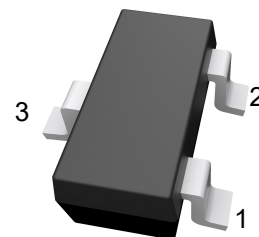


Features

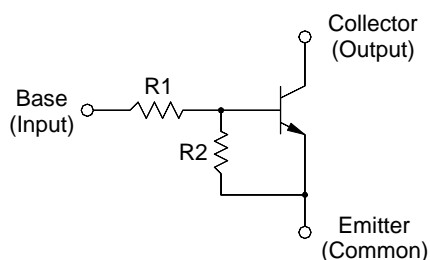
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

SOT-23-3



1.Base 2.Emitter 3.Collector

Equivalent Circuit



Resistor Values/Marking Code

| Type | R1 (K Ω) | R2 (K Ω) | Marking Code |
|-----------|------------------|------------------|--------------|
| DTC143ESC | 4.7 | 4.7 | 1CR |

Absolute Maximum Ratings (T_A=25°C)

| Parameter | Symbol | Value | Unit |
|---------------------------|------------------|-------------|------|
| Output Voltage | V _O | 50 | V |
| Input Voltage | V _I | 20,-10 | V |
| Output Current | I _O | 100 | mA |
| Maximum Power Dissipation | P _D | 200 | mW |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |



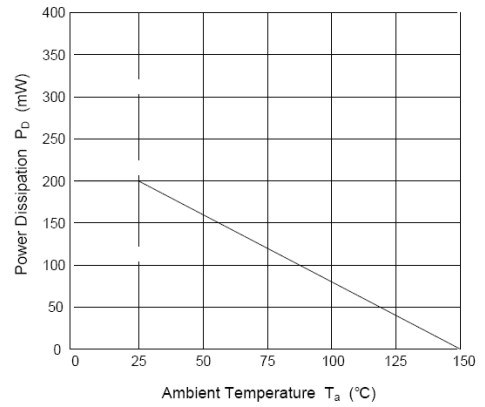
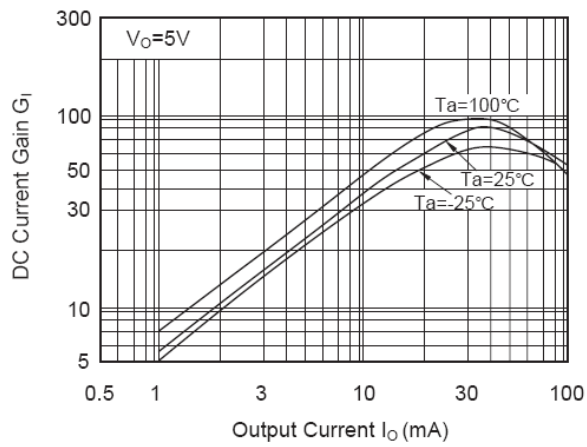
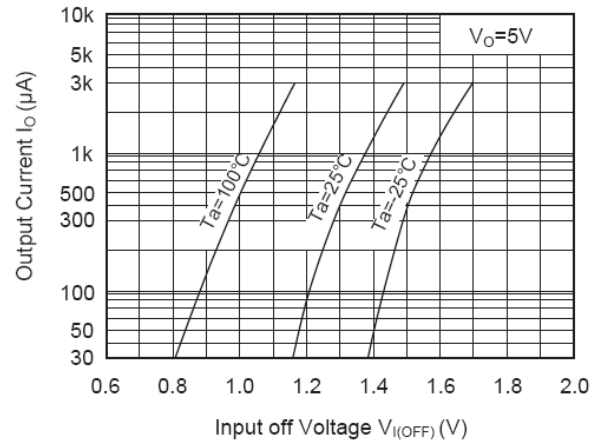
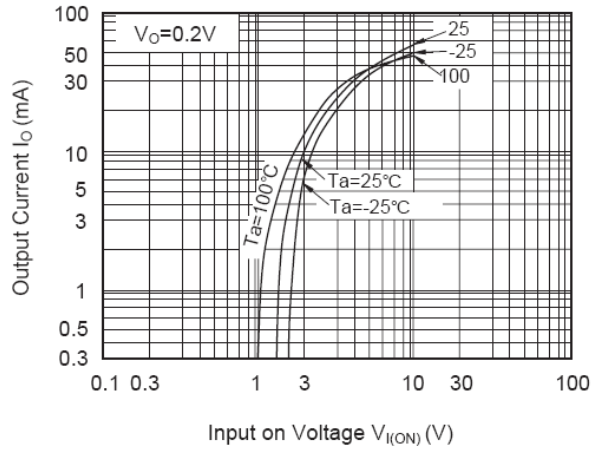
DTC143ESC

NPN Digital Transistor

Electrical Characteristics (T_A=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---------------------|------|------|------|------|
| DC Current Gain at V _O = 5 V, I _O = 10 mA | G _I | 30 | -- | -- | -- |
| Output Cutoff Current at V _O = 50 V | I _{O(OFF)} | -- | -- | 500 | nA |
| Input Current at V _I = 5 V | I _I | -- | -- | 1.8 | mA |
| Output Voltage (ON) at I _O = 10 mA, I _I = 0.5 mA | V _{O(ON)} | -- | -- | 0.3 | V |
| Input Voltage (ON) at V _O = 0.2 V, I _O = 5 mA | V _{I(ON)} | -- | -- | 2 | V |
| Input Voltage (OFF) at V _O = 5 V, I _O = 0.1 mA | V _{I(OFF)} | 1 | -- | -- | V |
| Transition Frequency at V _O = -10 V, I _O = -5 mA | f _T | -- | 200 | -- | MHz |

Typical Characteristic Curves





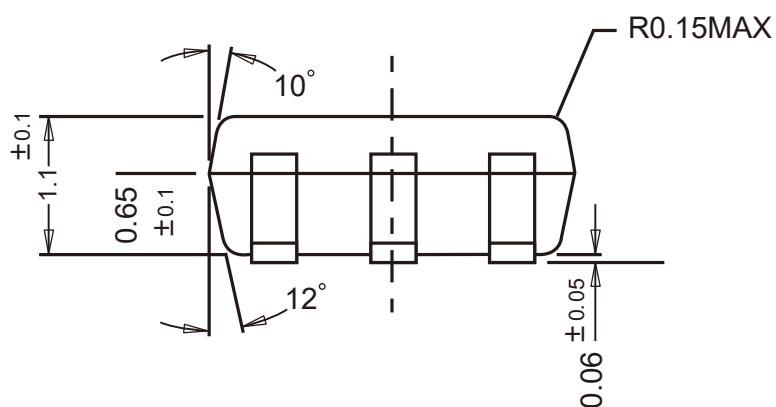
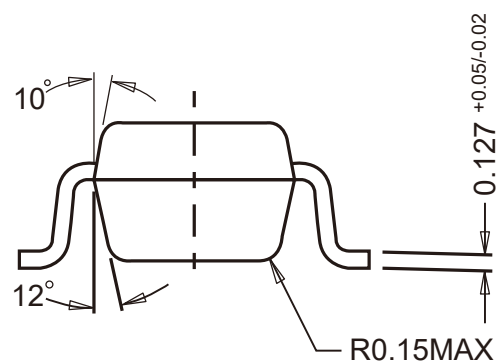
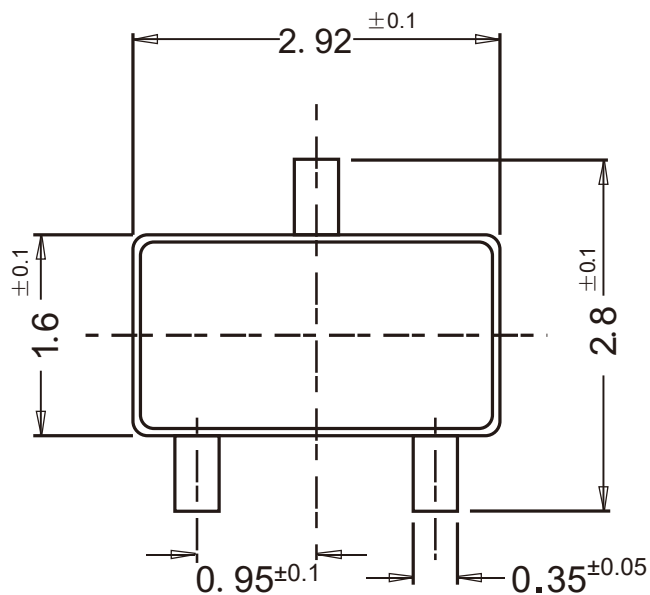
DTC143ESC

NPN Digital Transistor

Package Outline

SOT-23-3

Dimensions in mm



Ordering Information

| Device | Package | Shipping |
|-----------|----------|-----------------------|
| DTC143ESC | SOT-23-3 | 3,000PCS/Reel&7inches |

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

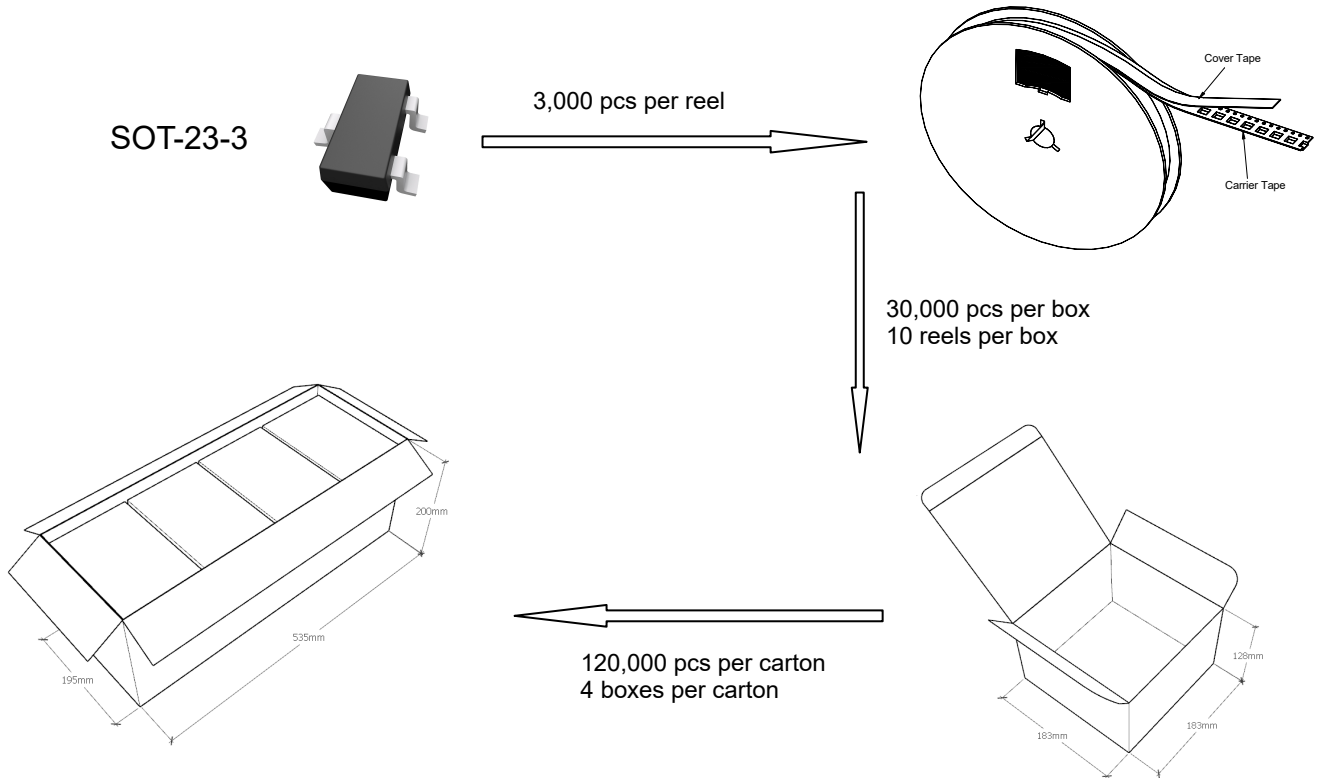
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

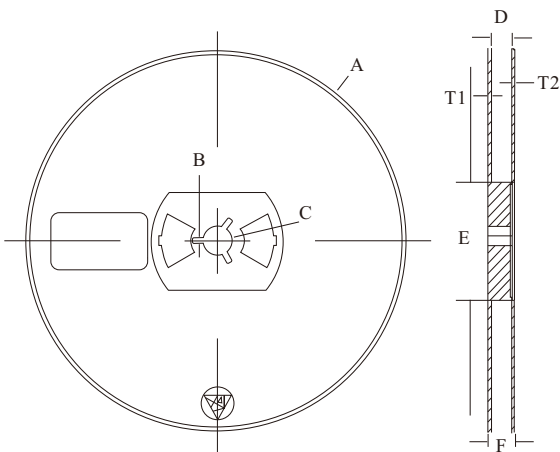
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

Package Specifications

- The method of packaging



◆ Embossed tape and reel data



| Symbol | Value (unit: mm) |
|--------|------------------|
| A | Ø 177.8±1 |
| B | 2.7±0.2 |
| C | Ø 13.5±0.2 |
| E | Ø 54.5±0.2 |
| F | 12.3±0.3 |
| D | 9.6+2/-0.3 |
| T1 | 1.0±0.2 |
| T2 | 1.2±0.2 |

Reel (7")

