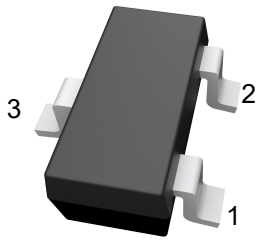
DTC144ESC
NPN Digtal Transistor

Features

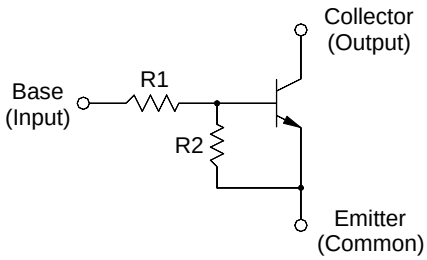
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

SOT-23-3



1.Base 2.Emitter 3.Collector

Equivalent Circuit



Resistor Values/Marking Code

Type	R1 (KΩ)	R2 (KΩ)	Marking Code
DTC144ESC	47	47	4CR

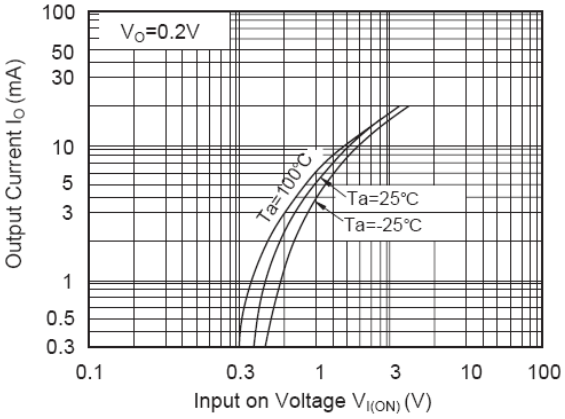
Absolute Maximum Ratings (T_A=25℃)

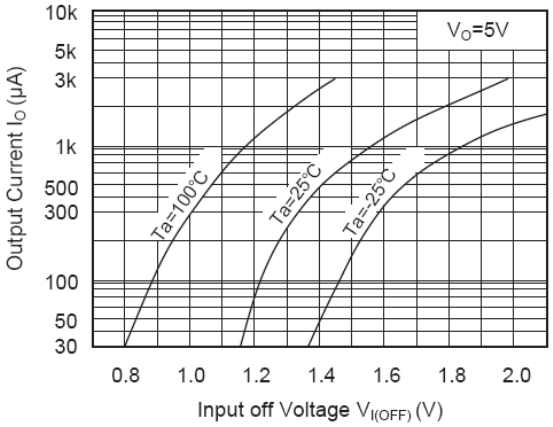
Parameter	Symbol	Value	Unit
Output Voltage	V_O	50	V
Input Voltage	V_I	40,-10	V
Output Current	I_O	100	mA
Maximum Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

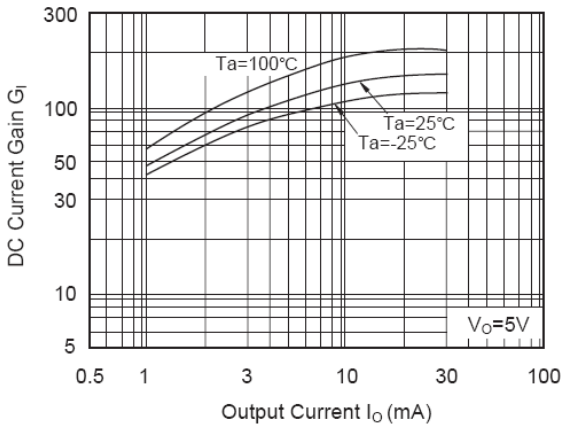
Electrical Characteristics (T_A=25℃)

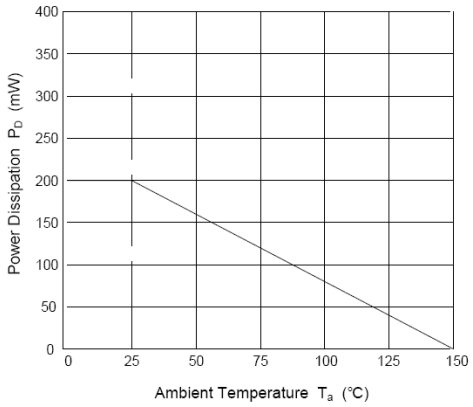
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_O = 5 V, I_O = 10 mA	G_I	80	--	--	--
Output Cutoff Current at V_O = 50 V	$I_{O(OFF)}$	--	--	500	nA
Input Current at V_I = 5 V	I_I	--	--	0.18	mA
Output Voltage (ON) at I_O = 10 mA, I_I = 0.5 mA	$V_{O(ON)}$	--	--	0.3	V
Input Voltage (ON) at V_O = 0.2 V, I_O = 5 mA	$V_{I(ON)}$	--	--	5	V
Input Voltage (OFF) at V_{CC} = 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





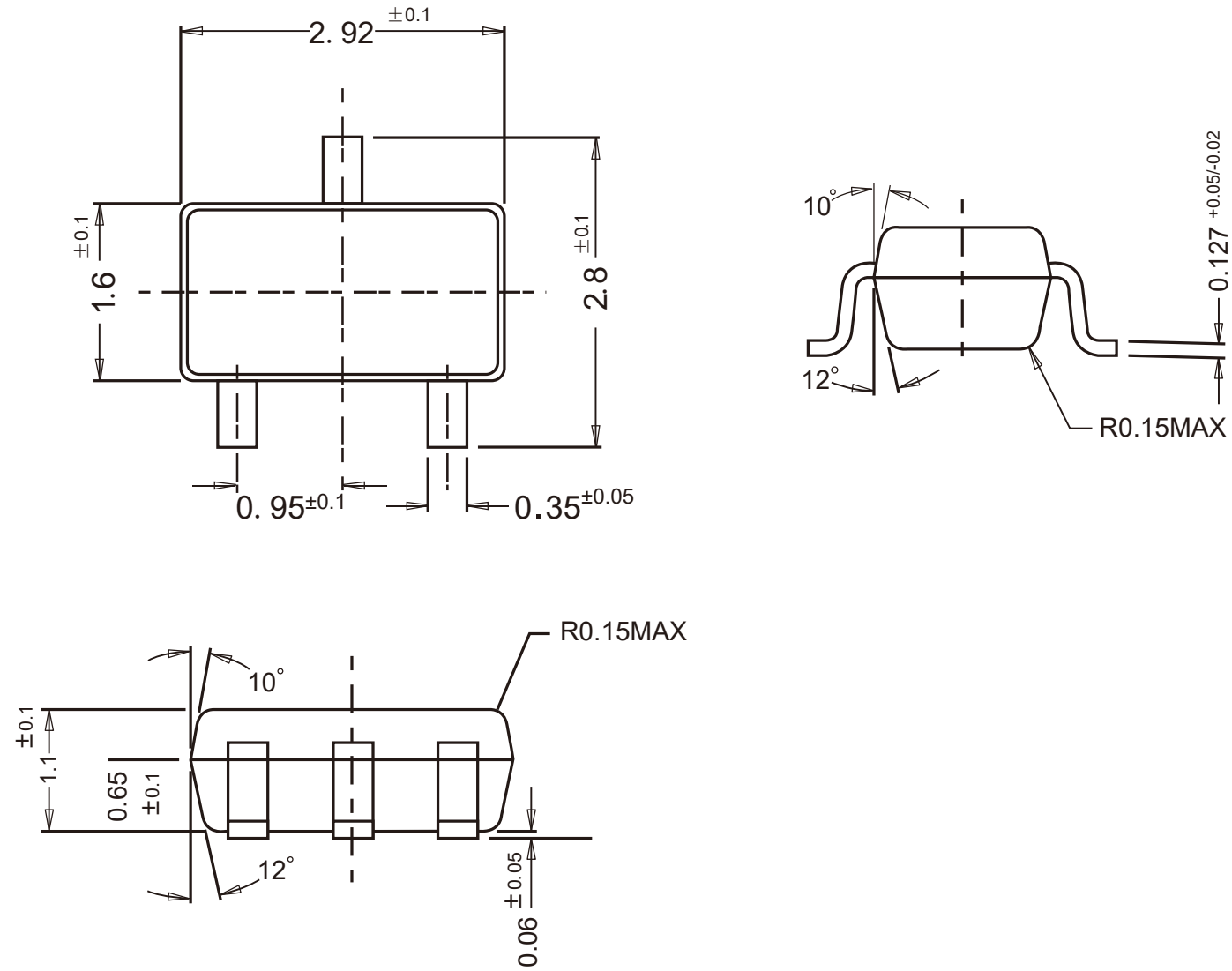




Package Outline

SOT-23-3

Dimensions in mm

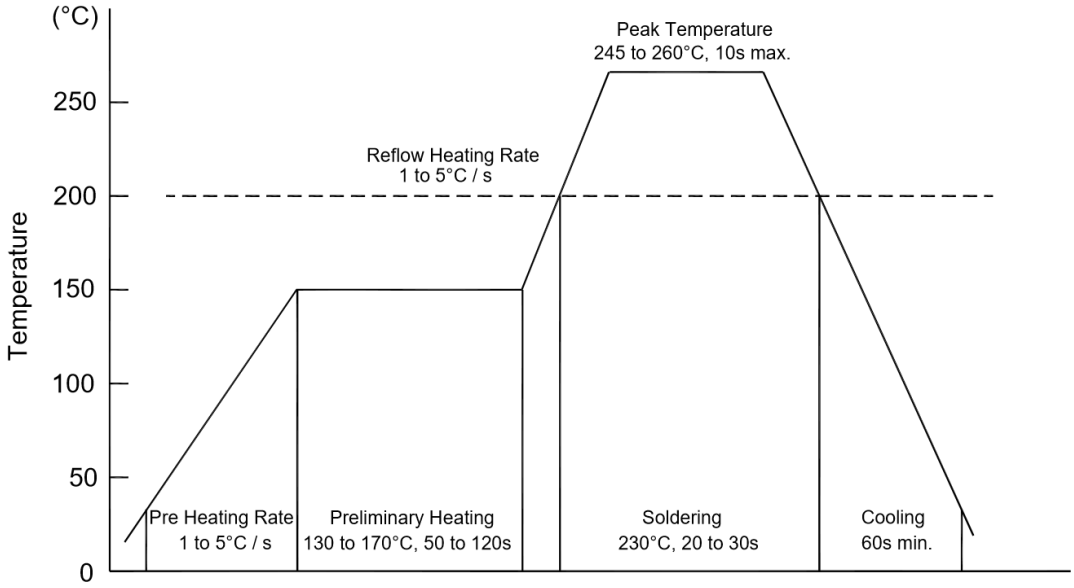


Ordering Information

Device	Package	Shipping
DTC144ESC	SOT-23-3	3,000PCS/Reel&7inches

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ^{O}C. If peak temperature is below 245 ^{O}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

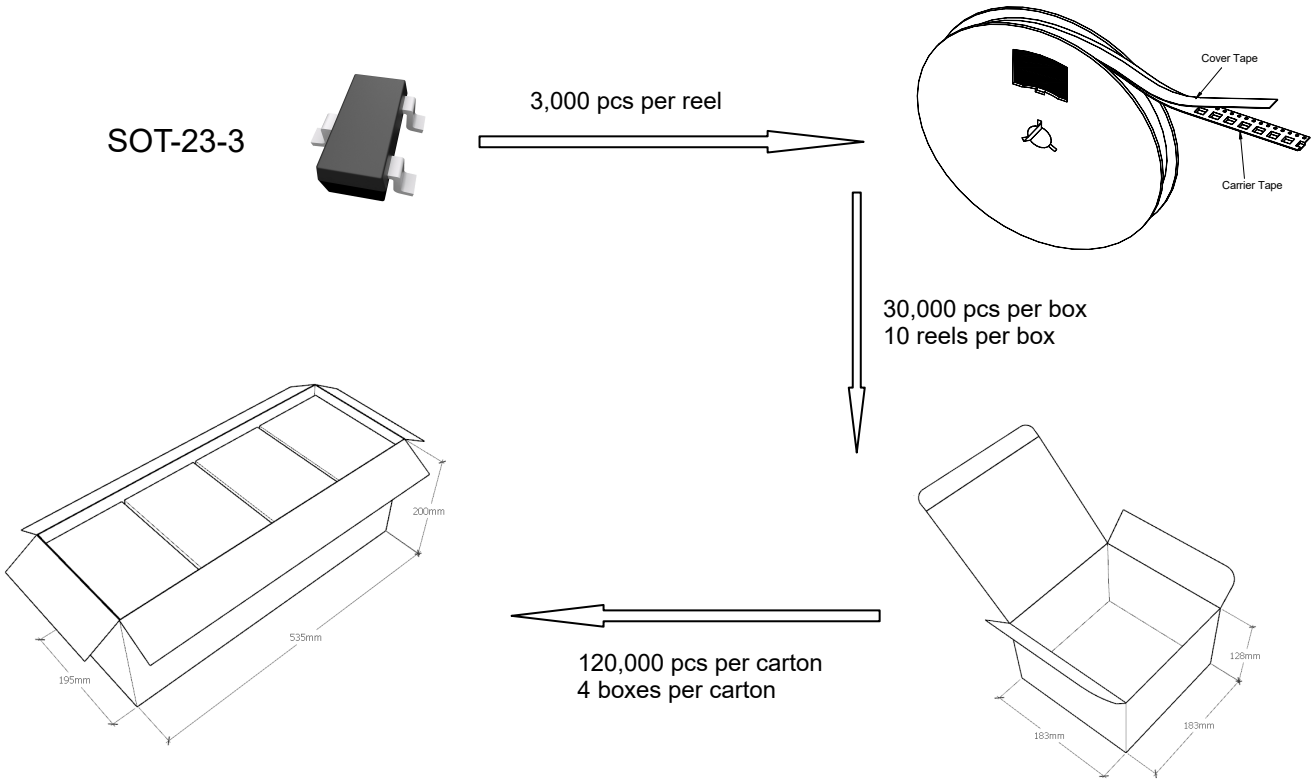
- Temperature: 370 ^{O}C
- Time: 3s max.
- Times: one time

◆ Storage conditions

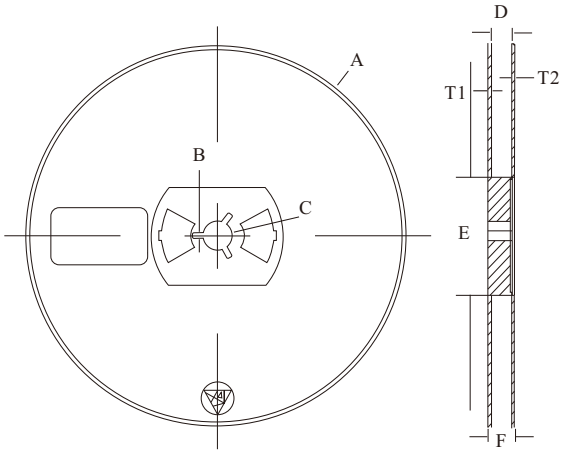
- **Temperature**
  5 to 40 ^{O}C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

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")