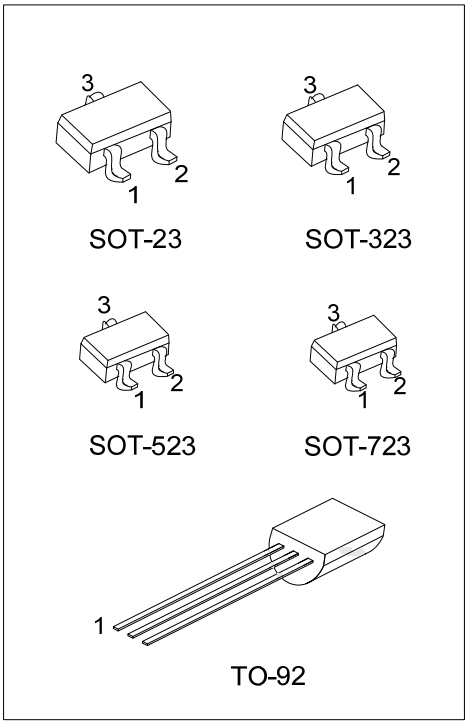
DTA143E

PNP SILICON TRANSISTOR

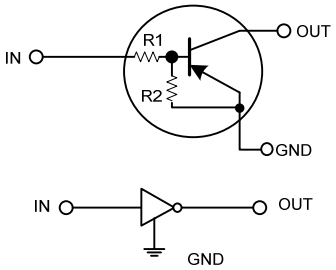
DIGITAL TRANSISTORS (BUILT- IN BIAS RESISTORS)



■ FEATURES

* Built-in bias resistors that implies easy ON/OFF applications.
* The bias resistors are thin-film resistors with complete isolation to allow positive input.

■ EQUIVALENT CIRCUIT



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTA143EL-AE3-R	DTA143EG-AE3-R	SOT-23	I	G	O	Tape Reel
DTA143EL-AL3-R	DTA143EG-AL3-R	SOT-323	I	G	O	Tape Reel
DTA143EL-AN3-R	DTA143EG-AN3-R	SOT-523	I	G	O	Tape Reel
DTA143EL-AQ3-R	DTA143EG-AQ3-R	SOT-723	I	G	O	Tape Reel
DTA143EL-T92-B	DTA143EG-T92-B	TO-92	G	O	I	Tape Box
DTA143EL-T92-K	DTA143EG-T92-K	TO-92	G	O	I	Bulk

Note: Pin Assignment: I: IN G: GND O: OUT

DTA143EG-AE3-R
(1)Packing Type
(2)Package Type
(3)Green Package

(1) B: Tape Box, K: Bulk, R: Tape Reel
(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523, TQ3: SOT-723, T92: TO-92
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

SOT-23 / SOT-323 / SOT-523	TO-92
AE3E E: Lead Free E: Halogen Free	UTC DTA143E□ □□□ L: Lead Free G: Halogen Free Date Code

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	-50	V
Input Voltage		V_{IN}	-30~+10	V
Output Current		I_{OUT}	-100	mA
		$I_{C(MAX)}$	-100	
Power Dissipation	SOT-523	P_D	150	mW
	SOT-23/SOT-323		200	mW
	SOT-723		125	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.

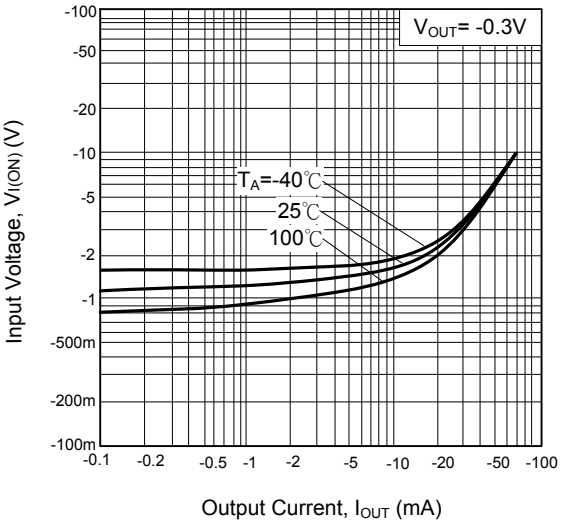
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

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} =-10mA/-0.5mA		-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} =-10mA	20			
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 =-5mA, f=100MHz (Note)		250		MHz

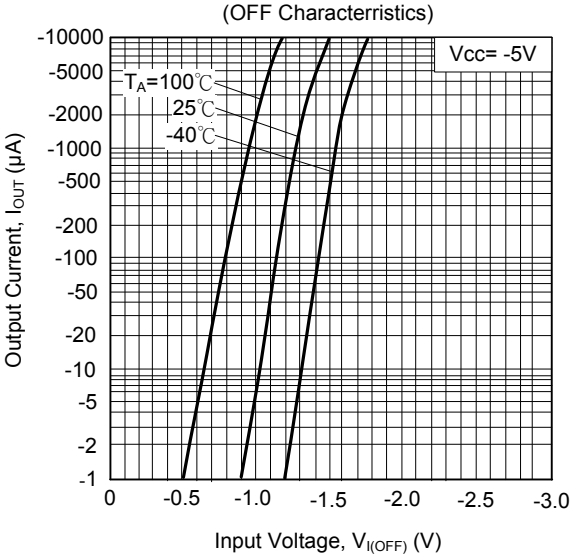
Note: Transition frequency of the device

■ TYPICAL CHARACTERISTICS

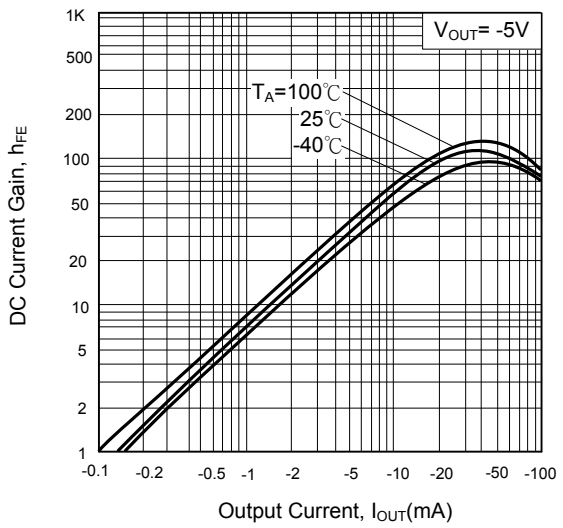
Input Voltage vs. Output Current
(ON Characterristics)



Output Current vs. Input Voltage
(OFF Characterristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current