

**DTC144V**

Advance

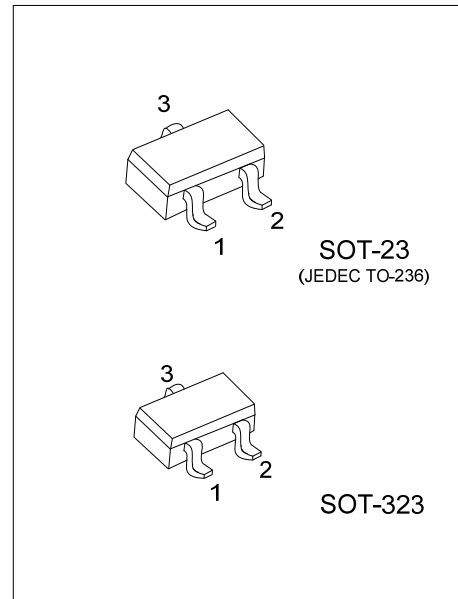
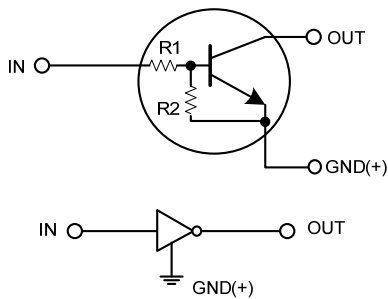
**NPN SILICON TRANSISTOR**

**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



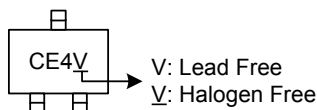
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC144VL-AE3-R	DTC144VG-AE3-R	SOT-23	B	E	C	Tape Reel
DTC144VL-AL3-R	DTC144VG-AL3-R	SOT-323	B	E	C	Tape Reel

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

<p>DTC144VG-AE3-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) AE3: SOT-23, AL3: SOT-323</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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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	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT} = 5V, I_{OUT} = 5\text{mA}$	33			
Input Resistance	R1		32.9	47	61.1	k $\Omega$
Resistance Ratio	R2			10		k $\Omega$
Transition Frequency	$f_T$	$V_{CE} = 10V, I_E = -5\text{mA}, f = 100\text{MHz}$		250		MHz

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