

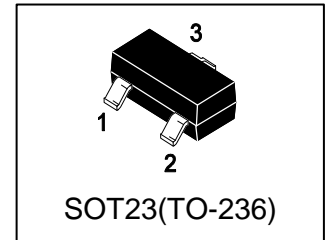
# LMBT4401LT1G

## S-LMBT4401LT1G

General Purpose Transistors NPN Silicon

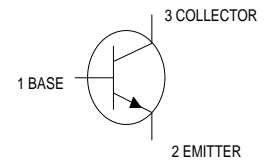
### 1. FEATURES

- 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.



### 2. DEVICE MARKING AND ORDERING INFORMATION

| Device       | Marking | Shipping        |
|--------------|---------|-----------------|
| LMBT4401LT1G | 2X      | 3000/Tape&Reel  |
| LMBT4401LT3G | 2X      | 10000/Tape&Reel |



### 3. MAXIMUM RATINGS(Ta = 25°C)

| Parameter                      | Symbol           | Limits | Unit |
|--------------------------------|------------------|--------|------|
| Collector–Emitter Voltage      | V <sub>CEO</sub> | 40     | V    |
| Collector–Base Voltage         | V <sub>CBO</sub> | 60     | V    |
| Emitter–Base Voltage           | V <sub>EBO</sub> | 6      | V    |
| Collector Current — Continuous | I <sub>C</sub>   | 600    | mA   |
| Collector Current — Peak       | I <sub>CM</sub>  | 900    | mA   |

### 4. THERMAL CHARACTERISTICS

| Parameter   | Symbol                            | Limits     | Unit        |
|---|-----------------------------------|------------|-------------|
| Total Device Dissipation,<br>FR-5 Board (Note 1) @ TA = 25°C<br>Derate above 25°C | PD                                | 225<br>1.8 | mW<br>mW/°C |
| Thermal Resistance,<br>Junction–to–Ambient(Note 1)                                | R <sub>θJA</sub>                  | 556        | °C/W        |
| Junction and Storage temperature  | T <sub>J</sub> , T <sub>stg</sub> | -55~+150   | °C          |

1. FR-5 = 1.0×0.75×0.062 in.

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

| Characteristic   | Symbol   | Min. | Typ. | Max. | Unit |
|--|----------|------|------|------|------|
| Collector–Emitter Breakdown Voltage<br>(IC = 1.0 mA, IB = 0) | VBR(CEO) | 40   | -    | -    | V    |
| Collector–Base Breakdown Voltage<br>(IC = 0.1 mA, IE = 0)    | VBR(CBO) | 60   | -    | -    | V    |
| Emitter–Base Breakdown Voltage<br>(IE = 0.1 mA, IC = 0)      | VBR(EBO) | 6    | -    | -    | V    |
| Collector Cutoff Current<br>VCE = 35 V, VEB = 0.4V)          | ICEX     | -    | -    | 0.1  | μA   |
| Base Cutoff Current<br>( VCE = 35 V, VEB = 0.4V)             | IBEV     | -    | -    | 0.1  | μA   |

**ON CHARACTERISTICS (Note 2.)**

|   |          |      |   |      |   |
|---|----------|------|---|------|---|
| DC Current Gain<br>(IC = 0.1 mA, VCE = 1.0 V)                     | HFE      | 20   | - | -    |   |
| (IC = 1.0 mA, VCE = 1.0 V)  |          | 40   | - | -    |   |
| (IC = 10 mA, VCE = 1.0 V)   |          | 80   | - | -    |   |
| (IC = 150 mA, VCE = 1.0 V)  |          | 100  | - | 300  |   |
| (IC = 500 mA, VCE = 2.0 V)  |          | 40   | - | -    |   |
| Collector–Emitter Saturation Voltage<br>(IC = 150 mA, IB = 15 mA) | VCE(sat) | -    | - | 0.4  | V |
| (IC = 500 mA, IB = 50 mA)   |          | -    | - | 0.75 |   |
| Base–Emitter Saturation Voltage<br>(IC = 150 mA, IB = 15 mA)      | VBE(sat) | 0.75 | - | 0.95 | V |
| (IC = 500 mA, IB = 50 mA)   |          | -    | - | 1.2  |   |

**SMALL–SIGNAL CHARACTERISTICS**

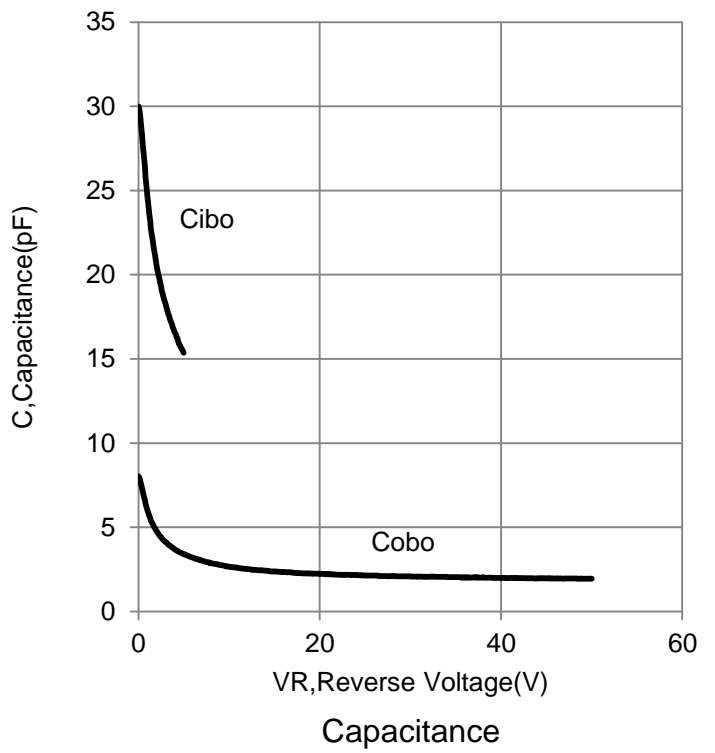
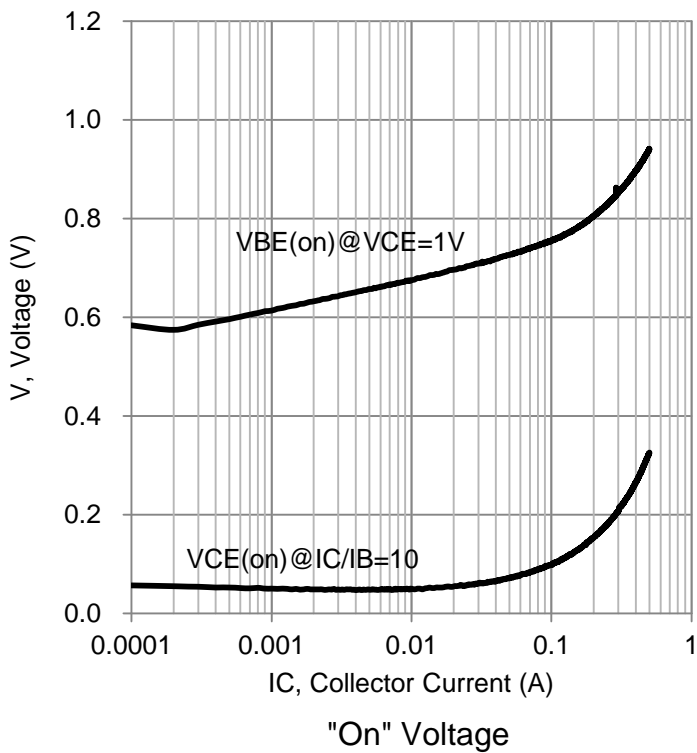
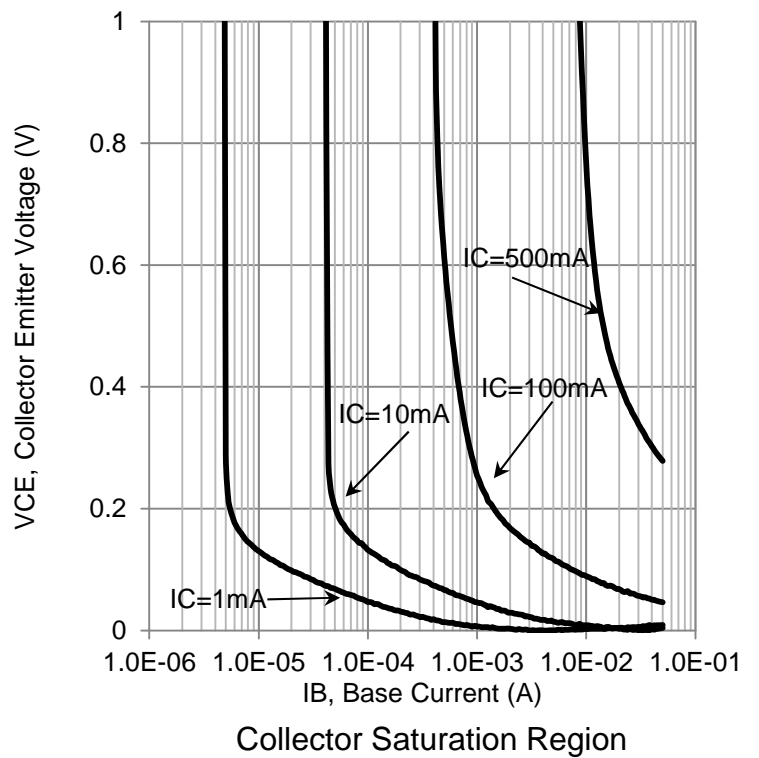
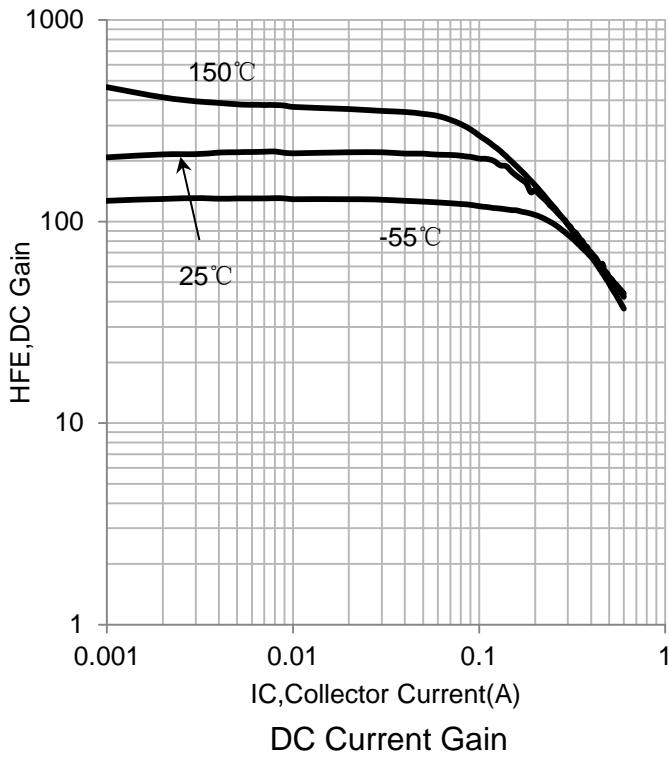
|   |      |     |   |     |     |
|---|------|-----|---|-----|-----|
| Current–Gain — Bandwidth Product<br>(IC = 20mA, VCE= 20V, f = 100MHz) | fT   | 250 | - | -   | MHz |
| Output Capacitance<br>(VCB = 5.0 V, IE = 0, f = 1.0 MHz)              | Cobo | -   | - | 6.5 | pF  |
| Input Capacitance<br>(VEB = 0.5 V, IC = 0, f = 1.0 MHz)               | Cibo | -   | - | 30  | pF  |

**SWITCHING CHARACTERISTICS**

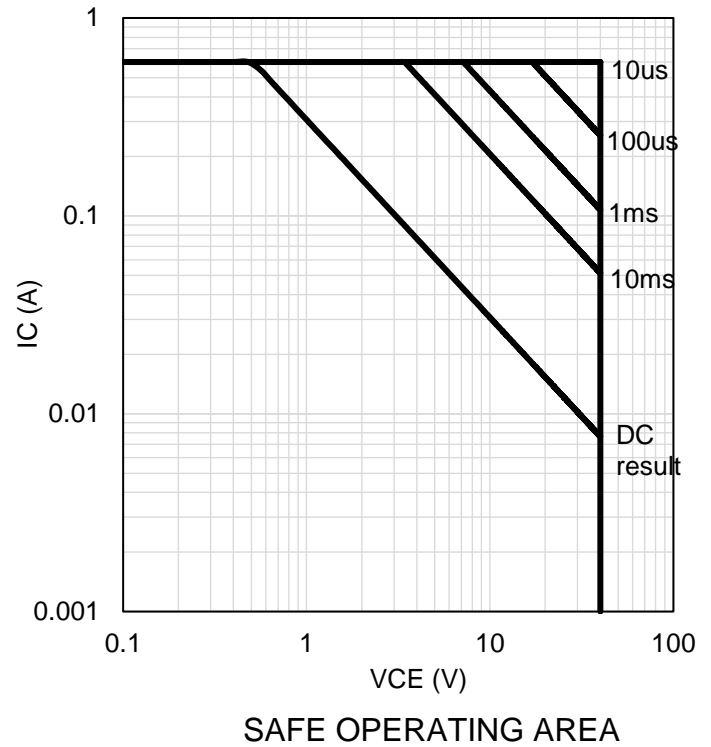
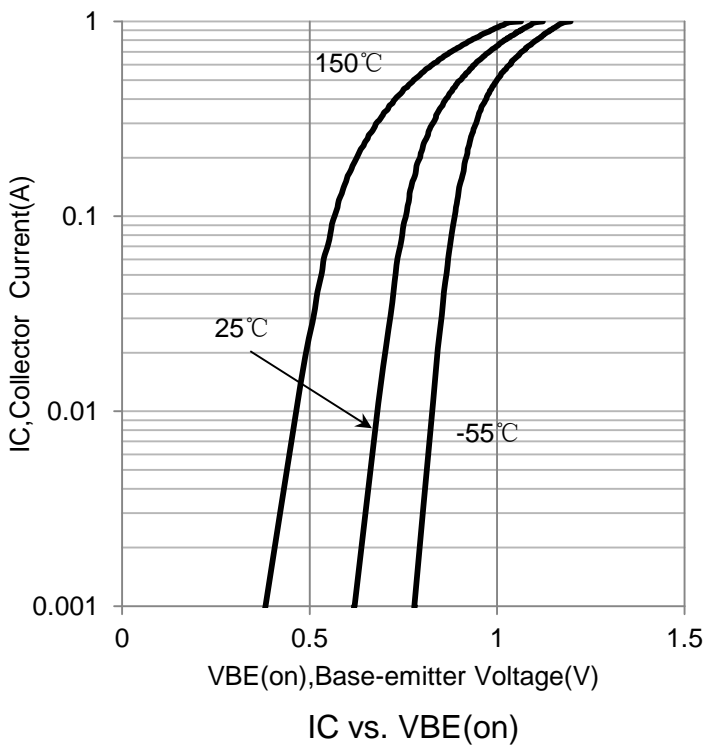
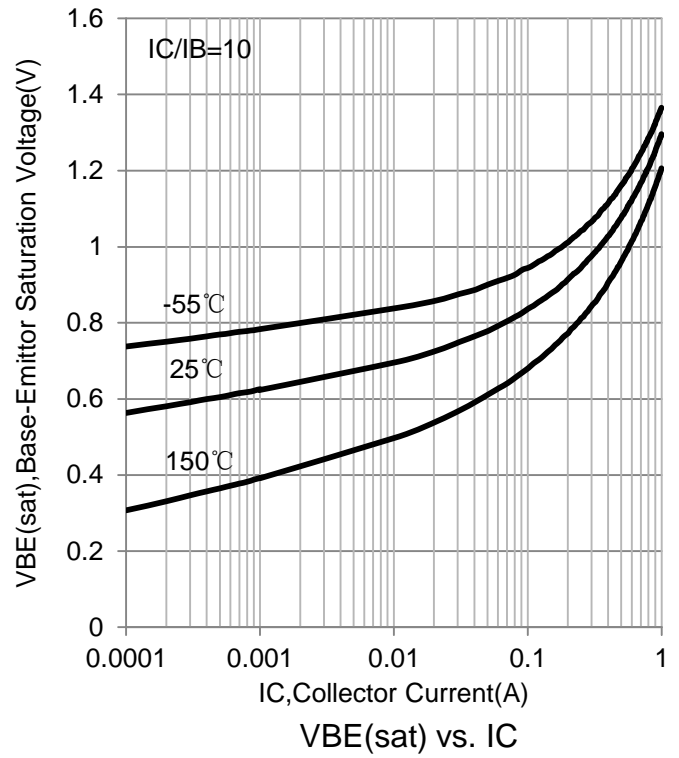
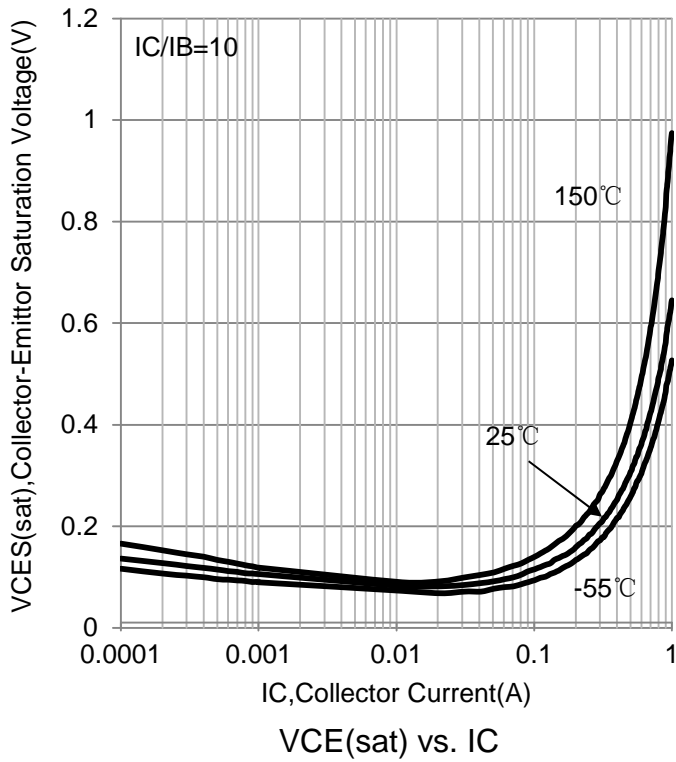
|              |  |    |   |   |     |    |
|--------------|--|----|---|---|-----|----|
| Delay Time   | (VCC = 30 V,<br>VEB=2.0V, IC = 150 mA,<br>IB1 = 15 mA) | td | - | - | 15  | ns |
| Rise Time    |  | tr | - | - | 20  |    |
| Storage Time | (VCC = 30 V, IC =150<br>mA, IB1 = IB2 =15 mA)          | ts | - | - | 225 |    |
| Fall Time    |  | tf | - | - | 30  |    |

 2.Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

**6. ELECTRICAL CHARACTERISTICS CURVES**



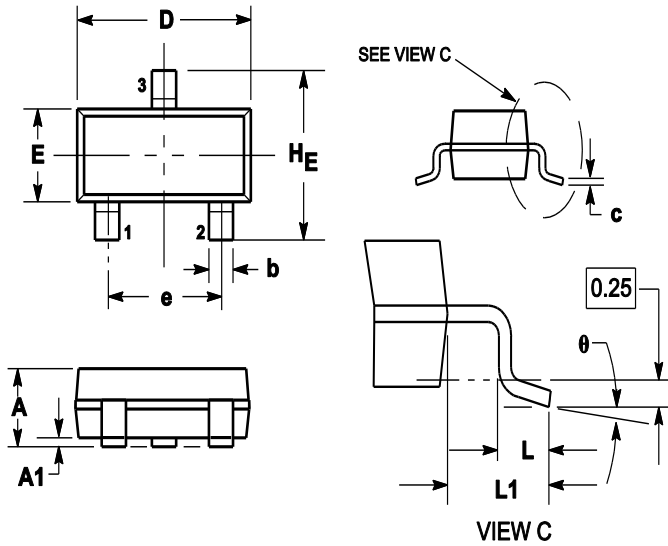
**6. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 7. OUTLINE AND DIMENSIONS

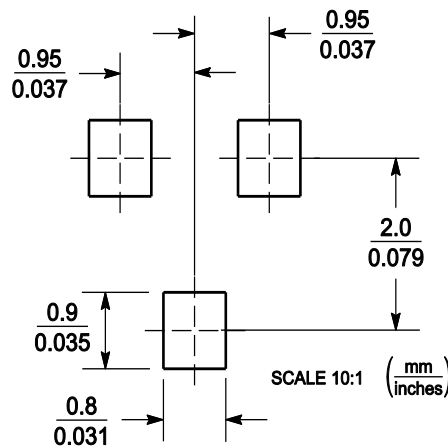
Notes:

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   | 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°   |

### 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\(乐山无线电\)](#)