

| Parameter | DTr1 and DTr2 |
|-----------|---------------|
| V_{CEO} | -50V |
| I_C | -100mA |
| R_1 | 10k Ω |

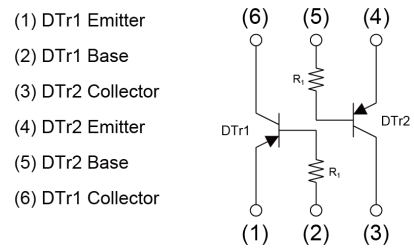
●Features

- 1)Two DTA114T chips in a EMT or UMT package.
- 2)Mounting possible with EMT3 or UMT3 automatic mounting machines.
- 3)Transistor elements are independent, eliminating interference.
- 4)Mounting cost and area can be cut in half.

●Outline

| SOT-563 | SOT-363 |
|----------------|-----------------|
| | |
| EMB4 (EMT6) | UMB4N (UMT6) |

●Inner circuit



●Application

INVERTER, INTERFACE, DRIVER

●Packaging specifications

| Part No. | Package | Package size | Taping code | Reel size (mm) | Tape width (mm) | Basic ordering unit.(pcs) | Marking |
|----------|-------------------|--------------|-------------|----------------|-----------------|---------------------------|---------|
| EMB4 | SOT-563 (EMT6) | 1616 | T2R | 180 | 8 | 8000 | B4 |
| UMB4N | SOT-363 (UMT6) | 2021 | TN | 180 | 8 | 3000 | B4 |

● **Absolute maximum ratings** ($T_a = 25^\circ\text{C}$)

<For DTr1 and DTr2 in common>

| Parameter | | Symbol | Values | Unit |
|------------------------------|-------|-----------------------|-------------|------------------|
| Collector-base voltage | | V_{CBO} | -50 | V |
| Collector-emitter voltage | | V_{CEO} | -50 | V |
| Emitter-base voltage | | V_{EBO} | -5 | V |
| Collector current | | I_{C} | -100 | mA |
| Power dissipation | EMB4 | P_{D}^{*1*2} | 150 | mW/Total |
| | UMB4N | P_{D}^{*1*2} | 150 | |
| Junction temperature | | T_{j} | 150 | $^\circ\text{C}$ |
| Range of storage temperature | | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

● **Electrical characteristics** ($T_a = 25^\circ\text{C}$)

<For DTr1 and DTr2 in common>

| Parameter | Symbol | Conditions | Values | | | Unit |
|--------------------------------------|----------------------|---|--------|------|------|------------|
| | | | Min. | Typ. | Max. | |
| Collector-base breakdown voltage | BV_{CBO} | $I_{\text{C}} = -50\mu\text{A}$ | -50 | - | - | V |
| Collector-emitter breakdown voltage | BV_{CEO} | $I_{\text{C}} = -1\text{mA}$ | -50 | - | - | V |
| Emitter-base breakdown voltage | BV_{EBO} | $I_{\text{E}} = -50\mu\text{A}$ | -5 | - | - | V |
| Collector cut-off current | I_{CBO} | $V_{\text{CB}} = -50\text{V}$ | - | - | -500 | nA |
| Emitter cut-off current | I_{EBO} | $V_{\text{EB}} = -4\text{V}$ | - | - | -500 | nA |
| Collector-emitter saturation voltage | $V_{\text{CE(sat)}}$ | $I_{\text{C}} = -10\text{mA}, I_{\text{B}} = -1\text{mA}$ | - | - | -300 | mV |
| DC current gain | h_{FE} | $V_{\text{CE}} = -5\text{V}, I_{\text{C}} = -1\text{mA}$ | 100 | 250 | 600 | - |
| Input resistance | R_1 | - | 7 | 10 | 13 | k Ω |
| Transition frequency | f_{T}^{*3} | $V_{\text{CE}} = -10\text{V}, I_{\text{E}} = 5\text{mA}, f = 100\text{MHz}$ | - | 250 | - | MHz |

*1 Each terminal mounted on a reference land.

*2 120mW per element must not be exceeded.

*3 Characteristics of built-in transistor.

● **Electrical characteristic curves** ($T_a = 25^\circ\text{C}$)
 <For DTr1 and DTr2 in common>

Fig.1 Grounded Emitter Propagation Characteristics

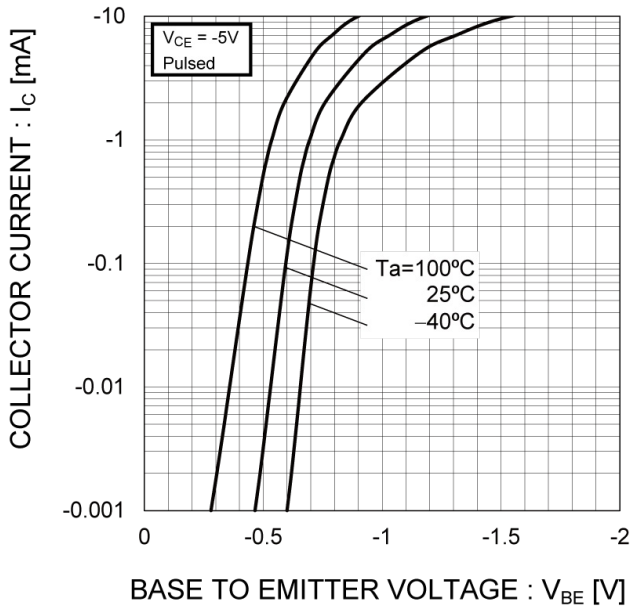


Fig.2 Grounded Emitter Output Characteristics

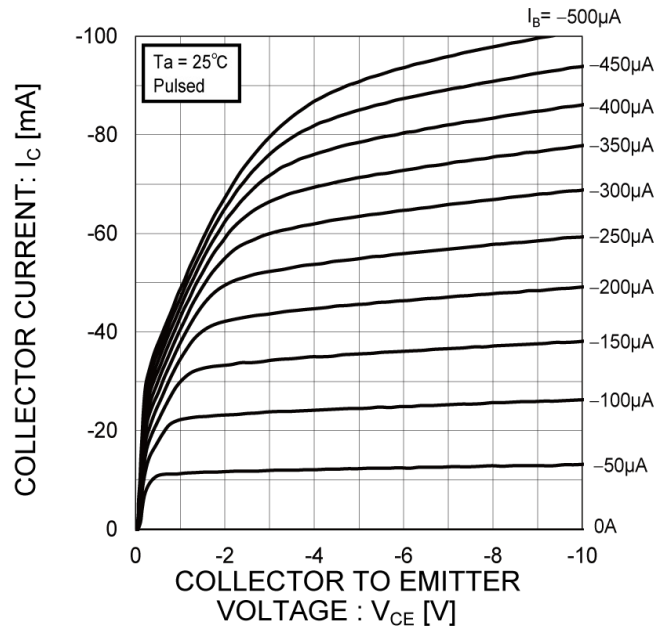


Fig.3 DC Current Gain vs. Collector Current

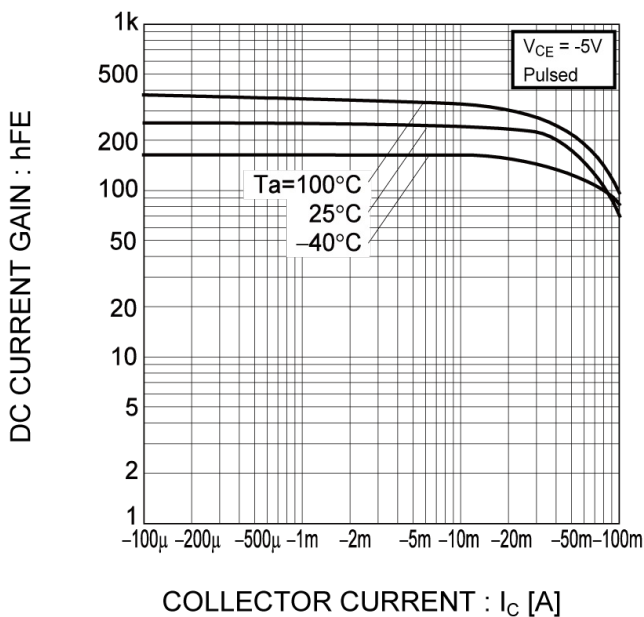
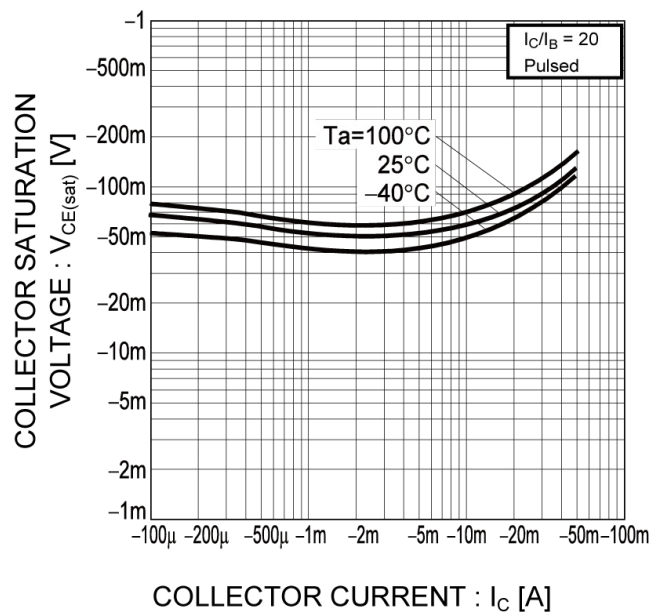
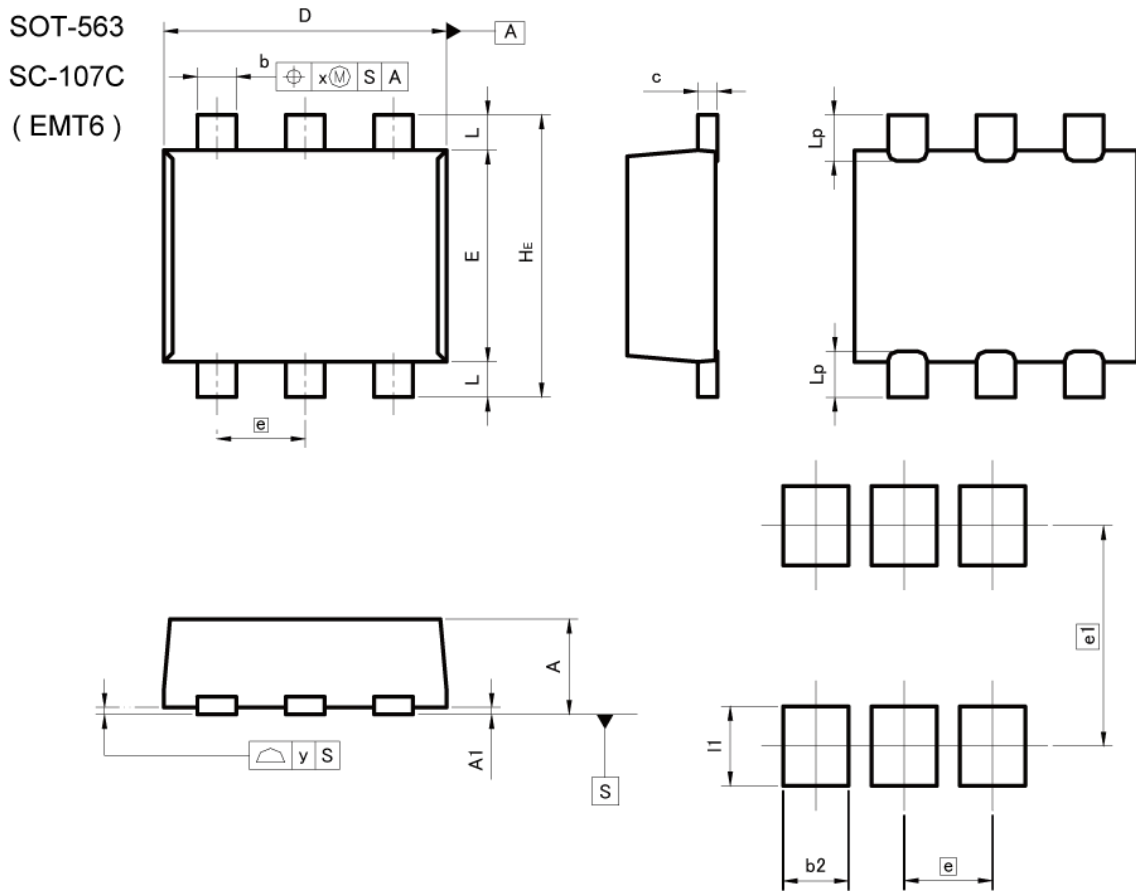


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current



●Dimensions



Pattern of terminal position areas
[Not a pattern of soldering pads]

| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.45 | 0.55 | 0.018 | 0.022 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| b | 0.17 | 0.27 | 0.007 | 0.011 |
| c | 0.08 | 0.18 | 0.003 | 0.007 |
| D | 1.50 | 1.70 | 0.059 | 0.067 |
| E | 1.10 | 1.30 | 0.043 | 0.051 |
| e | 0.50 | | 0.020 | |
| HE | 1.50 | 1.70 | 0.059 | 0.067 |
| L | 0.10 | 0.30 | 0.004 | 0.012 |
| Lp | - | 0.35 | - | 0.014 |
| x | - | 0.10 | - | 0.004 |
| y | - | 0.10 | - | 0.004 |

| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| b2 | - | 0.37 | - | 0.015 |
| e1 | 1.25 | | 0.049 | |
| I1 | - | 0.45 | - | 0.018 |

Dimension in mm/inches

●Dimensions



| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.80 | 1.00 | 0.031 | 0.039 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| A3 | 0.25 | | 0.010 | |
| b | 0.15 | 0.30 | 0.006 | 0.012 |
| c | 0.10 | 0.20 | 0.004 | 0.008 |
| D | 1.90 | 2.10 | 0.075 | 0.083 |
| E | 1.15 | 1.35 | 0.045 | 0.053 |
| e | 0.65 | | 0.026 | |
| HE | 2.00 | 2.20 | 0.079 | 0.087 |
| L1 | 0.20 | 0.50 | 0.008 | 0.020 |
| Lp | 0.25 | 0.55 | 0.010 | 0.022 |
| Q | 0.10 | 0.30 | 0.004 | 0.012 |
| x | - | 0.10 | - | 0.004 |
| y | - | 0.10 | - | 0.004 |

| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| b2 | - | 0.40 | - | 0.016 |
| e1 | 1.55 | | 0.061 | |
| I1 | - | 0.65 | - | 0.026 |

Dimension in mm/inches

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|-----------|-----------|------------|-----------|
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| CLASS IV | | CLASS III | |

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 - Use of the Products in places subject to dew condensation
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