



DTC123Y

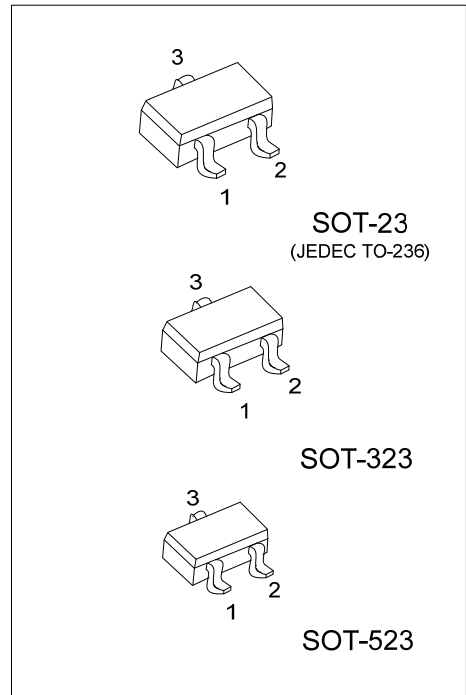
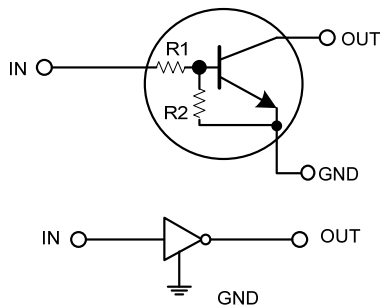
NPN SILICON TRANSISTOR

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



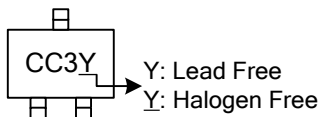
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC123YL-AE3-R	DTC123YG-AE3-R	SOT-23	I	G	O	Tape Reel
DTC123YL-AL3-R	DTC123YG-AL3-R	SOT-323	I	G	O	Tape Reel
DTC123YL-AN3-R	DTC123YG-AN3-R	SOT-523	I	G	O	Tape Reel

Note: Pin Assignment: I: IN G: GND O: OUT

<p>DTC123YG-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 RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	50	V
Input Voltage		V_{IN}	-5 ~ +12	V
Output Current		I_{OUT}	100	mA
		$I_{C(MAX)}$	100	mA
Power Dissipation	SOT-23/SOT-323	P_D	200	mW
	SOT-523		150	mW
Storage Temperature		T_J	+150	$^{\circ}\text{C}$
Junction Temperature		T_{STG}	-55~+150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

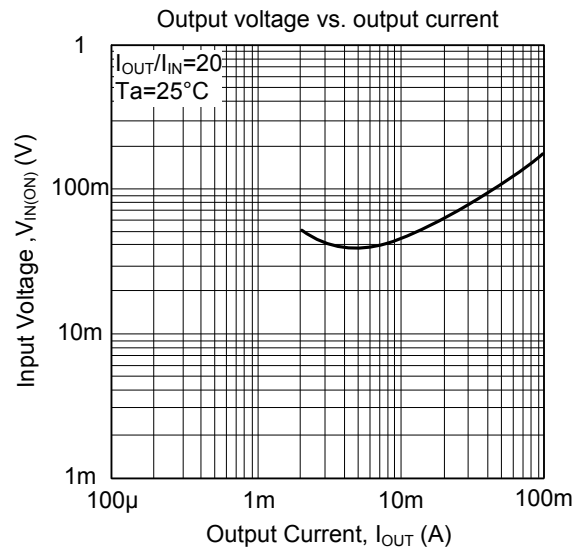
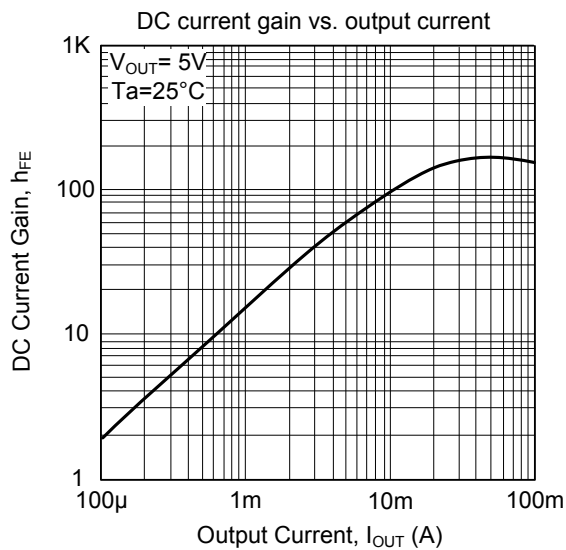
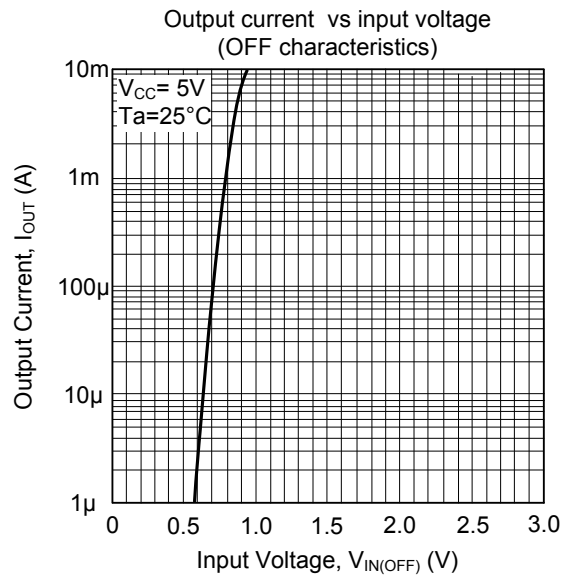
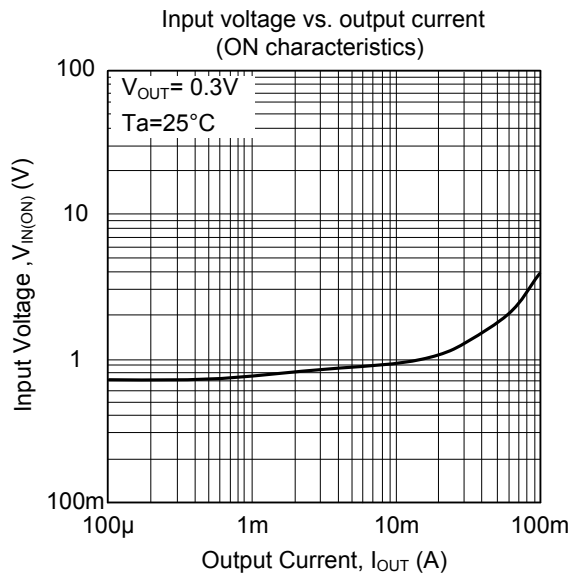
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC}=5\text{V}$, $I_{OUT}=100\mu\text{A}$			0.3	V
	$V_{IN(ON)}$	$V_{OUT}=0.3\text{V}$, $I_{OUT}=20\text{mA}$	3			V
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN}=10\text{mA}/0.5\text{mA}$		0.1	0.3	V
Input Current	I_{IN}	$V_{IN}=5\text{V}$			3.8	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC}=50\text{V}$, $V_{IN}=0\text{V}$			0.5	μA
DC Current Gain	h_{FE}	$V_{OUT}=5\text{V}$, $I_{OUT}=10\text{mA}$	33			
Input Resistance	R_1		1.54	2.2	2.86	K Ω
Resistance Ratio	R_2/R_1		3.6	4.5	5.5	
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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