – t<5s | | 420 | |
| Junction-to-Ambient(Note 1) | RθJA | | °C/W |
| – Steady State | | 417 | |
| – t<5s | | 300 | |
| Lead Temperature for Soldering Purposes (1/8 " from case for 10 s) | TL | 260 | °C |
| Junction and Storage temperature | TJ,Tstg | -55~+150 | °C |
| Gate-Source ESD Rating(HBM, Method 3015) | ESD | 2000 | V |

1. FR-5 = 1.0×0.75×0.062 in.



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

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|-----------|------------|------|------|-------|
| Drain-Source Breakdown Voltage (VGS = 0, ID = 250μA) | VBRDSS | 60 | - | - | V |
| Drain-to-Source Breakdown Voltage Temperature Coefficient | VBRDSS/TJ | - | 71 | - | mV/°C |
| Zero Gate Voltage Drain Current (VGS = 0, VDS = 60 V) | IDSS | TJ = 25°C | - | 1.0 | μA |
| | | TJ = 125°C | - | 500 | |
| (VGS = 0, VDS = 50 V) | | - | - | 100 | nA |
| Gate-Body Leakage Current, Forward (VGS = 20 V) | IGSSF | - | - | 10 | μA |
| Gate-Body Leakage Current, Reverse (VGS = - 20 V) | IGSSR | - | - | -10 | μA |

ON CHARACTERISTICS (Note 2)

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|------------|---------------------------|------|------|-------|
| Gate Threshold Voltage (VDS = VGS, ID = 250μA) | VGS(th) | 1.0 | 1.5 | 2 | V |
| Negative Threshold Temperature Coefficient | VGS(TH)/TJ | - | 4 | - | mV/°C |
| Static Drain-Source On-State Resistance (VGS = 10 V, ID = 500 mA) | RDS(on) | - | - | 2.3 | Ohm |
| | | (VGS = 5.0 V, ID = 50 mA) | - | - | 2.7 |
| Forward Transconductance (VDS = 5.0 V, ID = 200 mA) | gfs | 80 | - | - | mS |

DYNAMIC CHARACTERISTICS

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|--------|------|------|------|------|
| Total Gate Charge (VDS = 10V, VGS = 4.5V, ID = 0.5A) | Qg | - | 360 | - | pC |
| Gate-Source Charge (VDS = 10V, VGS = 4.5V, ID = 0.5A) | Qgs | - | 90 | - | |
| Gate-Drain Charge (VDS = 10V, VGS = 4.5V, ID = 0.5A) | Qgd | - | 210 | - | |
| Input Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz) | Ciss | - | 34 | - | pF |
| Output Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz) | Coss | - | 3 | - | pF |
| Reverse Transfer Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz) | Crss | - | 2.2 | - | pF |

SWITCHING CHARACTERISTICS

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|---------------------|---------|------|------|------|------|
| Turn-On Delay Time | td(on) | - | 3.8 | - | ns |
| Rise Time | tr | - | 3.4 | - | |
| Turn-Off Delay Time | td(off) | - | 19 | - | |
| Fall Time | tf | - | 12 | - | |

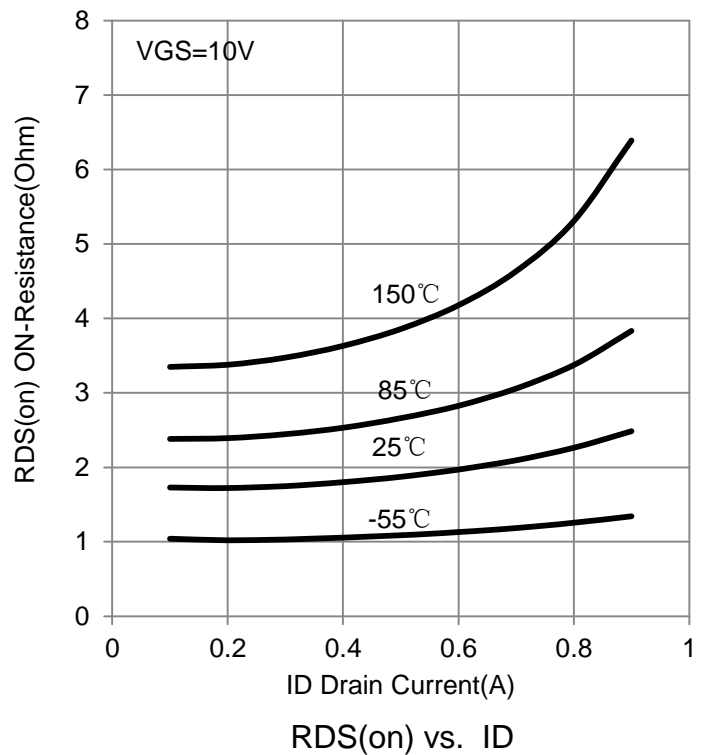
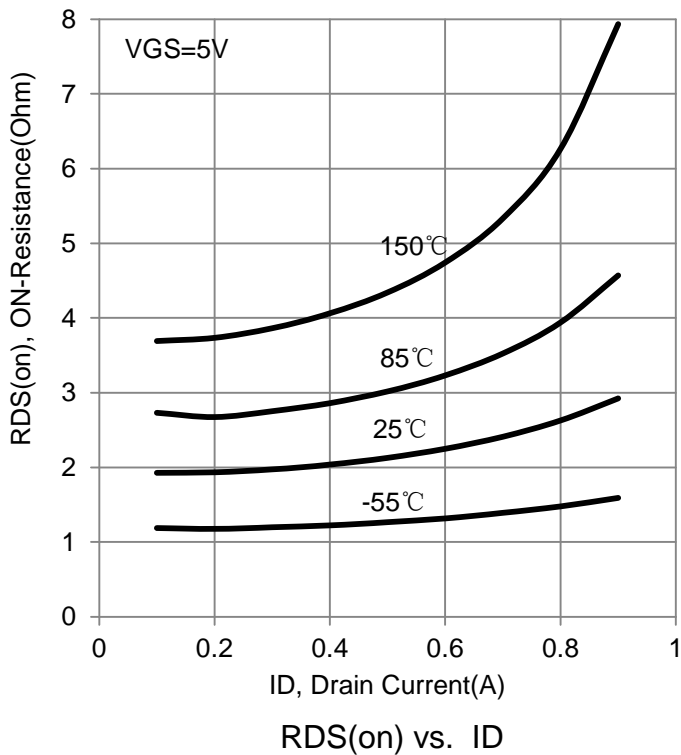
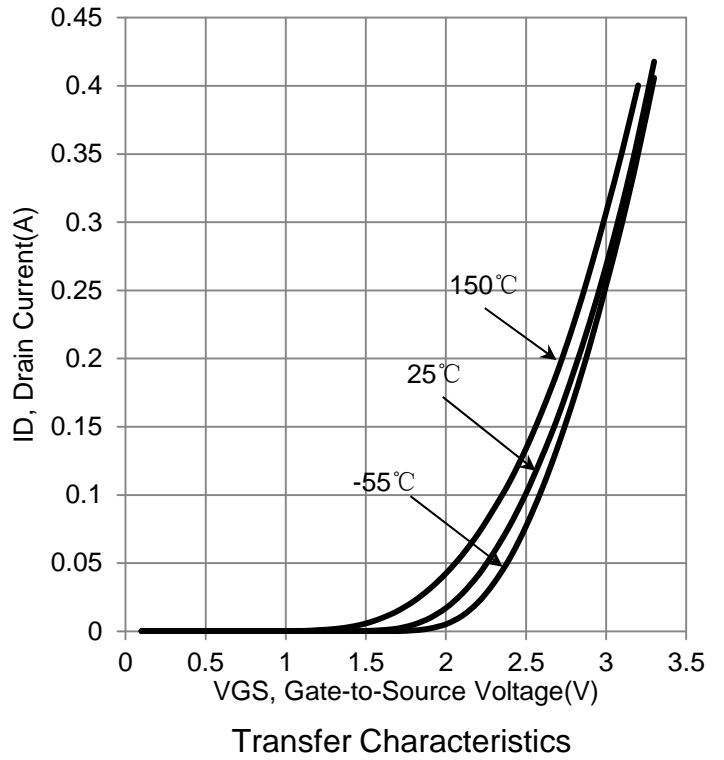
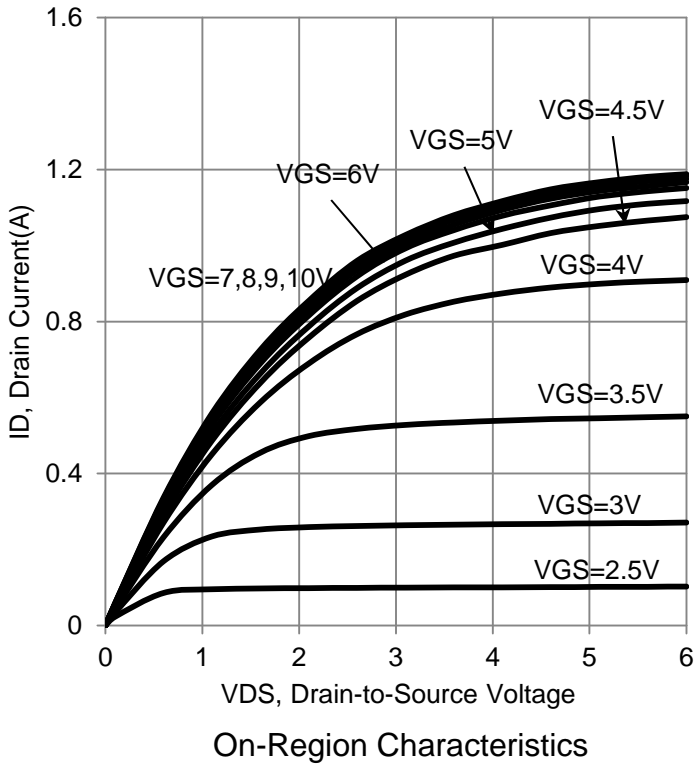
VDS = 10 V, VGEN = 10 V,
ID = 500 mA

BODY-DRAIN DIODE RATINGS

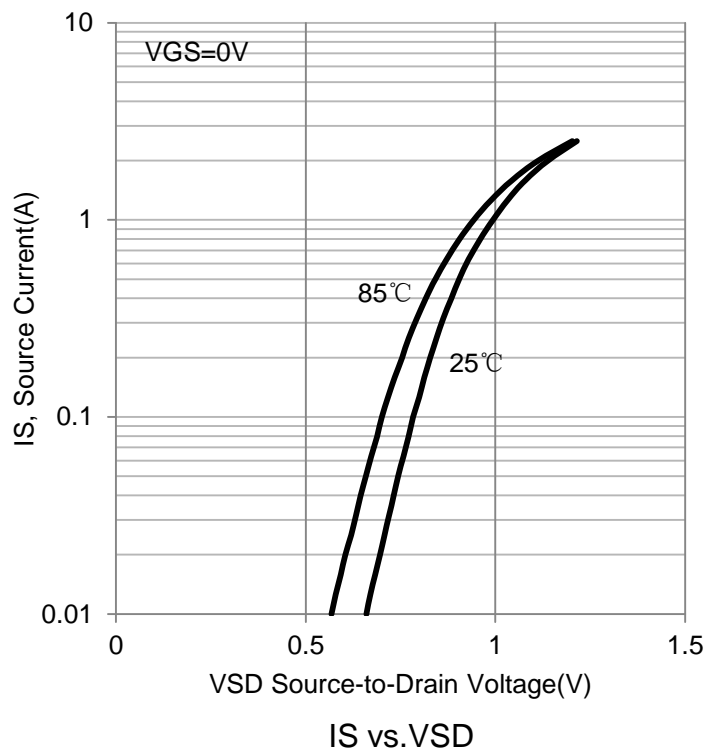
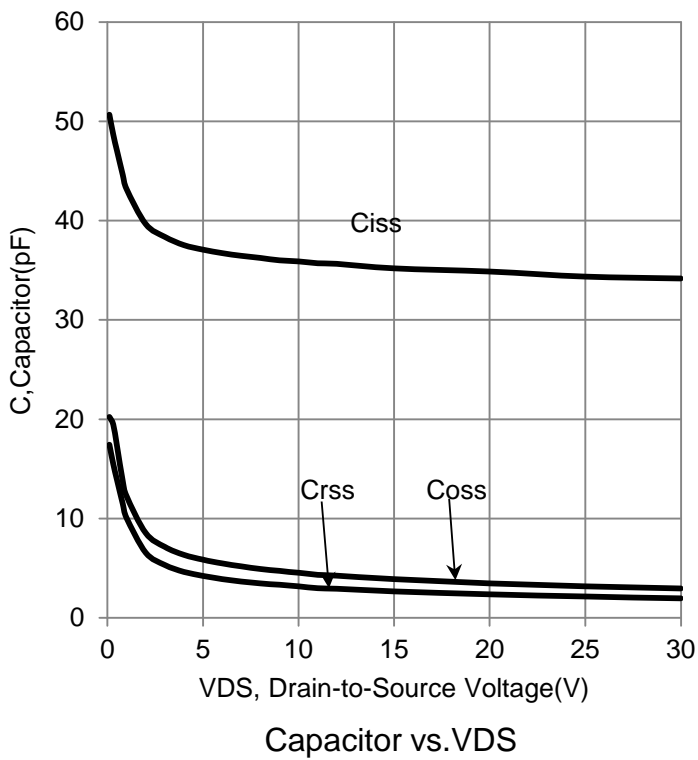
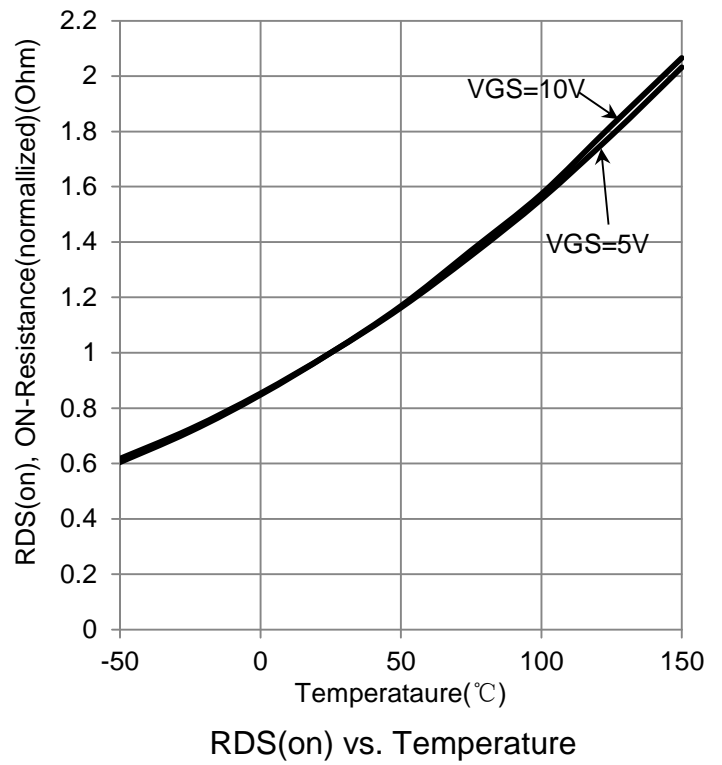
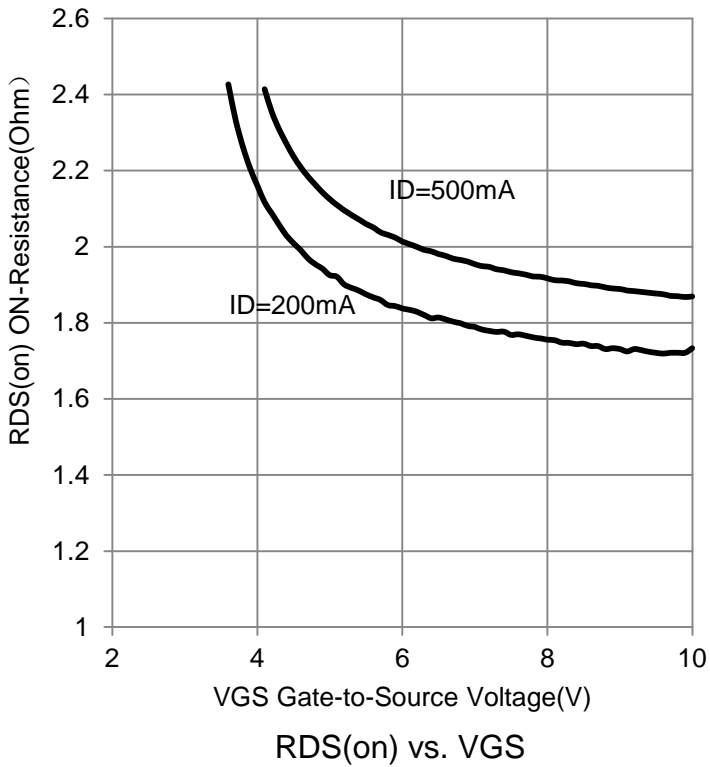
| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|--------|------|------|------|------|
| Diode Forward On-Voltage (IS = 115 mA, VGS = 0 V) | VSD | - | - | 1.4 | V |
| | | - | 0.7 | - | |

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

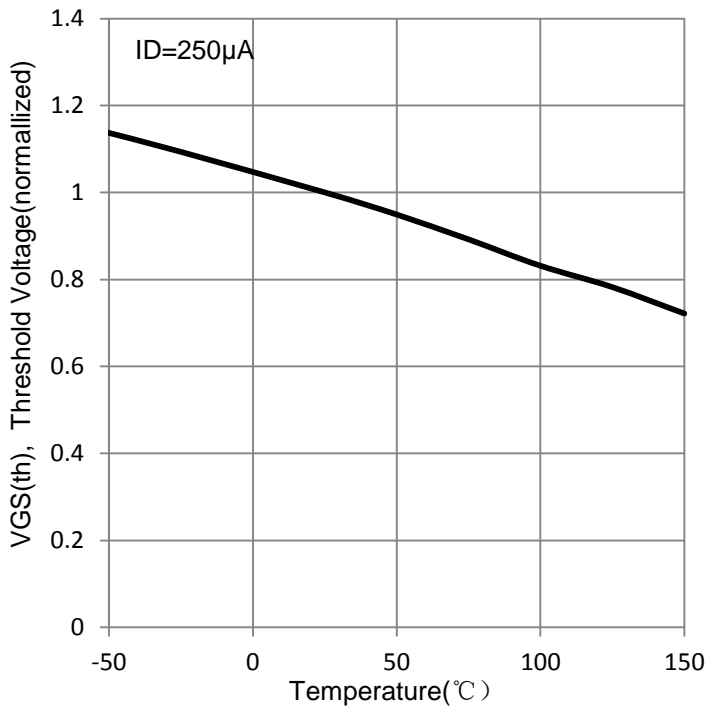
6. ELECTRICAL CHARACTERISTICS CURVES



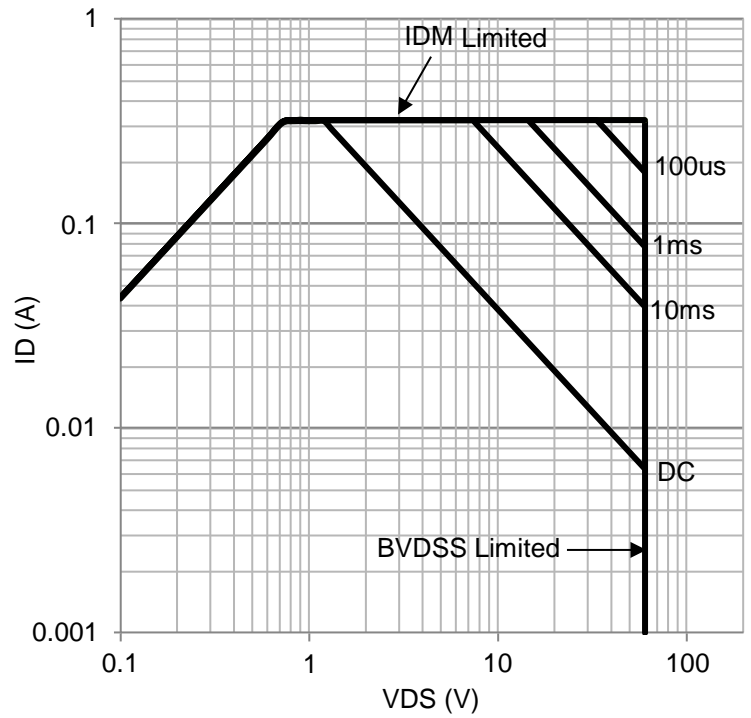
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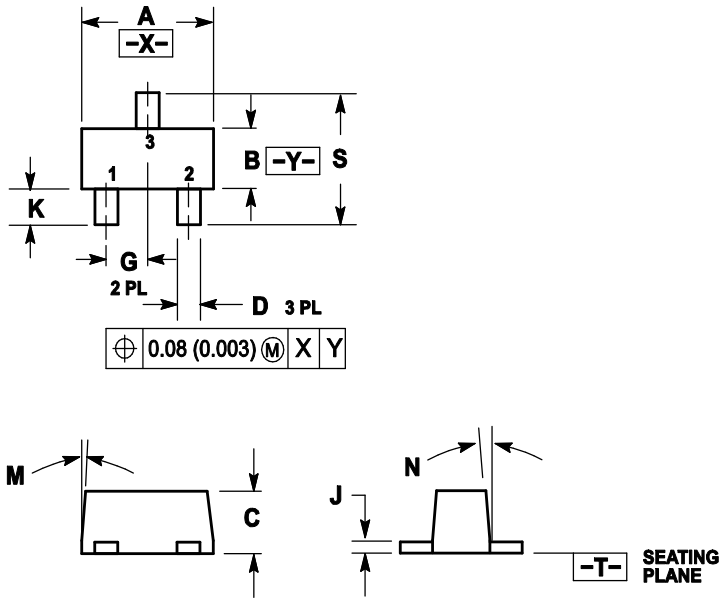


VGS(th) vs. Temperature



Safe Operating Area

7. OUTLINE AND DIMENSIONS

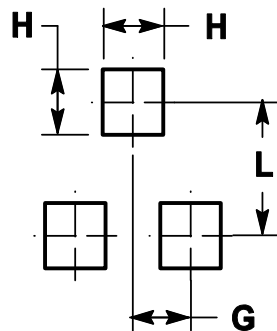


Notes:

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 A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|----------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |
| B | 0.75 | 0.85 | 0.95 | 0.030 | 0.034 | 0.040 |
| C | 0.60 | 0.70 | 0.80 | 0.024 | 0.028 | 0.031 |
| D | 0.23 | 0.28 | 0.33 | 0.009 | 0.011 | 0.013 |
| G | 0.50BSC | | | 0.020BSC | | |
| H | 0.53REF | | | 0.021REF | | |
| J | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| K | 0.30 | 0.40 | 0.50 | 0.012 | 0.016 | 0.02 |
| L | 1.10REF | | | 0.043REF | | |
| M | --- | --- | 10° | --- | --- | 10° |
| N | --- | --- | 10° | --- | --- | 10° |
| S | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |

8. SOLDERING FOOTPRINT



单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)