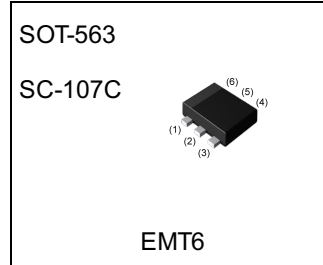


| Parameter     | DTr1 and DTr2 |
|---------------|---------------|
| $V_{CC}$      | 50V           |
| $I_{C(MAX.)}$ | 100mA         |
| $R_1$         | 4.7k $\Omega$ |
| $R_2$         | 47k $\Omega$  |

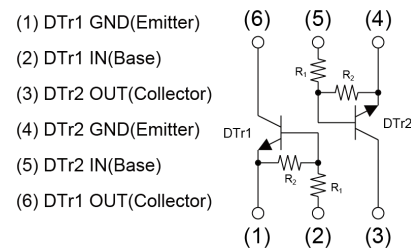
●Outline



●Features

- 1) Two DTC143Z chips in a EMT6 package.
- 2) Mounting possible with EMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●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 |
|-----------|----------------|--------------|-------------|----------------|-----------------|---------------------------|---------|
| EMH25 FHA | SOT-563 (EMT6) | 1616         | T2R         | 180            | 8               | 8000                      | H25     |

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

<For DTr1 and DTr2 in common>

| Parameter                    | Symbol                     | Values      | Unit             |
|------------------------------|----------------------------|-------------|------------------|
| Supply voltage               | $V_{CC}$                   | 50          | V                |
| Input voltage                | $V_{IN}$                   | -5 to 30    | V                |
| Output current               | $I_O$                      | 100         | mA               |
| Collector current            | $I_{C(MAX)}$ <sup>*1</sup> | 100         | mA               |
| Power dissipation            | $P_D$ <sup>*2*3</sup>      | 150         | mW/TOTAL         |
| 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. |            |
| Input voltage        | $V_{I(off)}$        | $V_{CC} = 5V, I_O = 100\mu\text{A}$                  | -      | -    | 0.5  | V          |
|                      | $V_{I(on)}$         | $V_O = 0.3V, I_O = 5\text{mA}$                       | 1.3    | -    | -    |            |
| Output voltage       | $V_{O(on)}$         | $I_O = 5\text{mA}, I_I = 0.25\text{mA}$              | -      | 100  | 300  | mV         |
| Input current        | $I_I$               | $V_I = 5V$   | -      | -    | 1.8  | mA         |
| Output current       | $I_{O(off)}$        | $V_{CC} = 50V, V_I = 0V$                             | -      | -    | 500  | nA         |
| DC current gain      | $G_I$               | $V_O = 5V, I_O = 10\text{mA}$                        | 80     | -    | -    | -          |
| Input resistance     | $R_1$               | -  | 3.29   | 4.7  | 6.11 | k $\Omega$ |
| Resistance ratio     | $R_2/R_1$           | -  | 8      | 10   | 12   | -          |
| Transition frequency | $f_T$ <sup>*1</sup> | $V_{CE} = 10V, I_E = -5\text{mA}, f = 100\text{MHz}$ | -      | 250  | -    | MHz        |

\*1 Characteristics of built-in transistor.

\*2 Each terminal mounted on a reference land.

\*3 120mW per element must not be exceeded.

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

Fig.1 Input Voltage vs. Output Current (ON Characteristics)

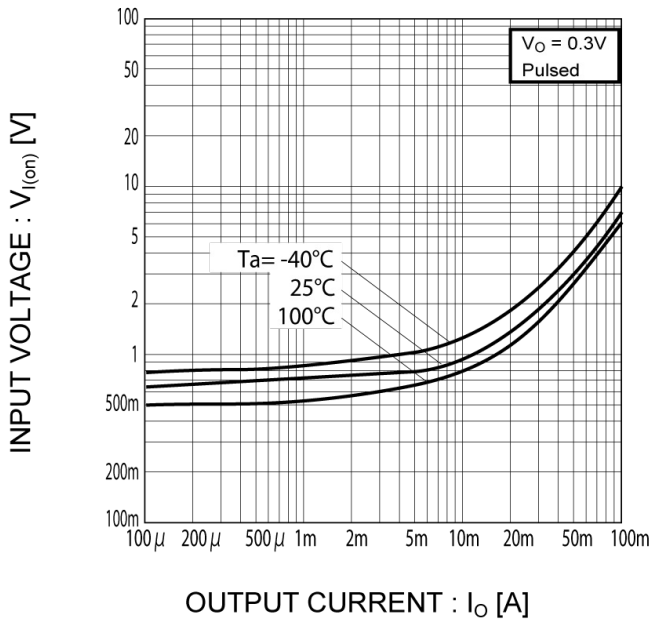


Fig.2 Output Current vs. Input Voltage (OFF Characteristics)

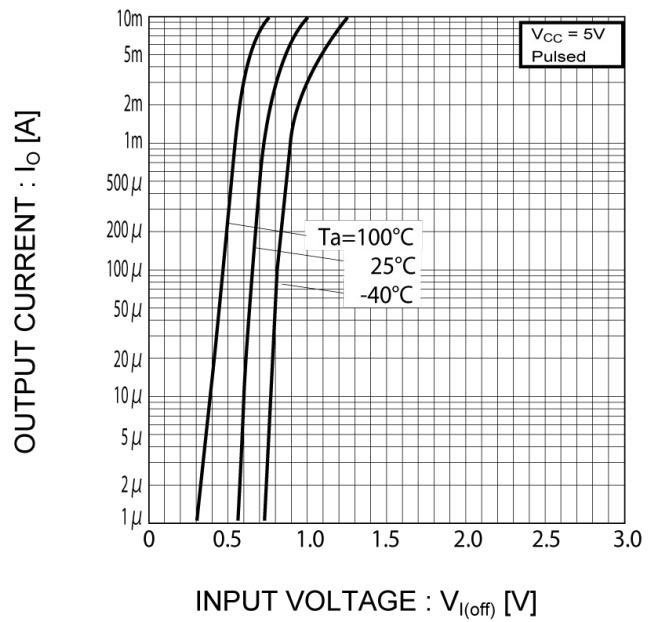


Fig.3 Output Current vs. Output Voltage

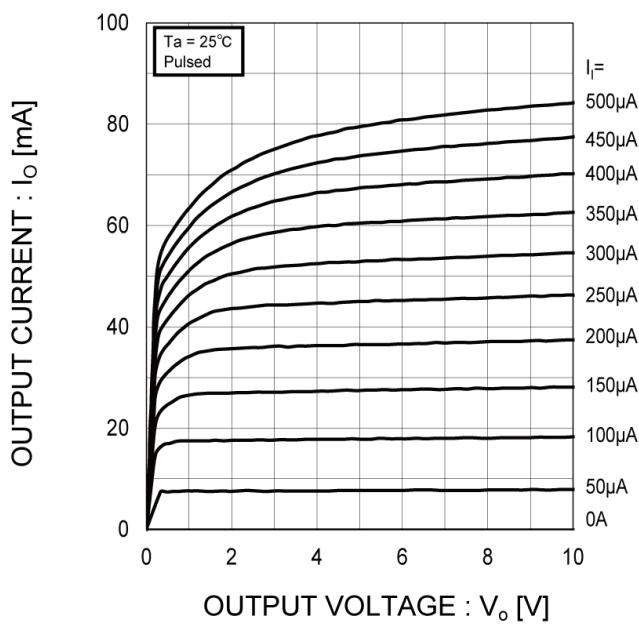
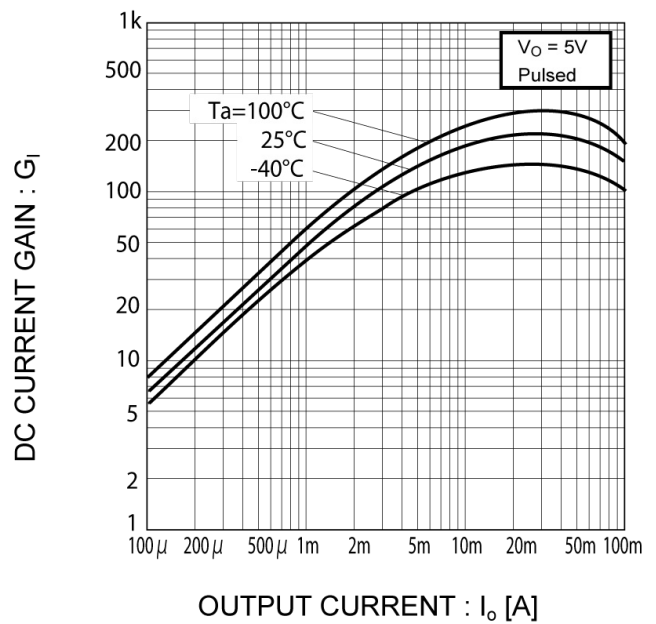


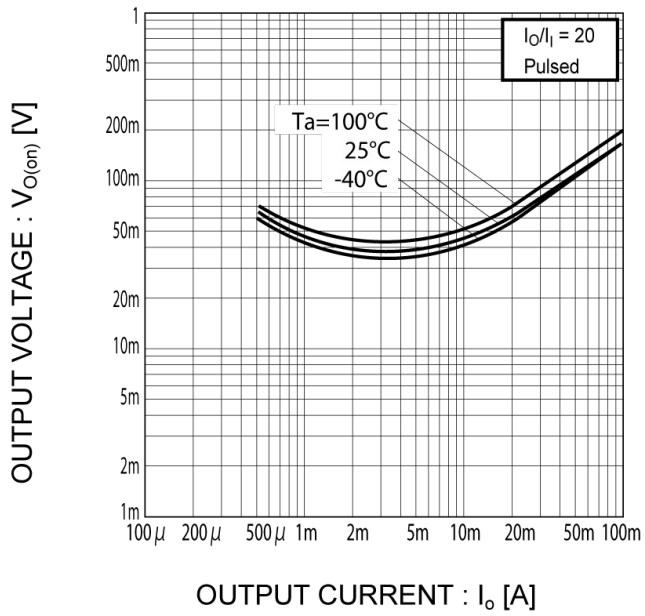
Fig.4 DC Current Gain vs. Output Current



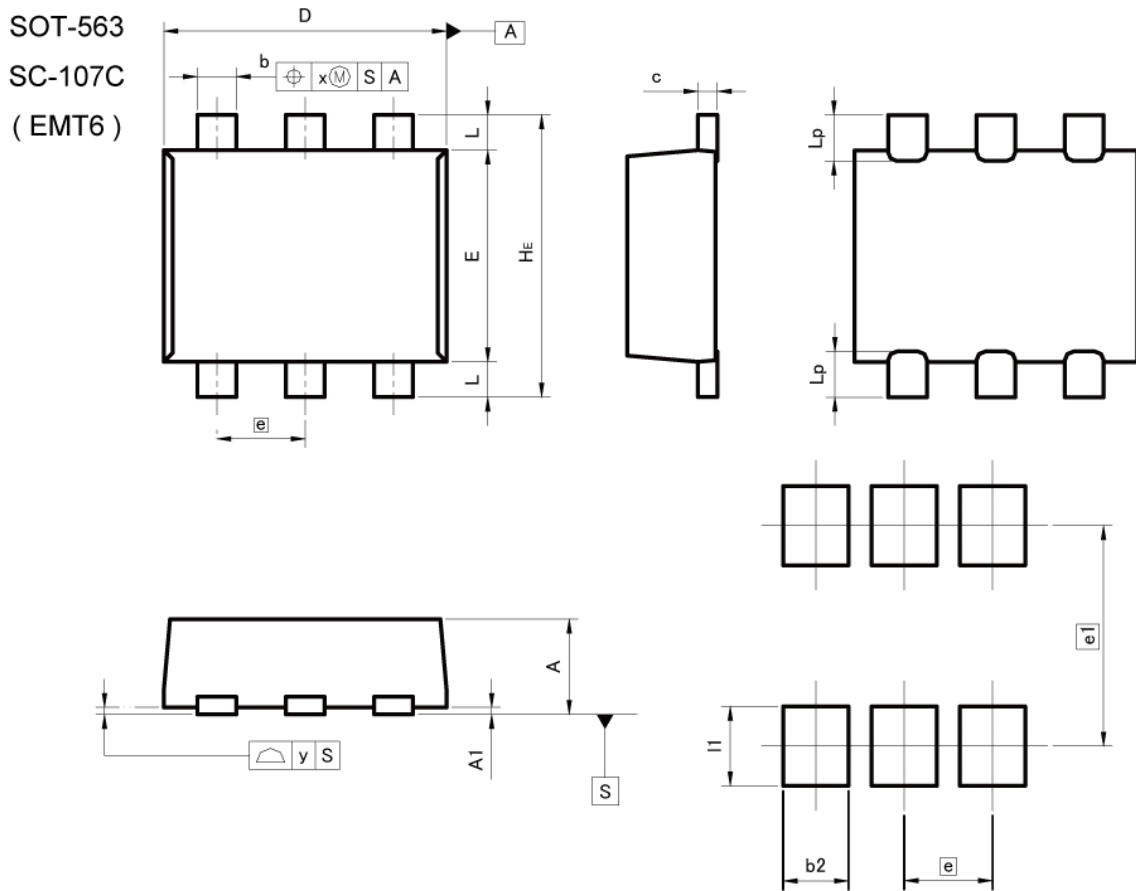
**● Electrical characteristic curves ( $T_a = 25^\circ\text{C}$ )**

&lt;For DTr1 and DTr2 in common&gt;

Fig.5 Output Voltage vs. Output 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

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| JAPAN     | USA       | EU         | CHINA     |
|-----------|-----------|------------|-----------|
| CLASS III | CLASS III | CLASS II b | CLASS III |
| CLASS IV  |           | CLASS III  |           |

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  - [d] Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
  - [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
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7. De-rate Power Dissipation depending on ambient temperature. When used in sealed area, confirm that it is the use in the range that does not exceed the maximum junction temperature.
8. Confirm that operation temperature is within the specified range described in the product specification.
9. ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

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2. In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

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This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

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1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
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  - [b] the temperature or humidity exceeds those recommended by ROHM
  - [c] the Products are exposed to direct sunshine or condensation
  - [d] the Products are exposed to high Electrostatic
2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

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