

| Parameter | DTr1 and DTr2 |
|---------------|---------------|
| V_{CC} | 50V |
| $I_{C(MAX.)}$ | 100mA |
| R_1 | 2.2k Ω |
| R_2 | 47k Ω |

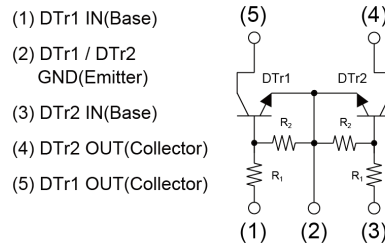
●Features

- 1)Two DTC123J chips in a EMT or UMT package.
- 2)Mounting cost and area can be cut in half.

●Outline

| SOT-553 | SOT-353 |
|-----------------|------------------|
| | |
| EMG11 (EMT5) | UMG11N (UMT5) |

●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 |
|----------|----------------|--------------|-------------|----------------|-----------------|---------------------------|---------|
| EMG11 | SOT-553 (EMT5) | 1616 | T2R | 180 | 8 | 8000 | G11 |
| UMG11N | SOT-353 (UMT5) | 2021 | TR | 180 | 8 | 3000 | G11 |

● **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 12 | V |
| Output current | | I_O | 100 | mA |
| Collector current | | $I_{C(MAX)}^{*1}$ | 100 | mA |
| Power dissipation | EMG11 | P_D^{*2*3} | 150 | mW/Total |
| | UMG11N | P_D^{*2*3} | 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. | |
| Input voltage | $V_{I(off)}$ | $V_{CC} = 5V, I_O = 100\mu\text{A}$ | - | - | 0.5 | V |
| | $V_{I(on)}$ | $V_O = 0.3V, I_O = 5\text{mA}$ | 1.1 | - | - | |
| Output voltage | $V_{O(on)}$ | $I_O = 5\text{mA}, I_I = 0.25\text{mA}$ | - | 100 | 300 | mV |
| Input current | I_I | $V_I = 5V$ | - | - | 3.6 | 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 | - | 1.54 | 2.2 | 2.86 | k Ω |
| Resistance ratio | R_2/R_1 | - | 17 | 21 | 26 | - |
| Transition frequency | f_T^{*1} | $V_{CE} = 10V, I_E = -5\text{mA}, f = 100\text{MHz}$ | - | 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)

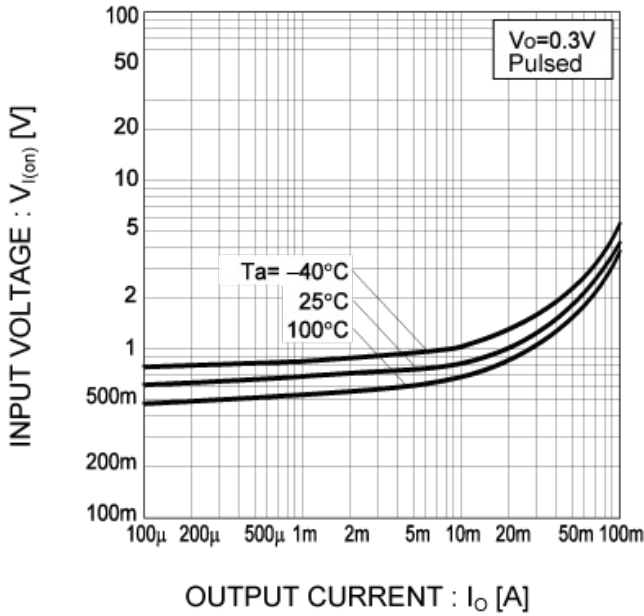


Fig.2 Output Current vs. Input Voltage
 (OFF Characteristics)

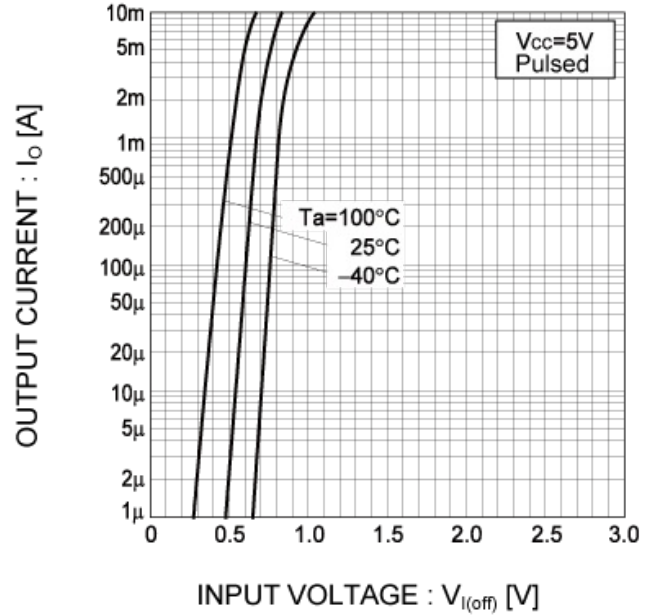


Fig.3 Output Current vs. Output Voltage

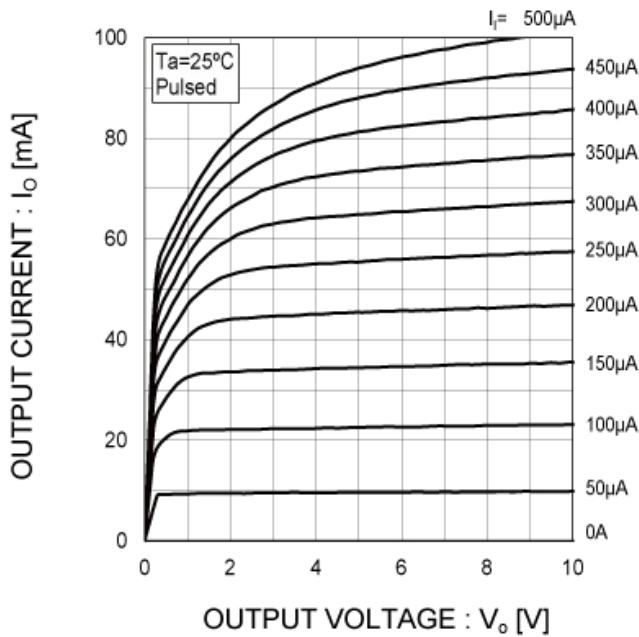
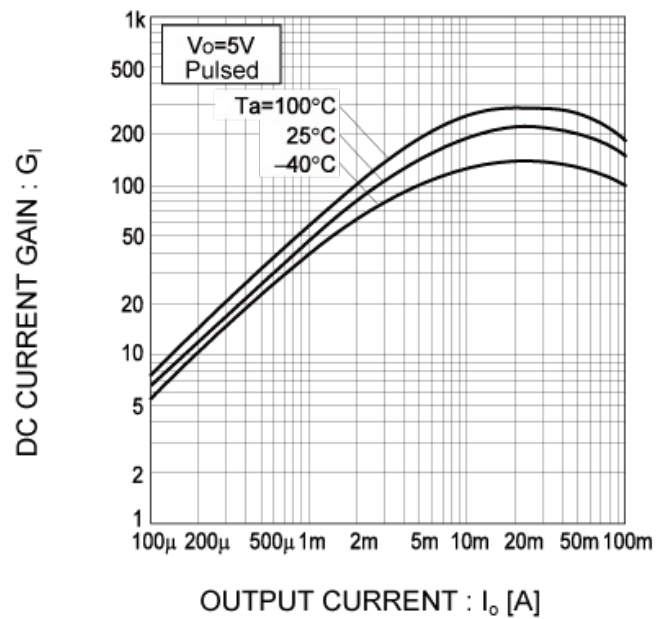


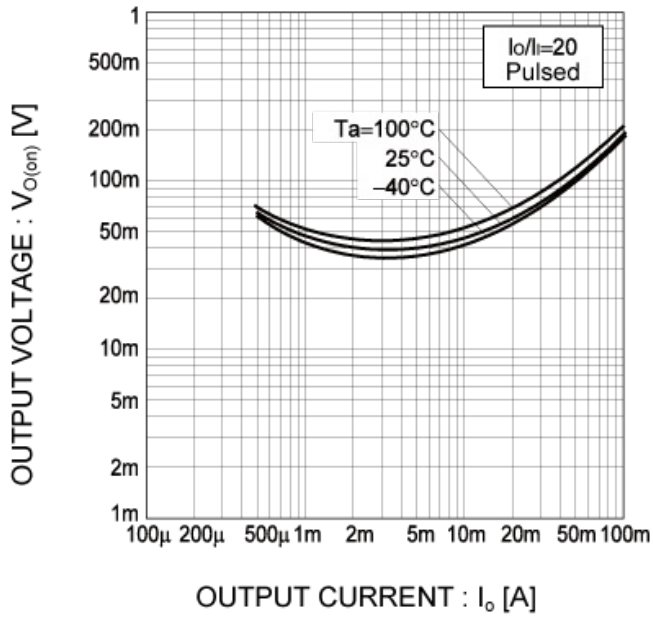
Fig.4 DC Current Gain vs. Output Current



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

<For DTr1 and DTr2 in common>

Fig.5 Output Voltage vs. Output Current



●Dimensions



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

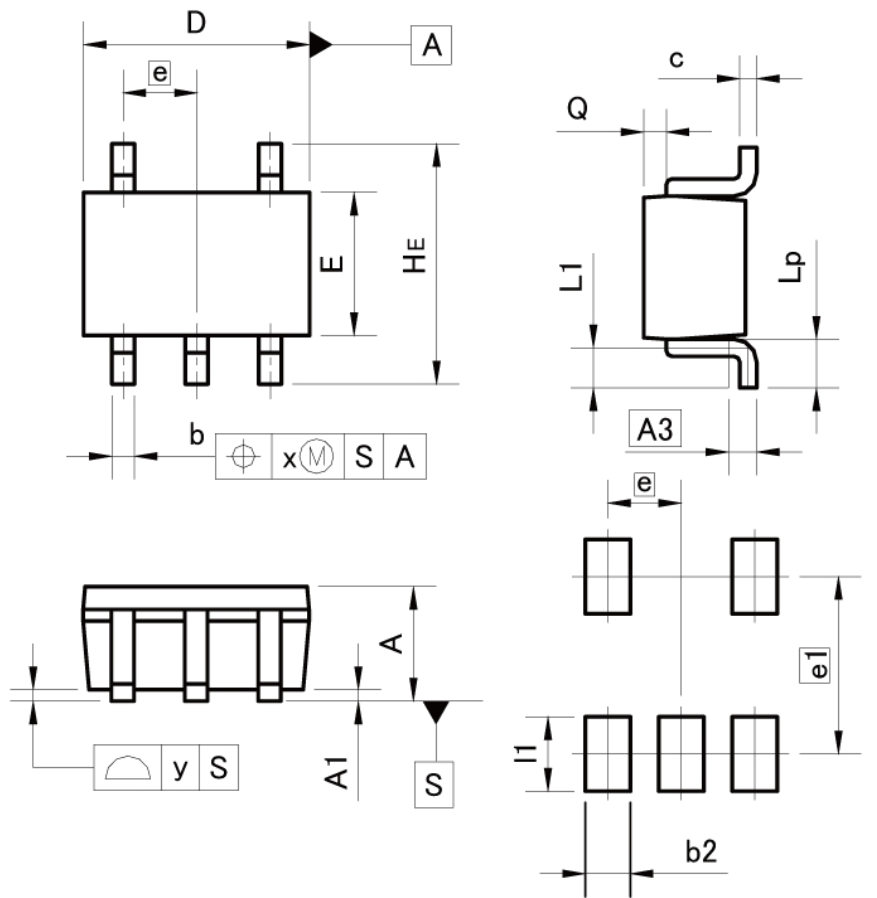
| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.45 | 0.55 | 0.018 | 0.022 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| b | 0.17 | 0.27 | 0.007 | 0.011 |
| c | 0.08 | 0.18 | 0.003 | 0.007 |
| D | 1.50 | 1.70 | 0.059 | 0.067 |
| E | 1.10 | 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 | |
| l1 | - | 0.45 | - | 0.018 |

Dimension in mm/inches

●Dimensions

SOT-353
SC-88A
(UMT5)



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

| 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 | |
| l1 | - | 0.65 | - | 0.026 |

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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 - Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
 - Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
 - Sealing or coating our Products with resin or other coating materials
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 - Use of the Products in places subject to dew condensation
- The Products are not subject to radiation-proof design.
- Please verify and confirm characteristics of the final or mounted products in using the Products.
- In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
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 - [d] the Products are exposed to high Electrostatic
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EMG11 - Web Page

[Distribution Inventory](#)

| | |
|-----------------------------|---------|
| Part Number | EMG11 |
| Package | EMT5 |
| Unit Quantity | 8000 |
| Minimum Package Quantity | 8000 |
| Packing Type | Taping |
| Constitution Materials List | inquiry |
| RoHS | Yes |