

High Voltage Transistors

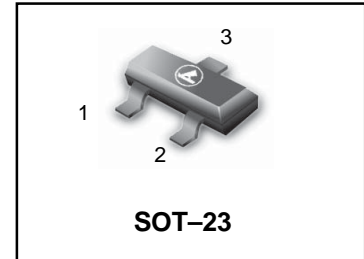
FEATURE

- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

LMBT5550LT1G
LMBT5551LT1G
S-LMBT5550LT1G
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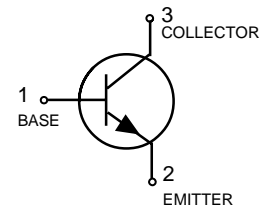
DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|--------------------------------|---------|-----------------|
| LMBT5550LT1G S-LMBT5550LT1G | M1F | 3000/Tape&Reel |
| LMBT5550LT3G S-LMBT5550LT3G | M1F | 10000/Tape&Reel |
| LMBT5551LT1G S-LMBT5551LT1G | G1 | 3000/Tape&Reel |
| LMBT5551LT3G S-LMBT5551LT3G | G1 | 10000/Tape&Reel |



MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--------------------------------|----------------------|-------|------|
| Collector - Emitter Voltage | V_{CEO} | 140 | Vdc |
| | MMBT5550 MMBT5551 | 160 | |
| Collector - Base Voltage | V_{CBO} | 160 | Vdc |
| | MMBT5550 MMBT5551 | 180 | |
| Emitter - Base Voltage | V_{EBO} | 6.0 | Vdc |
| Collector Current - Continuous | I_C | 600 | mAdc |



THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|---------------------------|
| Total Device Dissipation FR-5 Board (Note 1) @ $T_A = 25^\circ\text{C}$ Derate Above 25°C | P_D | 225 | mW |
| | | 1.8 | mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 556 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina Substrate (Note 2) @ $T_A = 25^\circ\text{C}$ Derate Above 25°C | P_D | 300 | mW |
| | | 2.4 | mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 417 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

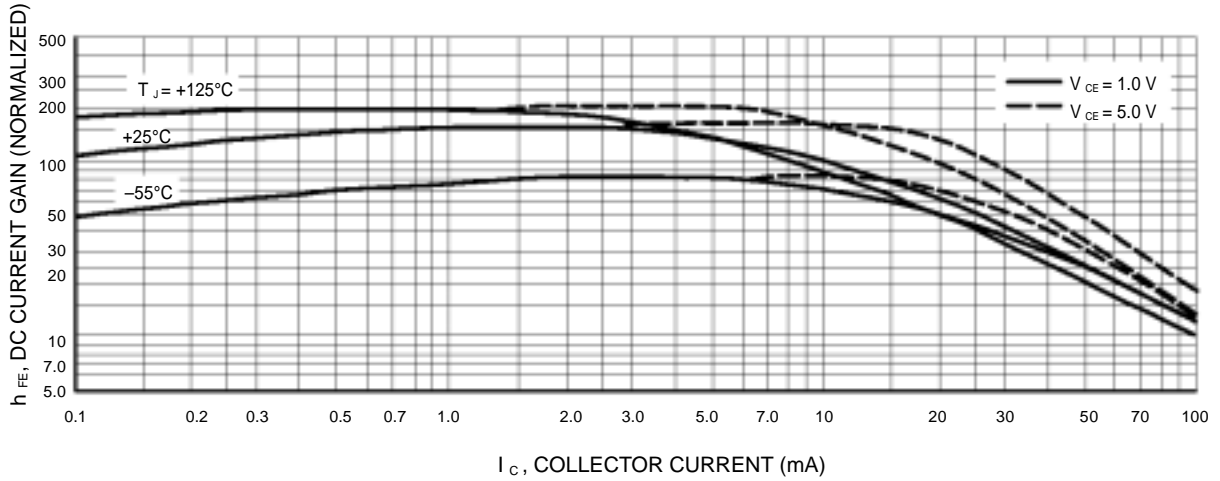
**LMBT5550LT1G LMBT5551LT1G
S-LMBT5550LT1G S-LMBT5551LT1G**

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | | Symbol | Min | Max | Unit |
|--|--|---------------|----------------------------------|--------------------------------|---------------------------------|
| OFF CHARACTERISTICS | | | | | |
| Collector - Emitter Breakdown Voltage (Note 3) ($I_C = 1.0 \text{ mAdc}$, $I_B = 0$) | LMBT5550 LMBT5551 | $V_{(BR)CEO}$ | 140 160 | - - | Vdc |
| Collector - Base Breakdown Voltage ($I_C = 100 \mu\text{Adc}$, $I_E = 0$) | LMBT5550 LMBT5551 | $V_{(BR)CBO}$ | 160 180 | - - | Vdc |
| Emitter - Base Breakdown Voltage ($I_E = 10 \mu\text{Adc}$, $I_C = 0$) | | $V_{(BR)EBO}$ | 6.0 | - | Vdc |
| Collector Cutoff Current ($V_{CB} = 100 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 120 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 100 \text{ Vdc}$, $I_E = 0$, $T_A = 100^\circ\text{C}$) ($V_{CB} = 120 \text{ Vdc}$, $I_E = 0$, $T_A = 100^\circ\text{C}$) | LMBT5550 LMBT5551 LMBT5550 LMBT5551 | I_{CBO} | - - - - | 100 50 100 50 | nAdc μAdc |
| Emitter Cutoff Current ($V_{EB} = 4.0 \text{ Vdc}$, $I_C = 0$) | | I_{EBO} | - | 50 | nAdc |
| ON CHARACTERISTICS | | | | | |
| DC Current Gain ($I_C = 1.0 \text{ mAdc}$, $V_{CE} = 5.0 \text{ Vdc}$) ($I_C = 10 \text{ mAdc}$, $V_{CE} = 5.0 \text{ Vdc}$) ($I_C = 50 \text{ mAdc}$, $V_{CE} = 5.0 \text{ Vdc}$) | LMBT5550 LMBT5551 LMBT5550 LMBT5551 LMBT5550 LMBT5551 | h_{FE} | 60 80 60 80 20 30 | - - 250 250 - - | - |
| Collector - Emitter Saturation Voltage ($I_C = 10 \text{ mAdc}$, $I_B = 1.0 \text{ mAdc}$) ($I_C = 50 \text{ mAdc}$, $I_B = 5.0 \text{ mAdc}$) | Both Types LMBT5550 LMBT5551 | $V_{CE(sat)}$ | - - - | 0.15 0.25 0.20 | Vdc |
| Base - Emitter Saturation Voltage ($I_C = 10 \text{ mAdc}$, $I_B = 1.0 \text{ mAdc}$) ($I_C = 50 \text{ mAdc}$, $I_B = 5.0 \text{ mAdc}$) | Both Types LMBT5550 LMBT5551 | $V_{BE(sat)}$ | - - - | 1.0 1.2 1.0 | Vdc |
| Collector Emitter Cut-off ($V_{CB} = 10 \text{ V}$) ($V_{CB} = 75 \text{ V}$) | Both Types | I_{CES} | - - | 50 100 | nA |

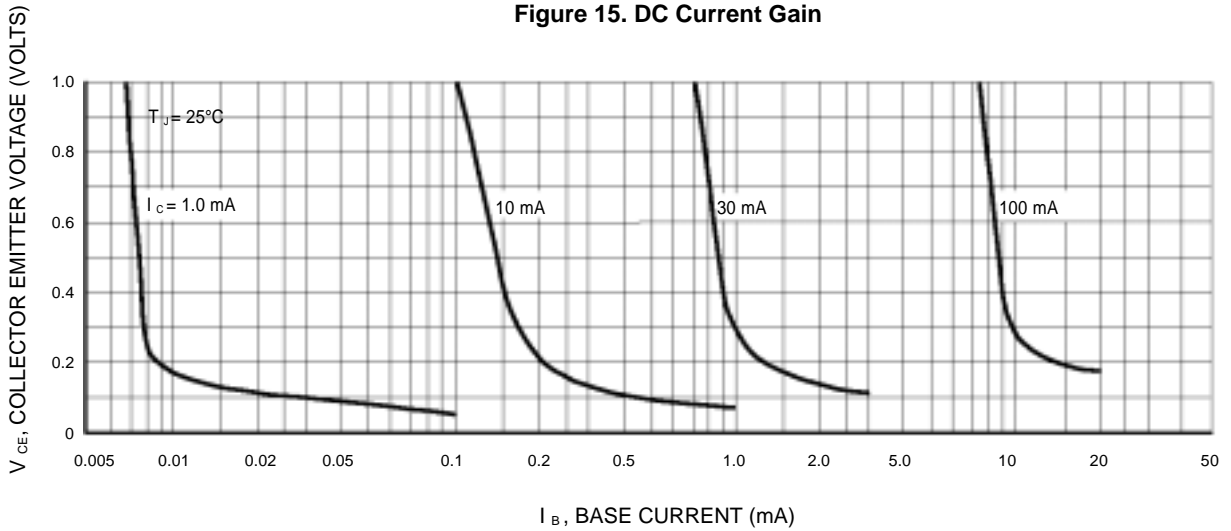
- FR-5 = 1.0 x 0.75 x 0.062 in.
- Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.
- Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2.0%.

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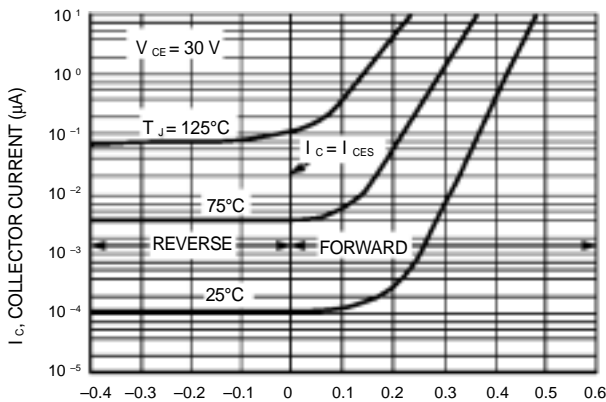
I_C , COLLECTOR CURRENT (mA)

Figure 15. DC Current Gain



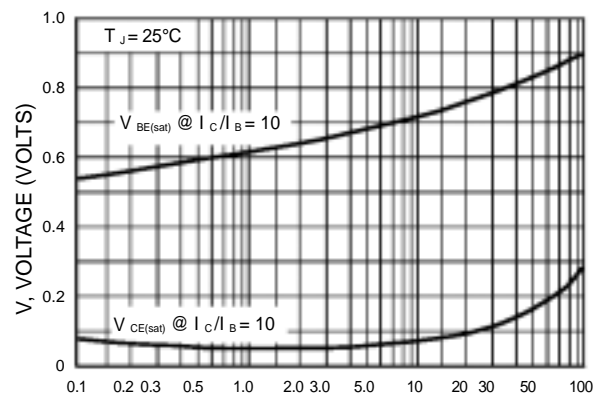
I_B , BASE CURRENT (mA)

Figure 16. Collector Saturation Region



V_{BE} , BASE-EMITTER VOLTAGE (VOLTS)

Figure 3. Collector Cut-Off Region



I_C , COLLECTOR CURRENT (mA)

Figure 4. "On" Voltages

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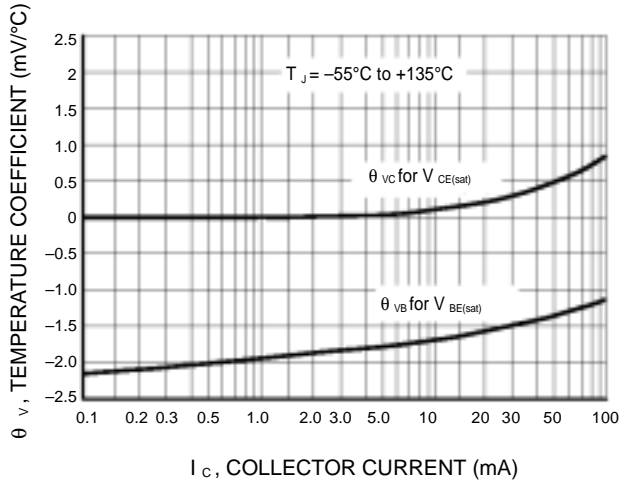
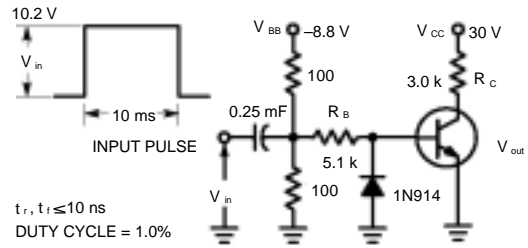


Figure 5. Temperature Coefficients



Values Shown are for $I_c @ 10 \text{ mA}$

Figure 6. Switching Time Test Circuit

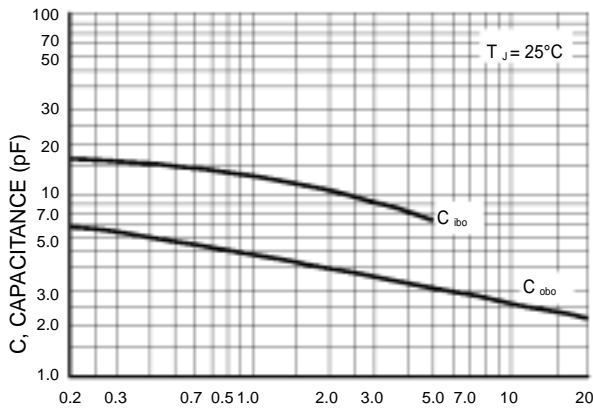
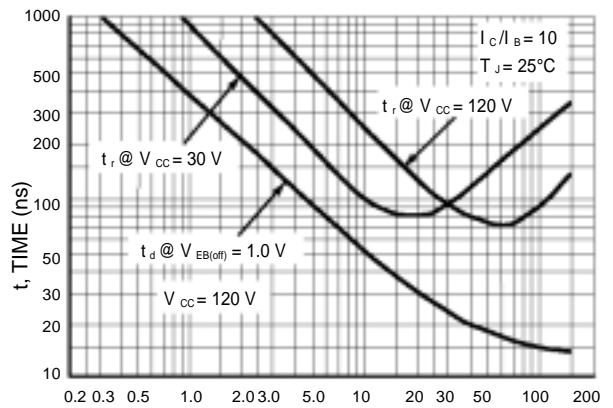


Figure 7. Capacitances Figure



8. Turn-On Time

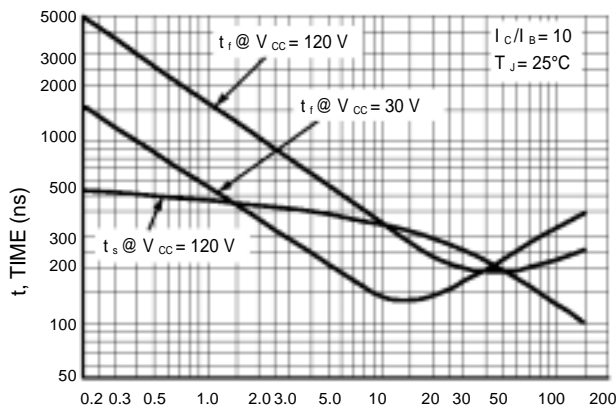
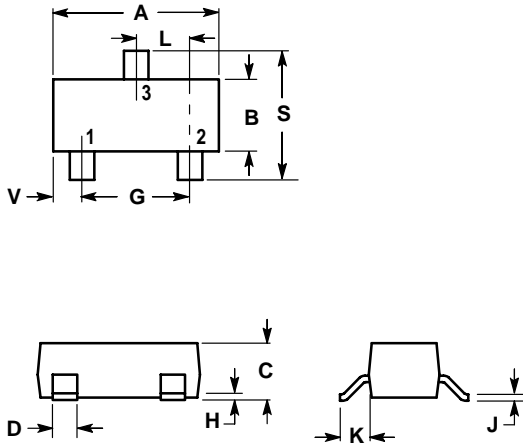


Figure 9. Turn-Off Time

LMBT5550LT1G LMBT5551LT1G
S-LMBT5550LT1G S-LMBT5551LT1G

SOT-23

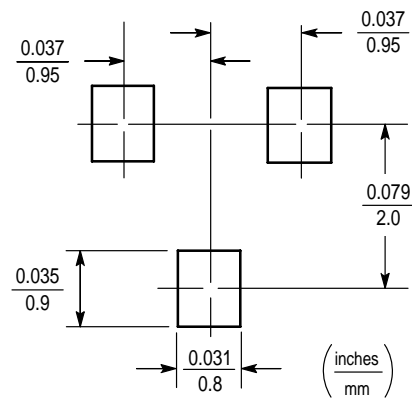


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|--------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.1102 | 0.1197 | 2.80 | 3.04 |
| B | 0.0472 | 0.0551 | 1.20 | 1.40 |
| C | 0.0350 | 0.0440 | 0.89 | 1.11 |
| D | 0.0150 | 0.0200 | 0.37 | 0.50 |
| G | 0.0701 | 0.0807 | 1.78 | 2.04 |
| H | 0.0005 | 0.0040 | 0.013 | 0.100 |
| J | 0.0034 | 0.0070 | 0.085 | 0.177 |
| K | 0.0140 | 0.0285 | 0.35 | 0.69 |
| L | 0.0350 | 0.0401 | 0.89 | 1.02 |
| S | 0.0830 | 0.1039 | 2.10 | 2.64 |
| V | 0.0177 | 0.0236 | 0.45 | 0.60 |

- PIN 1. BASE
 2. EMITTER
 3. COLLECTOR



单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)