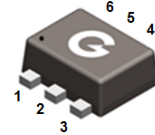
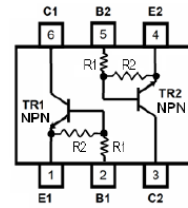


### Features

- Two DTC144E chip in SOT-563 package
- Transistor elements are independent, eliminating interference
- Mounting cost and area can be cut in half
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

### Mechanical Data

- Case: SOT-563
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-563

### Ordering Information

| Part Number | Package | Shipping Quantity      | Marking Code |
|-------------|---------|------------------------|--------------|
| TEMH2       | SOT-563 | 3000 pcs / Tape & Reel | H2           |

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

| Symbol               | Parameter            | Value      |            | Unit |
|----------------------|----------------------|------------|------------|------|
|                      |                      | Tr1        | Tr2        |      |
| V <sub>CC</sub>      | Supply Voltage       | 50         | 50         | V    |
| V <sub>IN</sub>      | Input Voltage        | -10 to +40 | -10 to +40 | V    |
| I <sub>O</sub>       | Output Current       | 30         | 30         | mA   |
| I <sub>C(MAX.)</sub> | Collector Current *1 | 100        | 100        | mA   |

### Thermal Characteristics

| Parameter                            | Symbol           | Value      | Unit |
|--------------------------------------|------------------|------------|------|
| Power Dissipation *2, 3              | P <sub>D</sub>   | 150        | mW   |
| Operating Junction Temperature Range | T <sub>J</sub>   | -55 ~ +150 | °C   |
| Storage Temperature Range            | T <sub>STG</sub> | -55 ~ +150 | °C   |

### Electrical Characteristics-TR1 and TR2 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                 | Symbol       | Test Condition                              | Min. | Typ. | Max. | Unit      |
|---------------------------|--------------|---------------------------------------------|------|------|------|-----------|
| Input Voltage             | $V_{I(off)}$ | $V_{CC} = 5V, I_O = 100\mu A$               | 0.5  | -    | -    | V         |
|                           | $V_{I(on)}$  | $V_O = 0.3V, I_O = 2mA$                     | -    | -    | 3    | V         |
| Output Voltage            | $V_{O(on)}$  | $I_O = 10mA, I_I = 0.5mA$                   | -    | -    | 0.3  | V         |
| Input Current             | $I_I$        | $V_I = 5V$                                  | -    | -    | 180  | $\mu A$   |
| Output Current            | $I_{O(off)}$ | $V_{CC} = 50V, V_I = 0V$                    | -    | -    | 0.5  | $\mu A$   |
| DC Current Gain           | $G_I$        | $V_O = 5V, I_O = 5mA$                       | 68   | -    | -    | -         |
| Input Resistor            | $R_I$        |                                             | 32.9 | 47   | 61.1 | $k\Omega$ |
| Resistance Ratio          | $R_2/R_1$    |                                             | 0.8  | 1    | 1.2  |           |
| Gain-Bandwidth Product *1 | $f_T$        | $V_{CE} = 10V, I_E = -5mA,$<br>$f = 100MHz$ | -    | 250  | -    | MHz       |

Notes:

1. Characteristics of built-in transistor
2. Each terminal mounted on a reference land
3. 120mW per element must not be exceeded

Ratings and Characteristics Curves-TR1 and TR2 (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

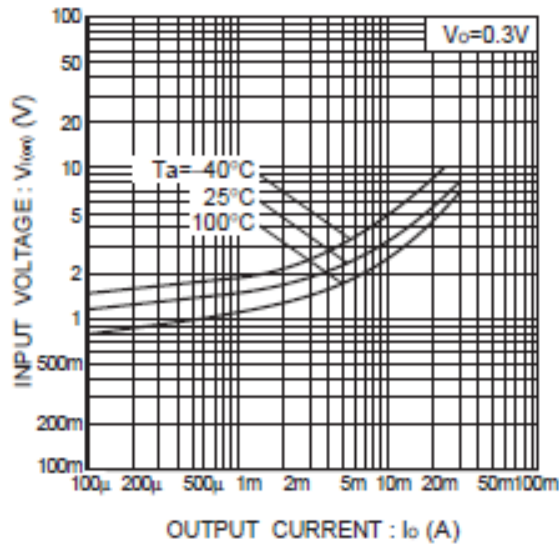


Fig.1 Input voltage vs. output current (ON characteristics)

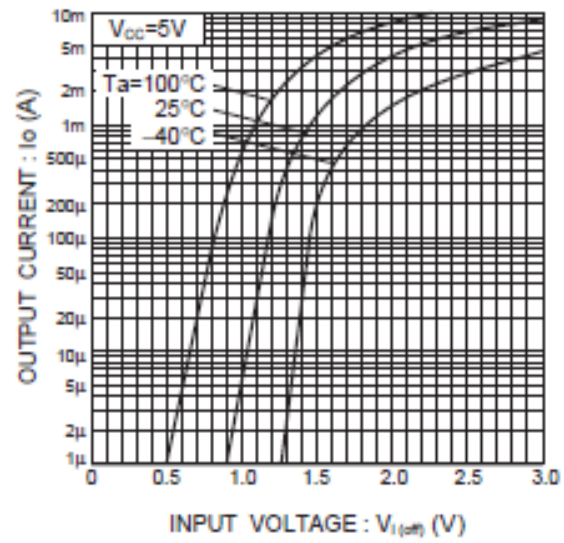


Fig.2 Output current vs. input voltage (OFF characteristics)

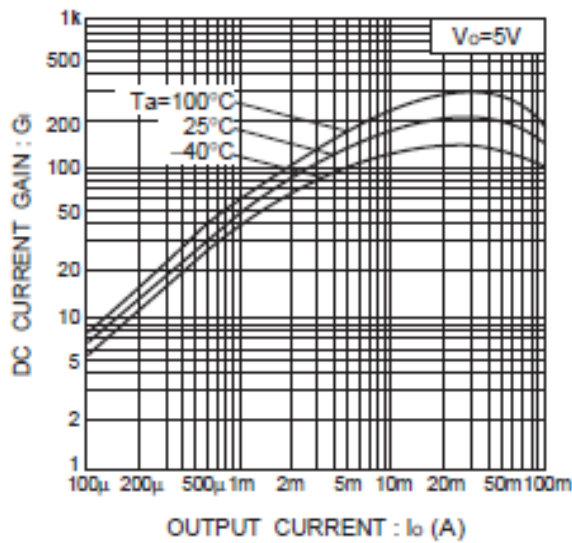


Fig.3 DC current gain vs. output current

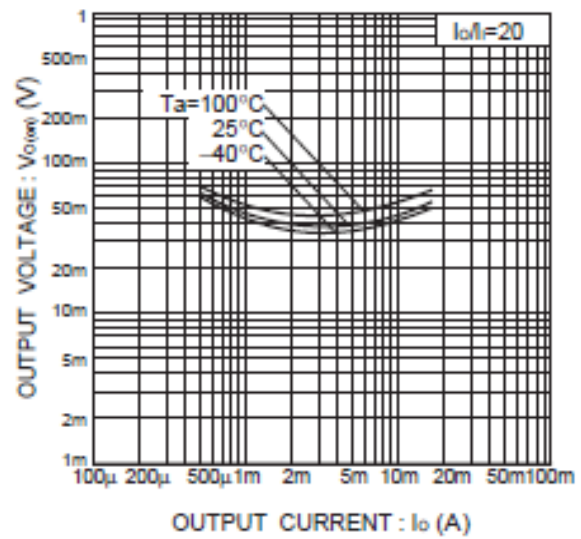
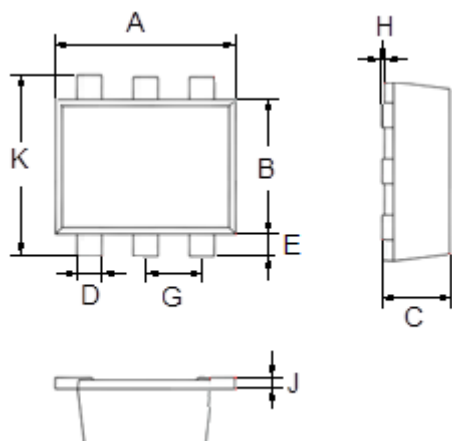


Fig.4 Output voltage vs. output current

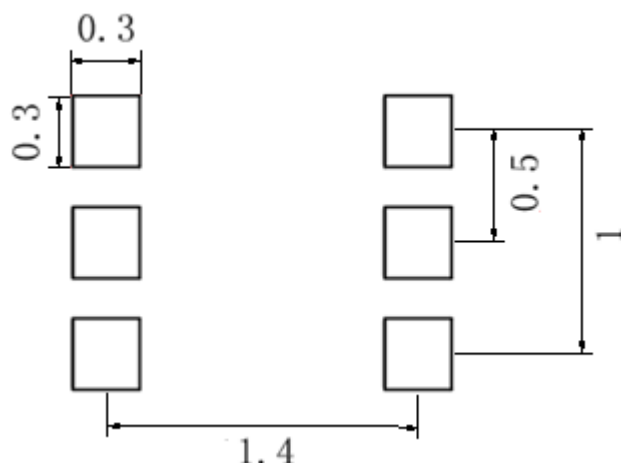
## Package Outline Dimensions (Unit: mm)



| SOT-563   |       |       |
|-----------|-------|-------|
| Dimension | Min.  | Max.  |
| A         | 1.500 | 1.700 |
| B         | 1.100 | 1.300 |
| C         | 0.525 | 0.600 |
| D         | 0.170 | 0.270 |
| E         | 0.100 | 0.300 |
| G         | 0.450 | 0.550 |
| H         | 0.000 | 0.050 |
| J         | 0.090 | 0.160 |
| K         | 1.500 | 1.700 |

## Package Outline Dimensions (Unit: mm)

### SOT-563



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