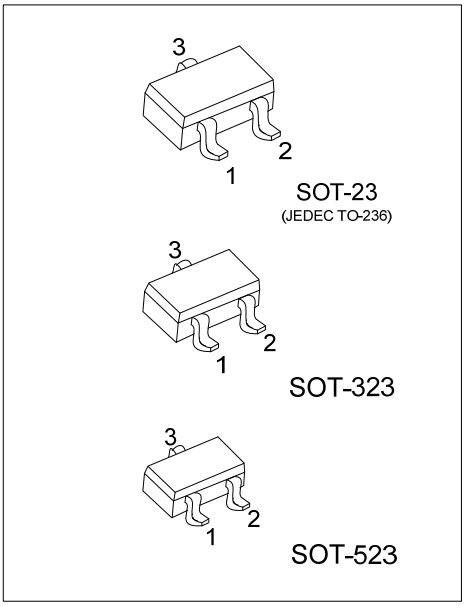
DTC113T

NPN SILICON TRANSISTOR

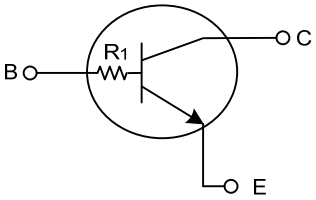
NPN DIGITAL TRANSISTOR (BUILT- IN BIAS RESISTORS)



■ 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



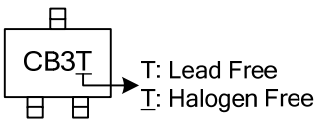
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC113TL-AE3-R	DTC113TG-AE3-R	SOT-23	B	E	C	Tape Reel
DTC113TL-AL3-R	DTC113TG-AL3-R	SOT-323	B	E	C	Tape Reel
DTC113TL-AN3-R	DTC113TG-AN3-R	SOT-523	B	E	C	Tape Reel

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

DTC113TG-AE3-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage		V_{CBO}	50	V
Emitter to Base Voltage		V_{EBO}	6	V
Collector to Emitter voltage		V_{CEO}	50	V
Collector Current		I_C	100	mA
Peak Collector Current		I_{CM}	200	mA
Collector Power Dissipation	SOT-23/SOT-323	P_C	200	mW
	SOT-523		150	
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

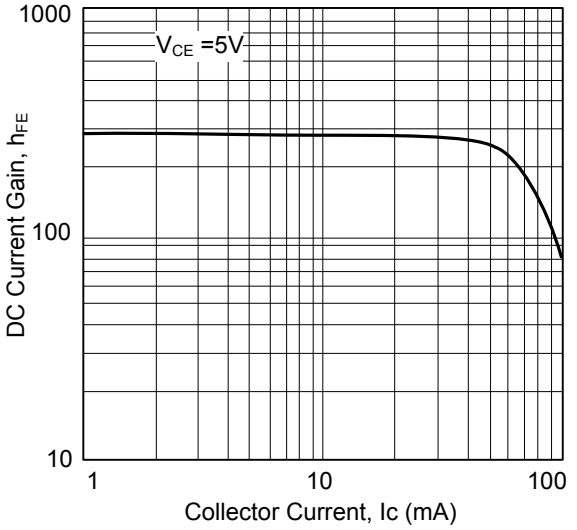
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

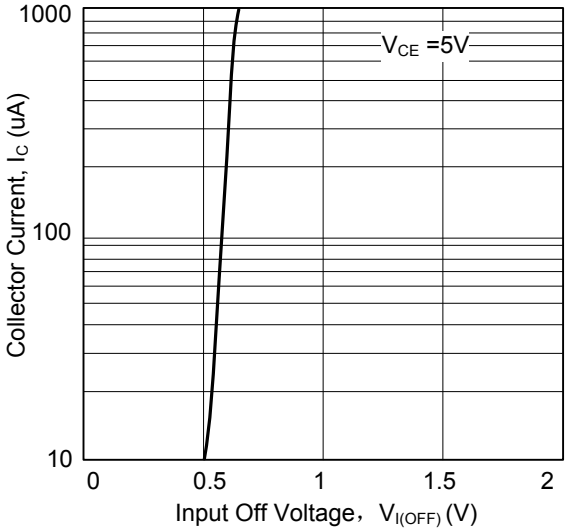
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=100μA, R_{BE}=∞	50			V
Collector Cut-off Current	I_{CBO}	V_{CB}=50V, I_E=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=1mA	100			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA			0.3	V
Input Resistance	R_1		0.7	1.0	1.3	kΩ
Current Gain Bandwidth Product	f_T	V_{CE}=6V, I_E=-10mA		200		MHz

■ TYPICAL CHARACTERISTICS

DC Forward Current Gain vs. Collector Current



Collector Current vs. Input Off Voltage



Input On Voltage vs. Collector Current