



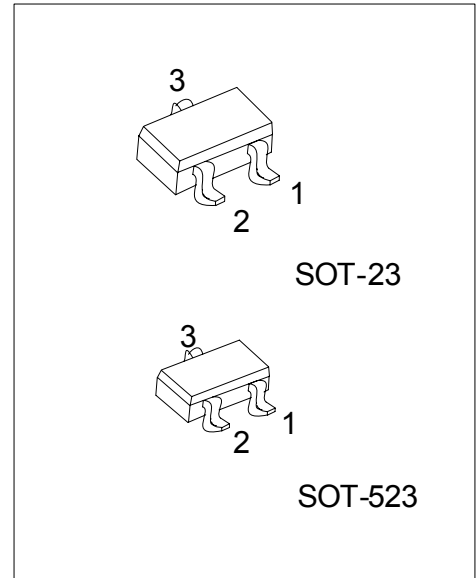
DTC115E

NPN EPITAXIAL SILICON TRANSISTOR

NPN DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

■ FEATURES

- * Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- * The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- * Only the on / off conditions need to be set for operation, making device design easy.



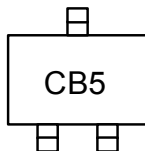
*Pb-free plating product number: DTC115EL

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTC115E-AE3-6-R	DTC115EL-AE3-6-R	SOT-23	G	I	O	Tape Reel
DTC115E-AN3-6-R	DTC115EL-AN3-6-R	SOT-523	G	I	O	Tape Reel

DTC115EL-AE3-6-R (1)Packing Type (2)Pin Assignment (3)Package Type (4)Lead Plating	(1) R: Tape Reel (2) refer to Pin Assignment (3) AE3: SOT-23, AN3: SOT-523 (4) L: Lead Free Plating, Blank: Pb/Sn
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■ MARKING INFORMATION



■ ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10 ~ +40	V
Output Current	I_{OUT}	20	mA
	$I_{C(MAX)}$	100	
Power Dissipation	SOT-23	200	mW
	SOT-523	150	mW
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

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

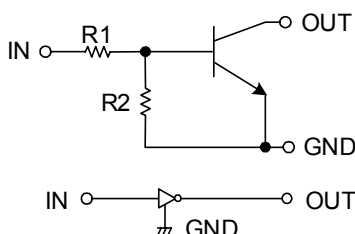
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=5V, I_{OUT}=100\mu A$			0.5	V
	$V_{I(ON)}$	$V_{OUT}=0.3V, I_{OUT}=1mA$	3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}=5mA, I_{IN}=0.25mA$		0.1	0.3	V
Input Current	I_{IN}	$V_{IN}=5V$			0.15	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=50V, V_{IN}=0V$			0.5	μA
DC Current Gain	G_I	$V_{OUT}=5V, I_{OUT}=5mA$	82			
Input Resistance	R1		70	100	130	k Ω
Resistance Ratio	R2/R1		0.8	1	1.2	
Transition Frequency	f_T	$V_{CE}=10V, I_E=-5mA, f=100MHz$ *		250		MHz

*Transition frequency of the device

■ EQUIVALENT CIRCUIT



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