



DTD143E

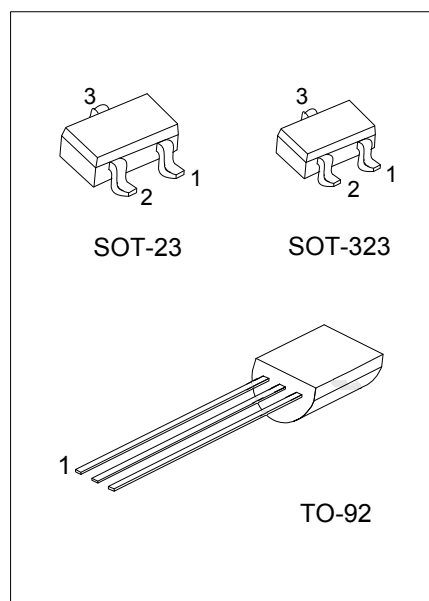
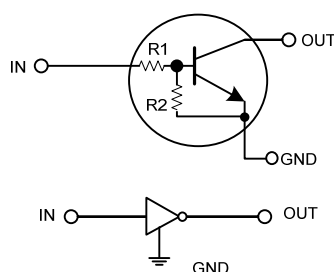
NPN SILICON TRANSISTOR

DIGITAL TRANSISTORS (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 positive input.

■ EQUIVALENT CIRCUIT

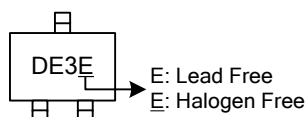


■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTD143EL-AE3-R	DTD143EG-AE3-R	SOT-23	G	I	O	Tape Reel
DTD143EL-AL3-R	DTD143EG-AE3-R	SOT-323	G	I	O	Tape Reel
DTD143EL-T92-B	DTD143EG-T92-B	TO-92	G	O	I	Tape Box
DTD143EL-T92-K	DTD143EG-T92-K	TO-92	G	O	I	Bulk
DTD143EL-T92-R	DTD143EG-T92-R	TO-92	G	O	I	Tape Reel

DTD143EL-AE3-R (1)Packing Type (2)Package Type (3)Lead Free	(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, T92:TO-92 (3) L: Lead Free , G: Halogen Free
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■ MARKING(FOR SOT-23/SOT-323 PACKAGE)



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

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	50	V
Input Voltage		V_{IN}	-10 ~ +30	V
Output Current		I_{OUT}	500	mA
Power Dissipation	SOT-23/SOT-323	P_D	200	mW
	TO-92		625	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.

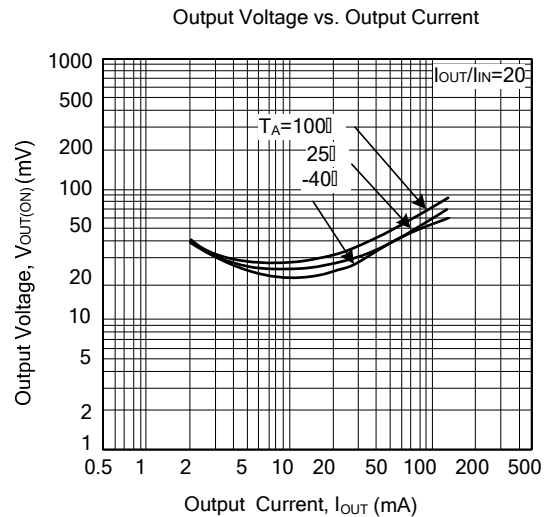
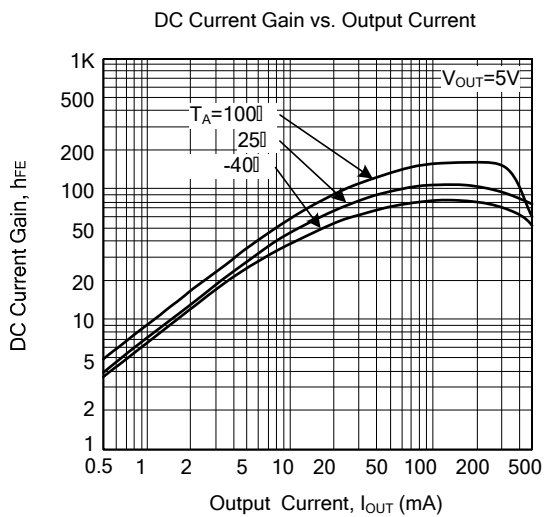
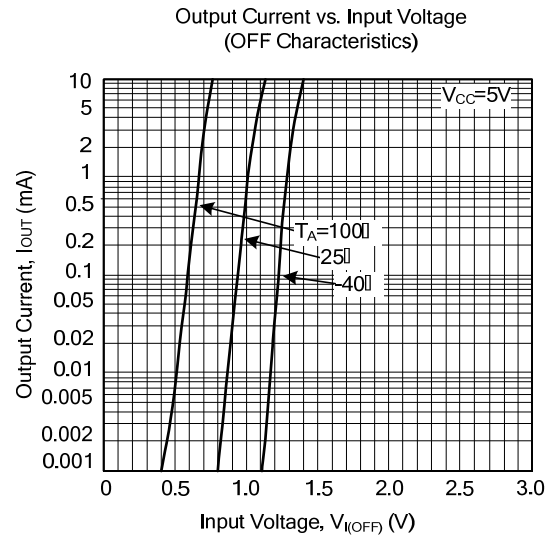
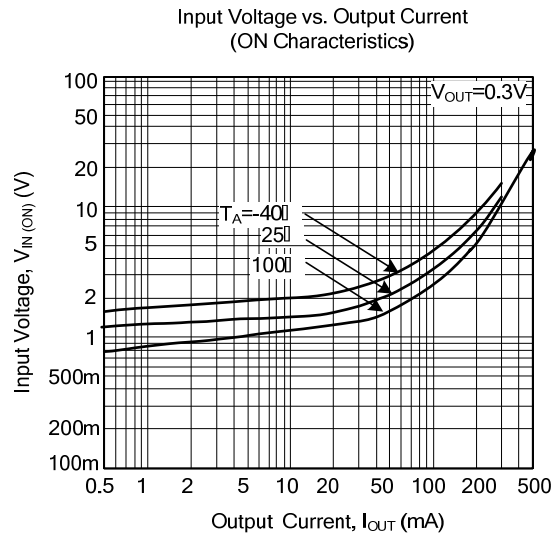
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL SPECIFICATIONS ($T_A=25^{\circ}\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC}=5\text{V}$, $I_{OUT}=100\mu\text{A}$			0.5	V
	$V_{IN(ON)}$	$V_{OUT}=0.3\text{V}$, $I_{OUT}=20\text{mA}$	3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN}=50\text{mA}/2.5\text{mA}$		0.1	0.3	V
Input Current	I_{IN}	$V_{IN}=5\text{V}$			1.8	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC}=50\text{V}$, $V_{IN}=0\text{V}$			0.5	μA
DC Current Gain	h_{FE}	$V_{OUT}=5\text{V}$, $I_{OUT}=50\text{mA}$	47			
Input Resistance	R_1		3.29	4.7	6.11	K Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Transition Frequency	f_T	$V_{CE}=10\text{V}$, $I_E=-50\text{mA}$, $f=100\text{MHz}$ (Note)		200		MHz

Note: Transition frequency of the device

TYPICAL CHARACTERISTIC



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