



DTC143T

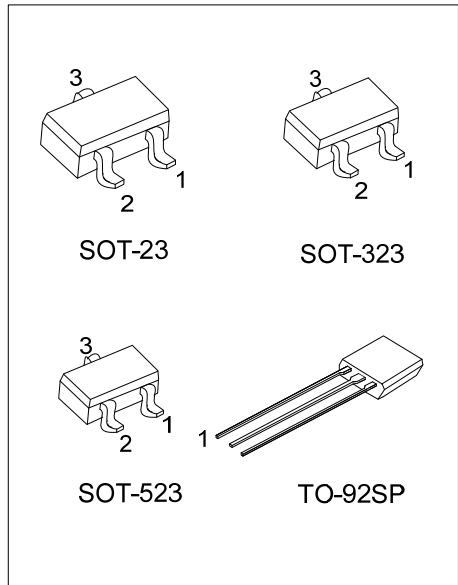
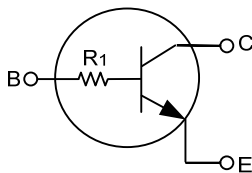
NPN SILICON TRANSISTOR

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



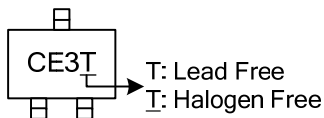
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC143TL-AE3-R	DTC143TG-AE3-R	SOT-23	E	B	C	Tape Reel
DTC143TL-AL3-R	DTC143TG-AL3-R	SOT-323	E	B	C	Tape Reel
DTC143TL-AN3-R	DTC143TG-AN3-R	SOT-523	E	B	C	Tape Reel
DTC143TL-T9S-K	DTC143TG-T9S-K	TO-92SP	E	C	B	Bulk

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

<p>DTC143TL-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) K: Bulk, R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523, T9S: TO-92SP</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ MARKING (For SOT Package)



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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	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	P_C	150	mW
	SOT-23/SOT-323		200	
	TO-92SP		550	
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.

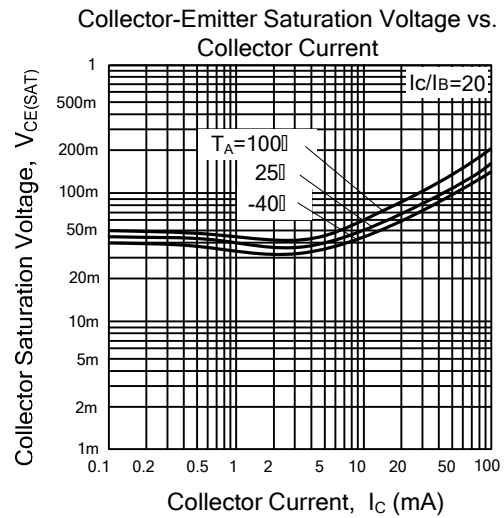
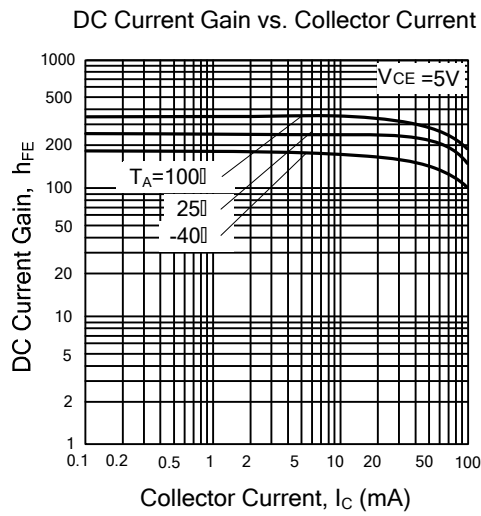
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 50\mu\text{A}$	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 Cut-off Current	I_{CBO}	$V_{CB}=50\text{V}$			0.5	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=4\text{V}$			0.5	μA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 5\text{mA}, I_B = 0.25\text{mA}$			0.3	V
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=1\text{mA}$	100	250	600	
Input Resistance	R_1		3.29	4.7	6.11	k Ω
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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