

# DTC144T

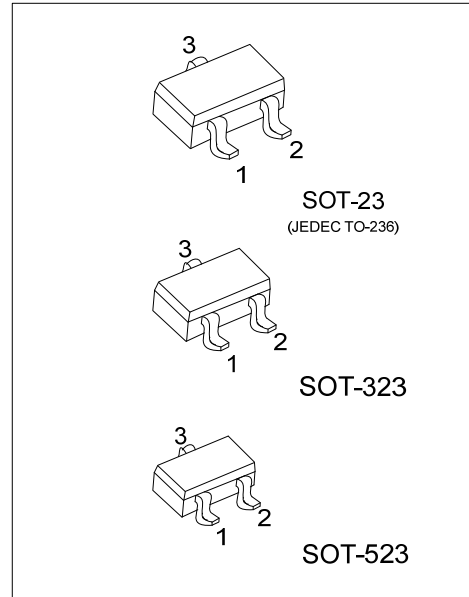
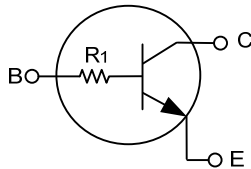
## NPN SILICON TRANSISTOR

### NPN DIGITAL TRANSISTOR (BUILT-IN BIAS RESISTORS)

#### ■ FEATURES

- \* Built-in bias resistors that implies easy ON/OFF applications.
- \* The bias resistors are thin-film resistors with complete isolation to allow negative input.

#### ■ EQUIVALENT CIRCUIT



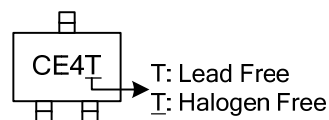
#### ■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC144TL-AE3-R	DTC144TG-AE3-R	SOT-23	B	E	C	Tape Reel
DTC144TL-AL3-R	DTC144TG-AL3-R	SOT-323	B	E	C	Tape Reel
DTC144TL-AN3-R	DTC144TG-AN3-R	SOT-523	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>DTC144TG-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### ■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CB0}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	100	mA
Collector Power Dissipation	SOT-523	150	mW
	SOT-23/SOT-323	200	mW
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

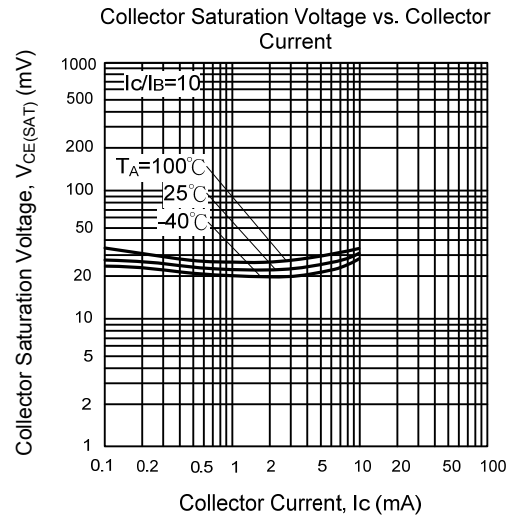
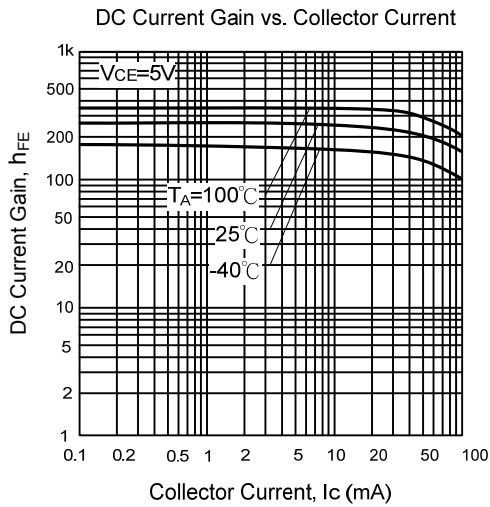
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C=50\mu\text{A}$	50			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1\text{mA}$	50			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=50\mu\text{A}$	5			V
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=50\text{V}$			0.5	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}$			0.5	$\mu\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=5\text{mA}, I_B=0.5\text{mA}$			0.3	V
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=1\text{mA}$	100	250	600	
Input Resistance	R1		32.9	47	61.1	K $\Omega$
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_E=-5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz

Note: Transition frequency of the device.

### ■ TYPICAL CHARACTERISTICS



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