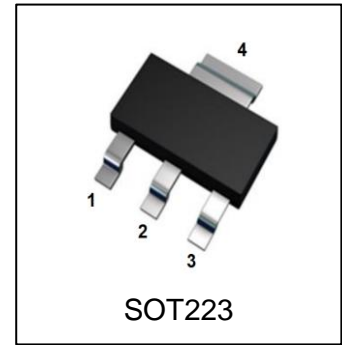


LN05N15TZHG

N-Channel 150-V Power MOSFET

1. FEATURES

- High Speed Power Switching.
- Enhanced Avalanche Ruggedness.
- Lead Free, HalogenFree.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

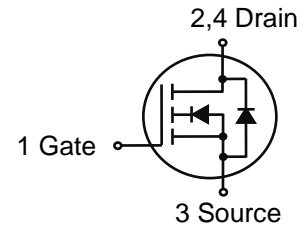


2. APPLICATION

- Synchronous Rectification in SMPS.
- Hard Switching and High Speed Circuit.

3. ORDERING INFORMATION

| Device | Marking | Shipping |
|-------------|---------|----------------|
| LN05N15TZHG | TN | 1000/Tape&Reel |



4. MAXIMUM RATINGS(Ta = 25°C unless otherwise stated)

| Parameter | Symbol | Limits | Unit |
|----------------------------------|----------|-----------|------|
| Drain-to-Source Voltage | VDSS | 150 | V |
| Gate-to-Source Voltage | VGS | ±20 | V |
| Continuous Drain Current(Note 1) | TA =25°C | ID | 4 |
| Pulsed Drain Current (Note 2) | IDM | 16 | A |
| Power Dissipation(Note 1) | TA =25°C | PD | 1.9 |
| Operating Junction Temperature | TJ | -55 ~+150 | °C |
| Storage Temperature Range | Tstg | -55 ~+150 | |

5. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|--|--------|--------|------|
| Thermal Resistance,Junction-to-Ambient(Note 1) | RθJA | 65 | °C/W |
| Thermal Resistance,Junction-to-Case (Note 3) | RθJA | 150 | °C/W |
| Thermal Resistance,Junction-to-Case (Note 3) | RθJC | 7 | °C/W |

1."1.5 x 1.5"FR4 board using 1 sq in pad, 2 oz Cu.

2.Pulse width limited by maximum junction temperature

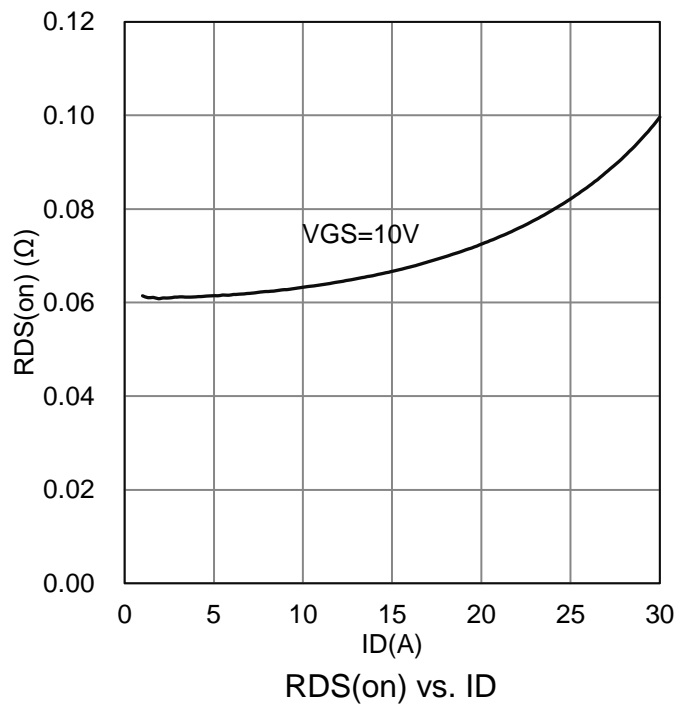
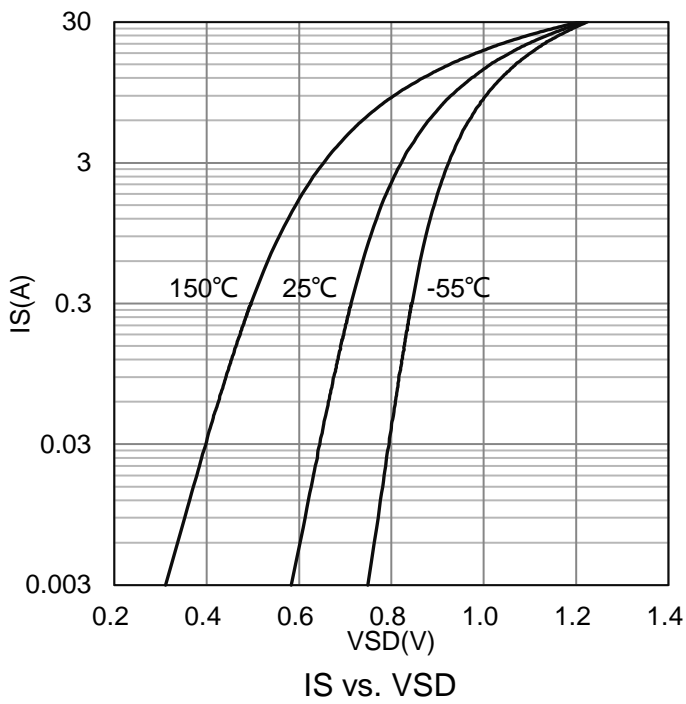
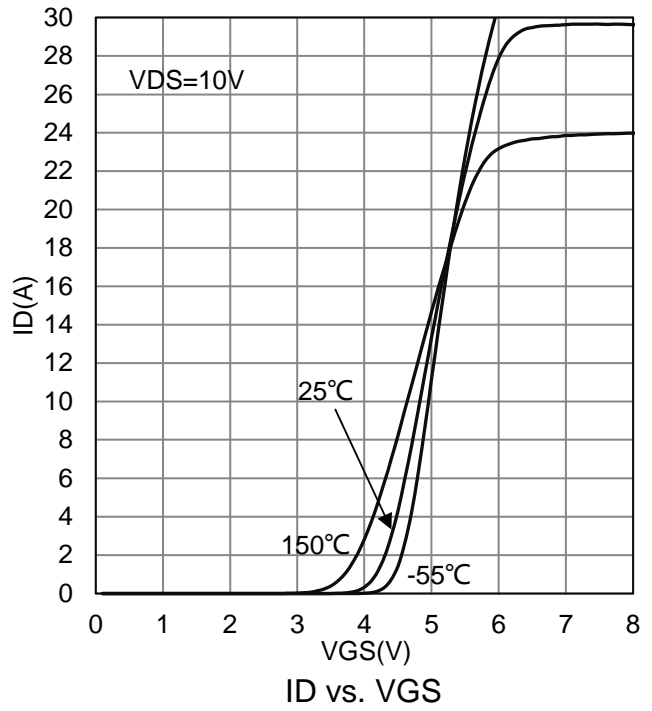
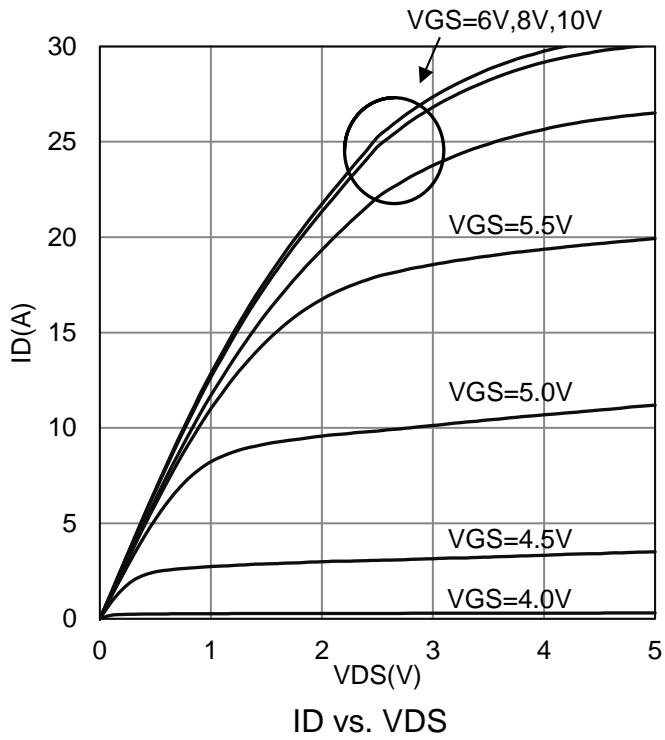
3.Surface-mounted on FR4 board using the minimum recommended pad size.

6. ELECTRICAL CHARACTERISTICS

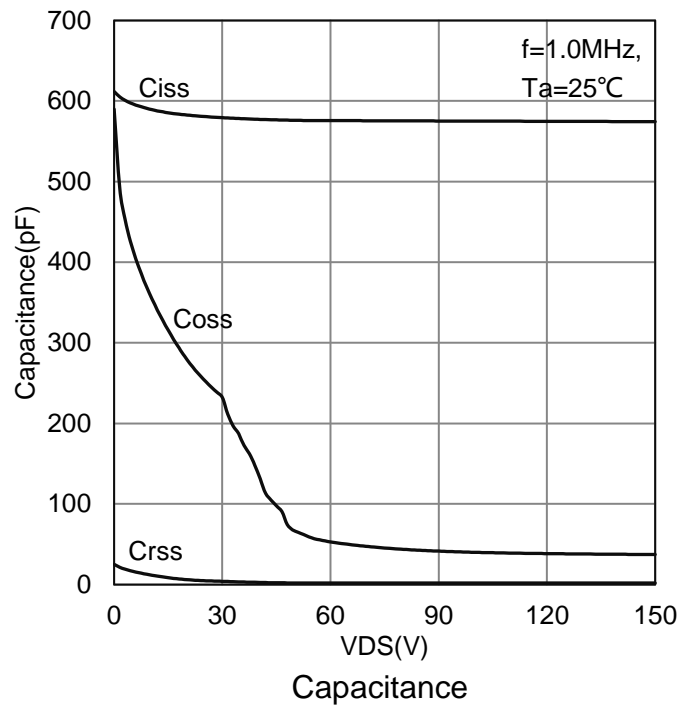
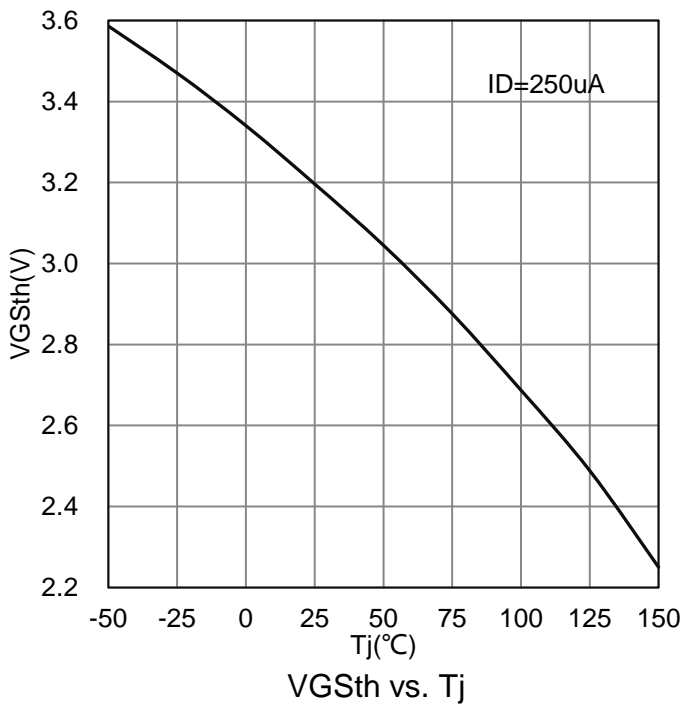
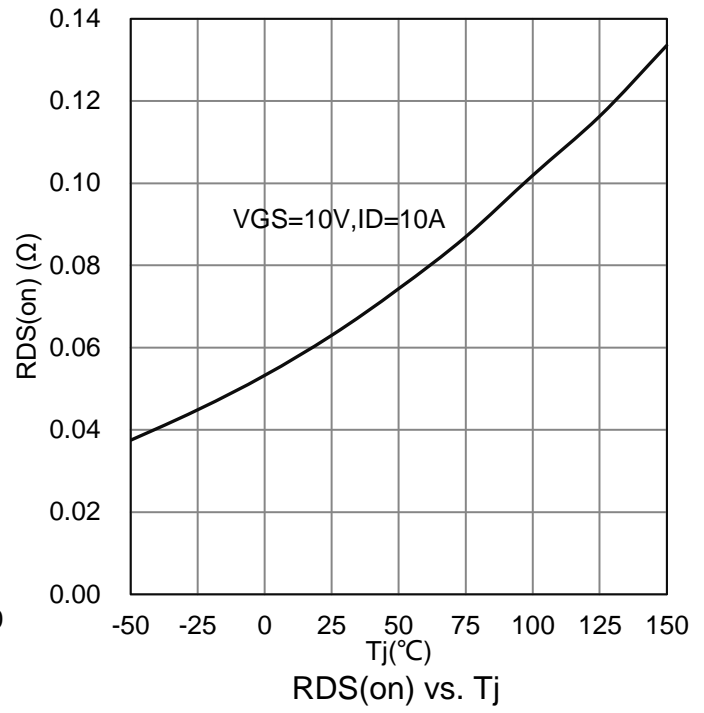
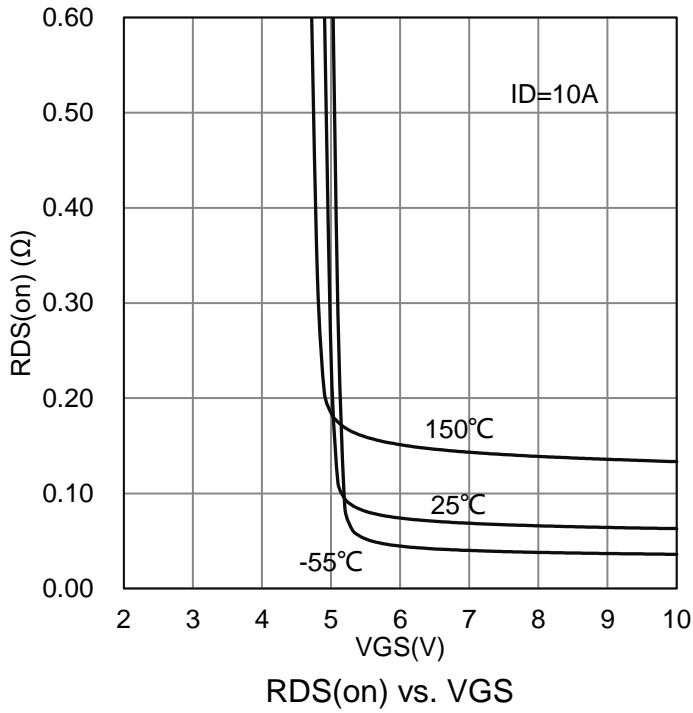
| Characteristic | Symbol | Min. | Typ. | Max. | Unit | |
|--|--|---------|------|-----------|------------|----|
| Static | | | | | | |
| Drain-Source Breakdown Voltage (VGS = 0, ID = 250 μ A) | VBRDSS | 150 | - | - | V | |
| Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A) | VGS(th) | 2 | 3 | 4 | V | |
| Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V) | IGSS | - | - | \pm 100 | nA | |
| Zero Gate Voltage Drain Current (VDS = 150 V, VGS = 0 V) | IDSS | - | - | 1 | μ A | |
| Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 3 A) | RDS(on) | - | 58 | 75 | m Ω | |
| Diode Forward Voltage(Note 4) (IS = 1A, VGS = 0 V) | VSD | - | 0.9 | 1.2 | V | |
| Dynamic | | | | | | |
| Total Gate Charge | (VDS = 75 V, VGS = 10 V, ID = 10 A) | Qg | - | 7.6 | - | nC |
| Gate-Source Charge | | Qgs | - | 2.8 | - | |
| Gate-Drain Charge | | Qgd | - | 1.9 | - | |
| Turn-On Delay Time | (VDS = 75 V, VGS = 10 V, ID = 10 A, RG=10 Ω) | td(on) | - | 9 | - | ns |
| Rise Time | | tr | - | 4 | - | |
| Turn-Off Delay Time | | td(off) | - | 11 | - | |
| Fall Time | | tf | - | 3 | - | |
| Input Capacitance | (VDS = 75 V, VGS = 0 V, f = 1 MHz) | Ciss | - | 578 | - | pF |
| Output Capacitance | | Coss | - | 46 | - | |
| Reverse Transfer Capacitance | | Crss | - | 1.6 | - | |

4.Pulse test: PW \leq 300 μ s duty cycle \leq 2%.

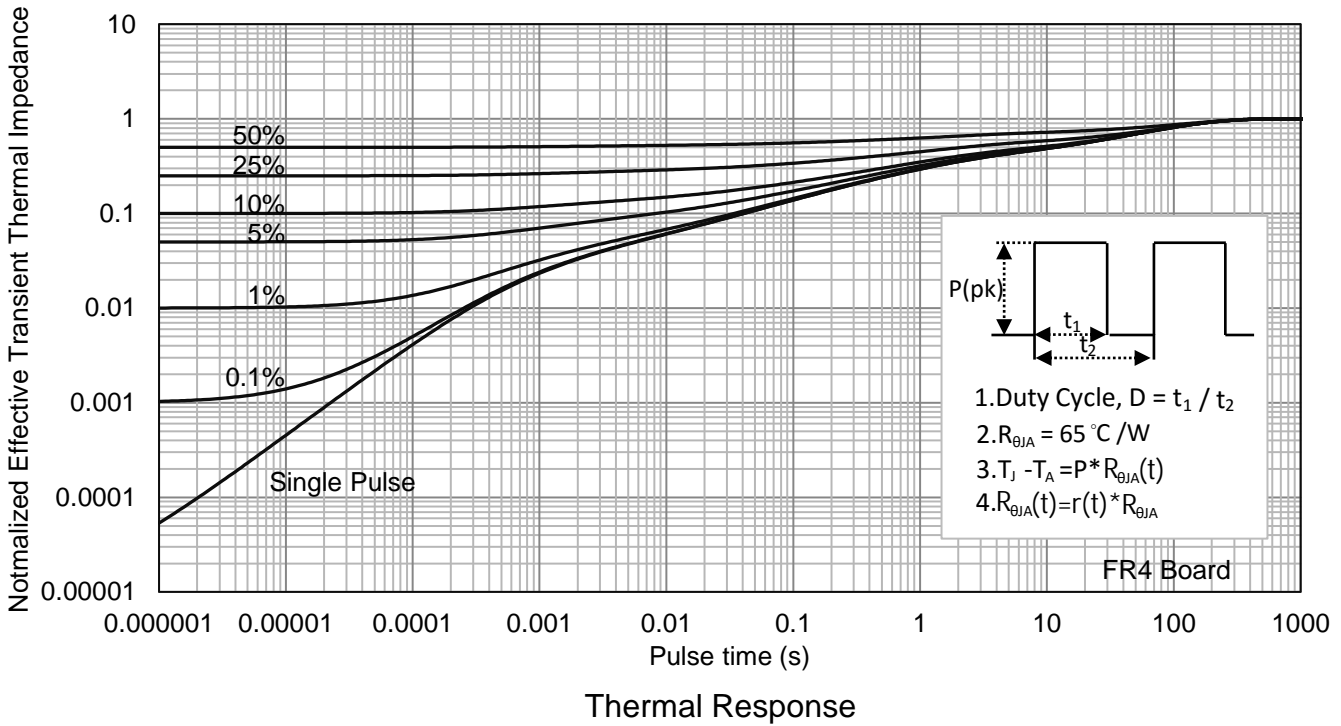
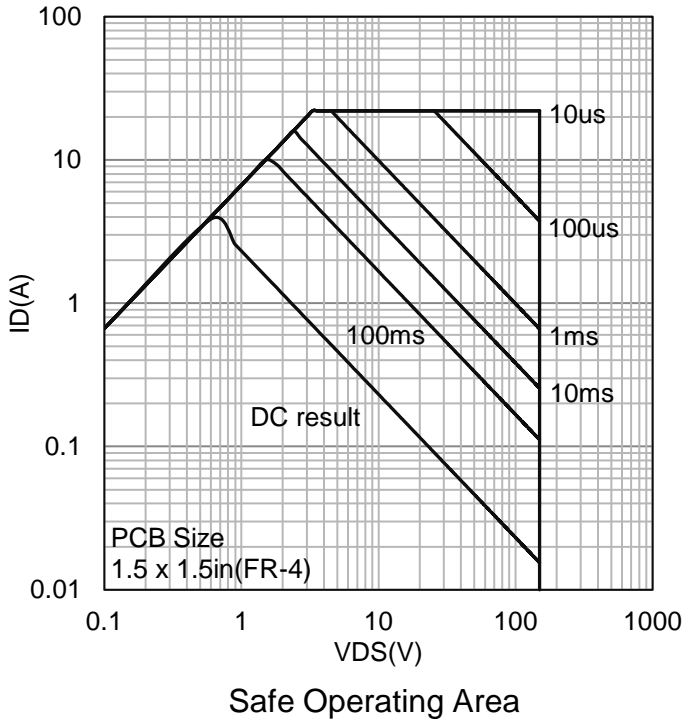
7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

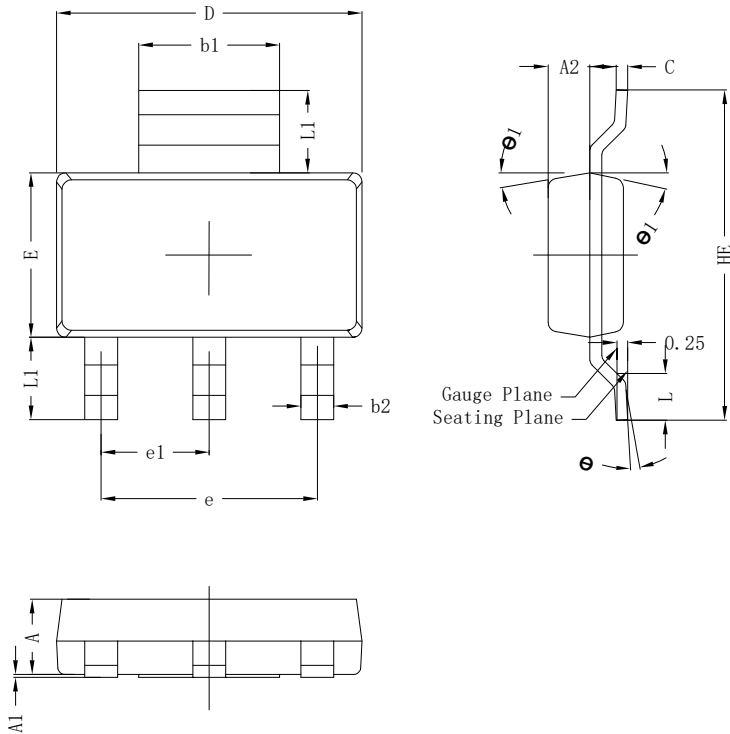


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS

SOT223

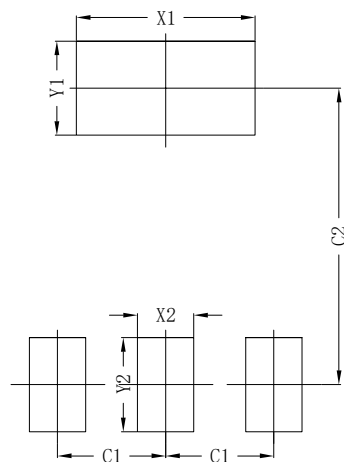


| SOT223 | | | |
|----------------------|-----------|------|------|
| DIM | MIN | NOR | MAX |
| A | 1.50 | 1.60 | 1.70 |
| A1 | 0.00 | 0.05 | 0.10 |
| A2 | 0.80 | 0.90 | 1.00 |
| b1 | 2.90 | 3.02 | 3.10 |
| b2 | 0.60 | 0.72 | 0.80 |
| c | 0.20 | 0.27 | 0.35 |
| D | 6.30 | 6.50 | 6.70 |
| E | 3.30 | 3.50 | 3.70 |
| e | 4.60BSC | | |
| e1 | 2.30BSC | | |
| HE | 6.80 | 7.00 | 7.20 |
| L | 0.80 | 1.00 | 1.20 |
| L1 | 1.75(REF) | | |
| theta | 0°~8° | | |
| theta 1 | 8° | 10° | 12° |
| All Dimensions in mm | | | |

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um
4. Protrusion or Gate Burrs shall not exceed 0.10mm per side.

9. SOLDERING FOOTPRINT



| SOT223 | |
|--------|------|
| DIM | (mm) |
| X1 | 3.80 |
| Y1 | 2.00 |
| X2 | 1.20 |
| Y2 | 2.00 |
| C1 | 2.30 |
| C2 | 6.30 |

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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- 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.