

Dual Driver Transistors

NPN/PNP Duals

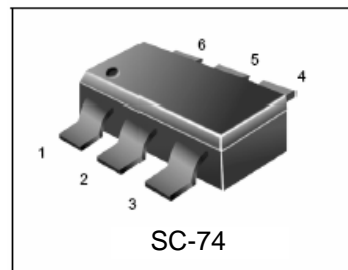
LMBTA05UT1G
LMBTA06UT1G

FEATURES

- We declare that the material of product compliance with RoHS requirements.

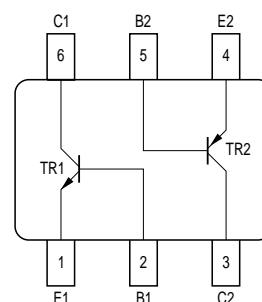
MAXIMUM RATINGS

| Rating | Symbol | Value | | Unit |
|--------------------------------|-----------|---------|---------|------|
| | | LMBTA05 | LMBTA06 | |
| Collector–Emitter Voltage | V_{CE0} | 60 | 80 | Vdc |
| Collector–Base Voltage | V_{CB0} | 60 | 80 | Vdc |
| Emitter–Base Voltage | V_{EB0} | 4.0 | | Vdc |
| Collector Current — Continuous | I_C | 500 | | mAdc |



THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|-----------------|-------------|---------------------------|
| Total Device Dissipation FR–5 Board, (1) $T_A = 25^\circ\text{C}$ | P_D | 225 | mW |
| Derate above 25°C | | 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, (2) $T_A = 25^\circ\text{C}$ | P_D | 300 | mW |
| Derate above 25°C | | 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 | $^\circ\text{C}$ |



DEVICE MARKING

LMBTA05UT1G = 3H, LMBTA06UT1G = 3GM;

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

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | |
|---|---------------|-----|-----|-----------------|
| Collector–Emitter Breakdown Voltage(3) ($I_C = 1.0 \text{ mAdc}, I_B = 0$) | $V_{(BR)CEO}$ | | | Vdc |
| LMBTA05 | | 60 | — | |
| LMBTA06 | | 80 | — | |
| Emitter–Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}, I_C = 0$) | $V_{(BR)EBO}$ | 4.0 | — | Vdc |
| Collector Cutoff Current ($V_{CE} = 60\text{Vdc}, I_B = 0$) | I_{CES} | — | 0.1 | μAdc |
| Emitter Cutoff Current ($V_{CB} = 60\text{Vdc}, I_E = 0$) | I_{CBO} | — | 0.1 | μAdc |
| ($V_{CB} = 80\text{Vdc}, I_E = 0$) | LMBTA05 | — | 0.1 | |
| LMBTA06 | | — | 0.1 | |

1. FR–5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

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

LMBTA05UT1G LMBTA06UT1G

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

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

ON CHARACTERISTICS

| | | | | |
|--|---------------|------------|--------|-----|
| DC Current Gain ($I_C = 10\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$) ($I_C = 100\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$) | h_{FE} | 100 100 | — — | — |
| Collector–Emitter Saturation Voltage ($I_C = 100\text{ mAdc}$, $I_B = 10\text{ mAdc}$) | $V_{CE(sat)}$ | — | 0.25 | Vdc |
| Base–Emitter On Voltage ($I_C = 100\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$) | $V_{BE(sat)}$ | — | 1.2 | Vdc |

SMALL–SIGNAL CHARACTERISTICS

| | | | | |
|---|-------|-----|---|-----|
| Current –Gain – Bandwidth Product(4) ($V_{CE} = 2.0\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$) | f_T | 100 | — | MHz |
|---|-------|-----|---|-----|

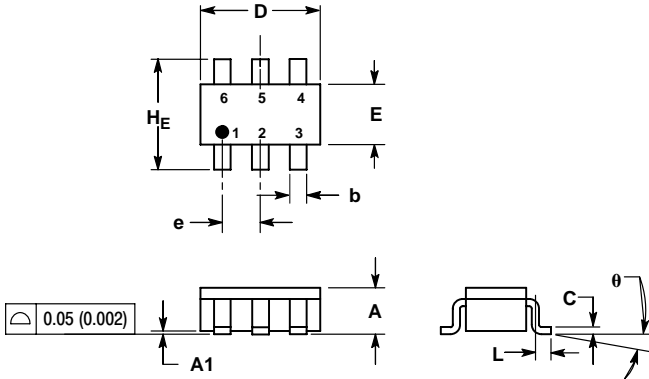
4. f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

ORDERING INFORMATION

| Device | Marking | Shipping |
|--------------------|------------|-----------------------------|
| LMBTA05UT1G | 3H | 3000/Tape & Reel |
| LMBTA06UT1G | 3GM | 3000/Tape & Reel |

LMBTA05UT1G LMBTA06UT1G

SC-74



| DIM | MILLIMETERS | | | INCHES | | |
|-------|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.90 | 1.00 | 1.10 | 0.035 | 0.039 | 0.043 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.25 | 0.37 | 0.50 | 0.010 | 0.015 | 0.020 |
| c | 0.10 | 0.18 | 0.26 | 0.004 | 0.007 | 0.010 |
| D | 2.90 | 3.00 | 3.10 | 0.114 | 0.118 | 0.122 |
| E | 1.30 | 1.50 | 1.70 | 0.051 | 0.059 | 0.067 |
| e | 0.85 | 0.95 | 1.05 | 0.034 | 0.037 | 0.041 |
| L | 0.20 | 0.40 | 0.60 | 0.008 | 0.016 | 0.024 |
| HE | 2.50 | 2.75 | 3.00 | 0.099 | 0.108 | 0.118 |
| theta | 0° | - | 10° | 0° | - | 10° |

