



DTD143E

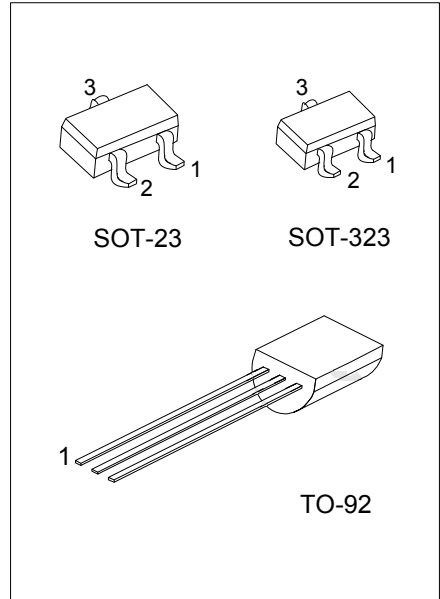
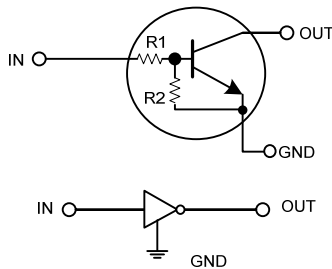
NPN SILICON TRANSISTOR

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

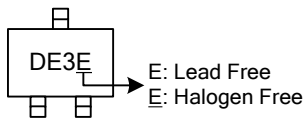


■ ORDERING INFORMATION

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

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



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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	°C
Storage Temperature		T _{STG}	-55 ~ +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.

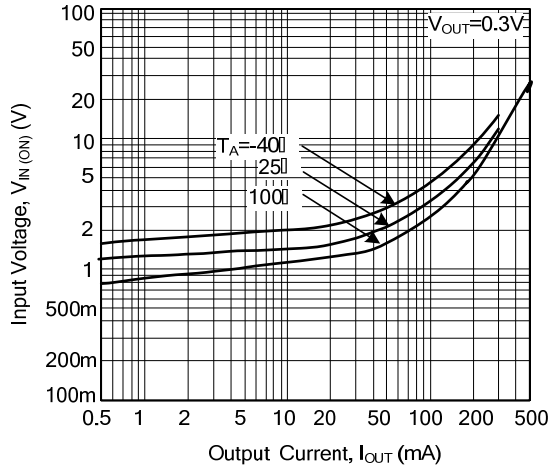
■ ELECTRICAL SPECIFICATIONS (T_A=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{IN(OFF)}	V _{CC} = 5V, I _{OUT} = 100μA			0.5	V
	V _{IN(ON)}	V _{OUT} = 0.3V, I _{OUT} = 20mA	3			
Output Voltage	V _{OUT(ON)}	I _{OUT} /I _{IN} = 50mA/2.5mA		0.1	0.3	V
Input Current	I _{IN}	V _{IN} = 5V			1.8	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} = 50mA	47			
Input Resistance	R ₁		3.29	4.7	6.11	KΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	
Transition Frequency	f _T	V _{CE} = 10V, I _E = -50mA, f = 100MHz(Note)		200		MHz

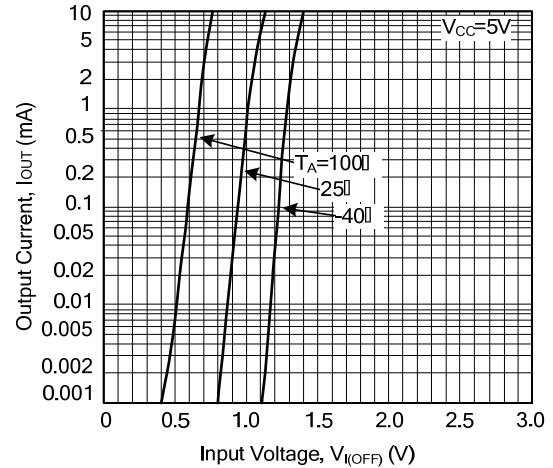
Note: Transition frequency of the device

TYPICAL CHARACTERISTIC

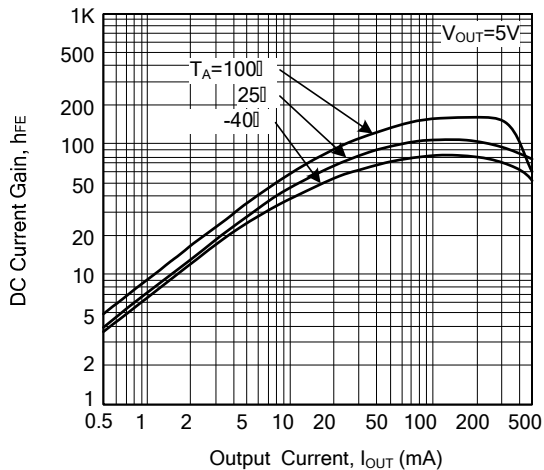
Input Voltage vs. Output Current
(ON Characteristics)



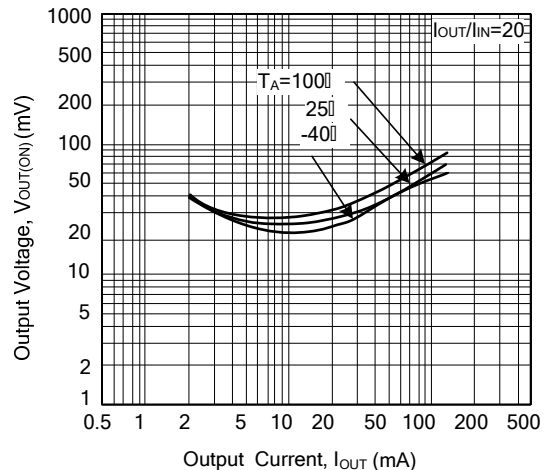
Output Current vs. Input Voltage
(OFF Characteristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current



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