



## DTC143Z

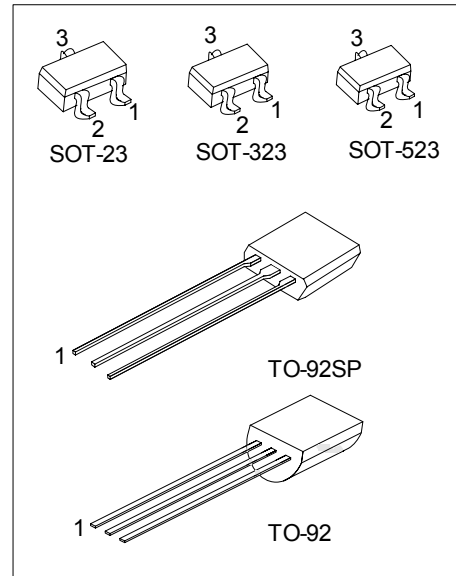
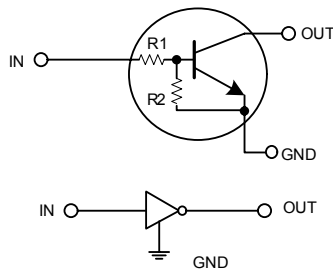
## NPN SILICON TRANSISTOR

### NPN DIGITAL TRANSISTOR (BUILT-IN 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



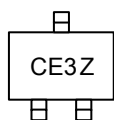
\*Pb-free plating product number: DTC143ZL

#### ORDERING INFORMATION

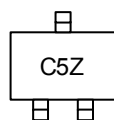
Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTC143Z-AE3-R	DTC143ZL-AE3-R	SOT-23	G	I	O	Tape Reel
DTC143Z-AL3-R	DTC143ZL-AL3-R	SOT-323	G	I	O	Tape Reel
DTC143Z-AN3-R	DTC143ZL-AN3-R	SOT-523	G	I	O	Tape Reel
DTC143Z-T92-B	DTC143ZL-T92-B	TO-92	G	O	I	Tape Box
DTC143Z-T92-K	DTC143ZL-T92-K	TO-92	G	O	I	Bulk
DTC143Z-T92-R	DTC143ZL-T92-R	TO-92	G	O	I	Tape Reel
DTC143Z-T9S-K	DTC143ZL-T9S-K	TO-92SP	G	O	I	Bulk

<p>DTC143ZL-AE3-R</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523, T92: TO-92, T9S: TO-92SP</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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#### MARKING



For SOT-23/SOT-323 Package



For SOT-523 Package

### ■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 )

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V <sub>CC</sub>	50	V
Input Voltage		V <sub>IN</sub>	-5 ~ +30	V
Output Current		I <sub>OUT</sub>	100	mA
		I <sub>C (MAX)</sub>	100	
Power Dissipation	SOT-523	P <sub>D</sub>	150	mW
	SOT-23/SOT-323		200	mW
	TO-92/TO-92SP		300	mW
Junction Temperature		T <sub>J</sub>	+150	
Storage Temperature		T <sub>STG</sub>	-55 ~ +150	

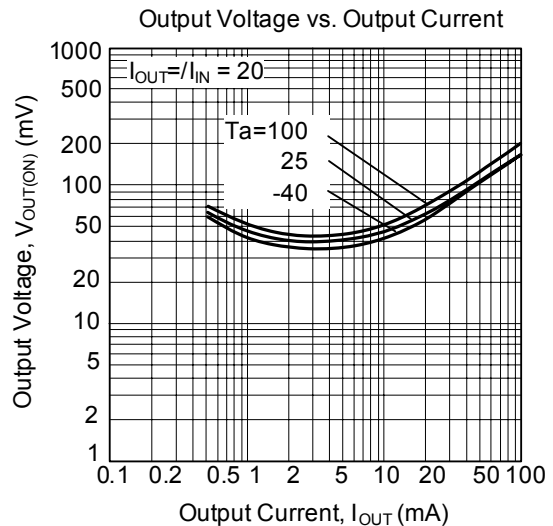
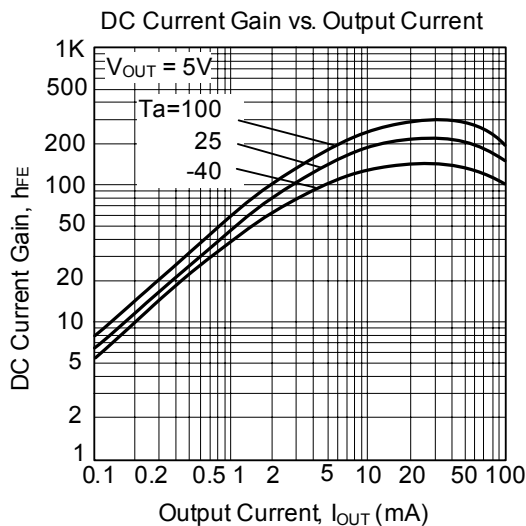
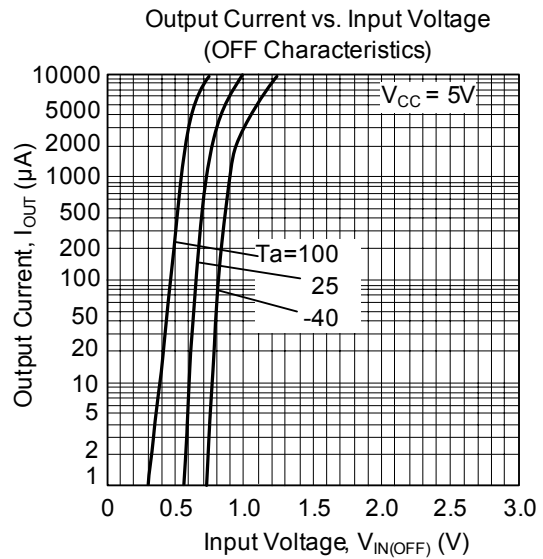
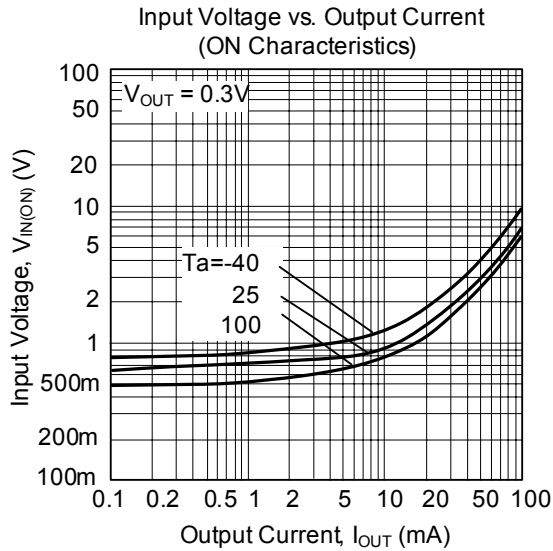
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ ELECTRICAL CHARACTERISTICS (Ta = 25 )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V <sub>IN (OFF)</sub>	V <sub>CC</sub> =5V, I <sub>OUT</sub> =100μA			0.5	V
	V <sub>IN (ON)</sub>	V <sub>OUT</sub> =0.3V, I <sub>OUT</sub> =5mA	1.3			
Output Voltage	V <sub>OUT (ON)</sub>	I <sub>OUT</sub> /I <sub>IN</sub> =5mA/0.25mA		0.1	0.3	V
Input Current	I <sub>IN</sub>	V <sub>IN</sub> =5V			1.8	mA
Output Current	I <sub>O (OFF)</sub>	V <sub>CC</sub> =50V, V <sub>IN</sub> =0V			0.5	μA
DC Current Gain	h <sub>FE</sub>	V <sub>OUT</sub> =5V, I <sub>OUT</sub> =10mA	80			
Input Resistance	R <sub>1</sub>		3.29	4.7	6.11	KΩ
Resistance Ratio	R <sub>2</sub> /R <sub>1</sub>		8	10	12	
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz *		250		MHz

\* Transition frequency of the device

### TYPICAL CHARACTERISTICS



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