



DTC144E

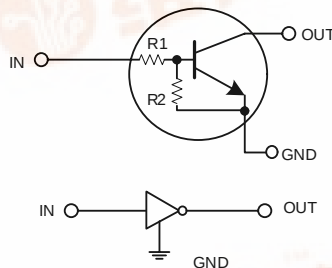
NPN SILICON TRANSISTOR

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

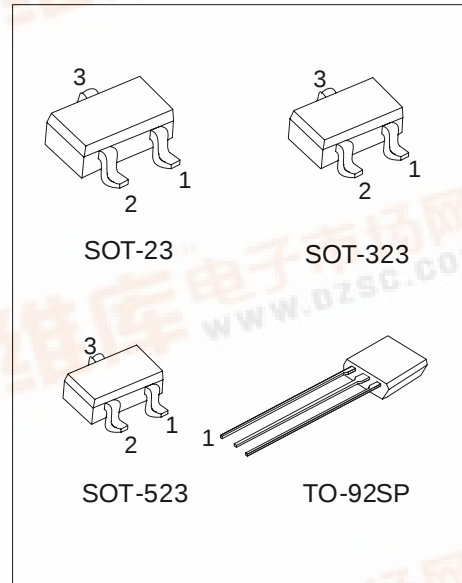
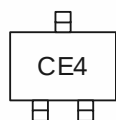


ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTC144E-AE3-R	DTC144EL-AE3-R	SOT-23	G	I	O	Tape Reel
DTC144E-AL3-R	DTC144EL-AL3-R	SOT-323	G	I	O	Tape Reel
DTC144E-AN3-R	DTC144EL-AN3-R	SOT-523	G	I	O	Tape Reel
DTC144E-T9S-R	DTC144EL-T9S-R	TO-92SP	G	O	I	Tape Reel

	(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523 (3) L: Lead Free Plating, Blank: Pb/Sn
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MARKING(For SOT Package)



*Pb-free plating product number:DTC144EL



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V _{CC}	50	V
Input Voltage		V _{IN}	-10 ~ +12	V
Output Current		I _{OUT}	100	mA
		I _{OUT(MAX)}	100	mA
Power Dissipation	TO-92SP	P _C	300	mW
	SOT-523		150	mW
	SOT-23/SOT-323		200	mW
Junction Temperature		T _J	+150	
Storage Temperature		T _{STG}	-55~+150	

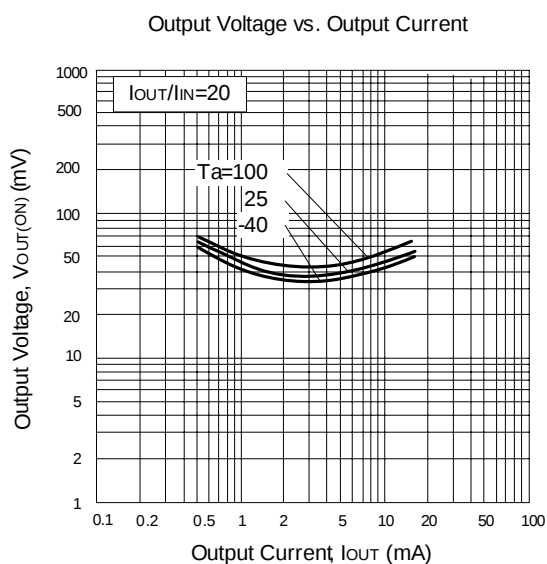
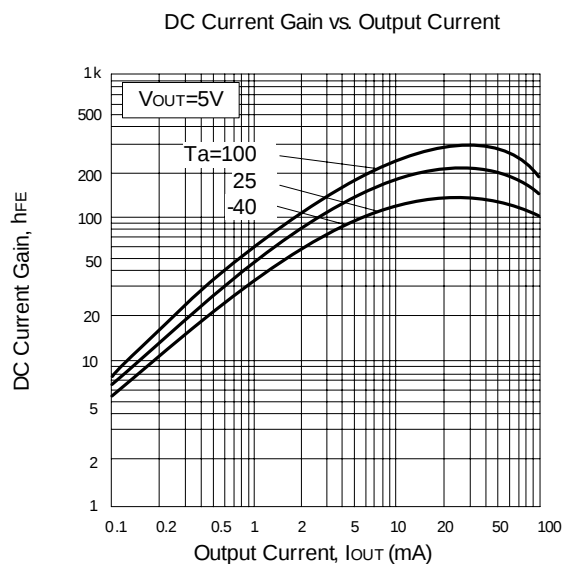
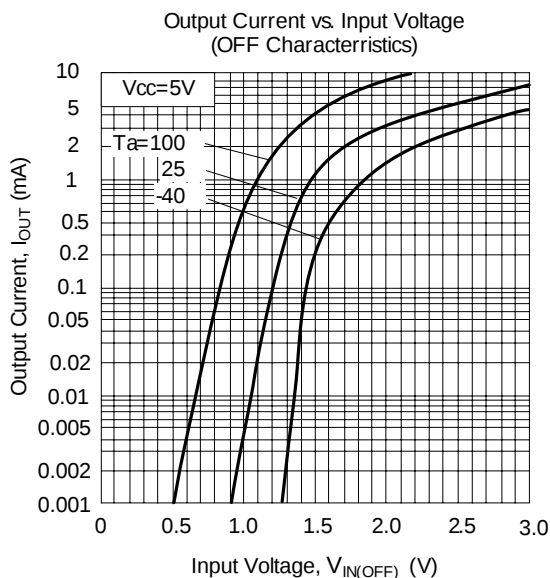
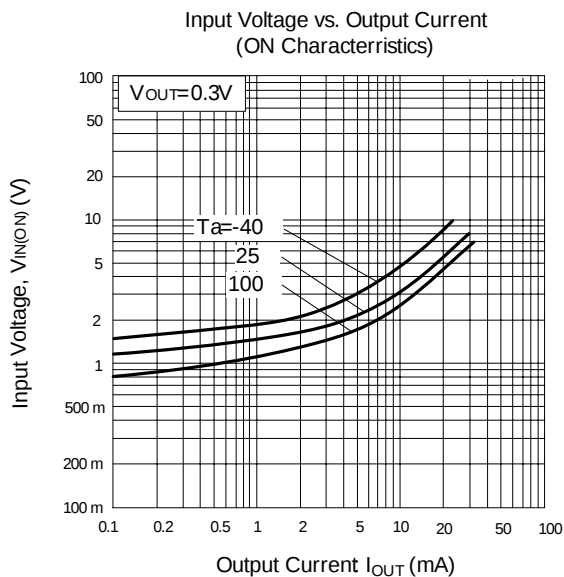
Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

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

■ ELECTRICAL CHARACTERISTICS (Ta = 25 , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{IN(OFF)}	V _{CC} = 5V, I _{OUT} = 100 μA			0.5	V
	V _{IN(ON)}	V _{OUT} = 0.3V, I _{OUT} = 20mA	3			
Output Voltage	V _{OUT(ON)}	I _{OUT} /I _{IN} = 10mA / 0.5 mA			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} = 5mA	68			
Input Resistance	R _I		32.9	47	61.1	kΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	
Transition Frequency	f _T	V _{CE} = 10 V, I _E = -5mA, f = 100MHz		250		MHz

■ TYPICAL CHARACTERISTICS



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