

DTC144V

Advance

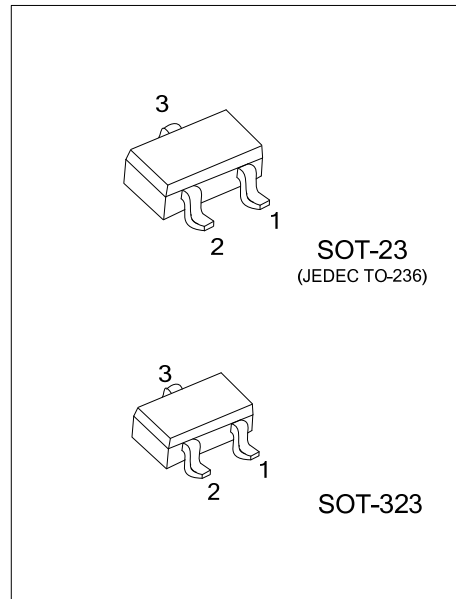
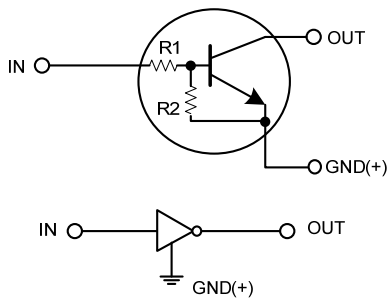
NPN SILICON TRANSISTOR

**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.

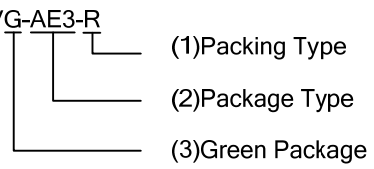
■ **EQUIVALENT CIRCUIT**



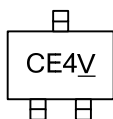
■ **ORDERING INFORMATION**

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
DTC144VG-AE3-R	SOT-23	E	B	C	Tape Reel
DTC144VG-AL3-R	SOT-323	E	B	C	Tape Reel

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

<p>DTC144VG-AE3-R</p> 	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) G: Halogen Free and Lead Free</p>
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■ **MARKING**



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10 ~ +40	V
Output Current	I_{OUT}	100	mA
	$I_{OUT(MAX)}$	100	mA
Power Dissipation	P_D	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
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = 5V, I_{OUT} = 100\mu\text{A}$			0.5	V
	$V_{IN(ON)}$	$V_{OUT} = 0.3V, I_{OUT} = 20\text{mA}$	3			
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}	$V_{IN} = 5V$			0.18	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = 50V, V_{IN} = 0V$			0.5	μA
DC Current Gain	h_{FE}	$V_{OUT} = 5V, I_{OUT} = 5\text{mA}$	33			
Input Resistance	R1		32.9	47	61.1	k Ω
Resistance Ratio	R2			10		k Ω
Transition Frequency	f_T	$V_{CE} = 10V, I_E = -5\text{mA}, f = 100\text{MHz}$		250		MHz

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