



DTA123E

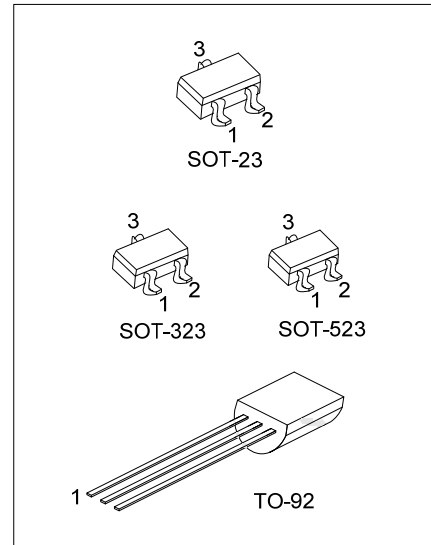
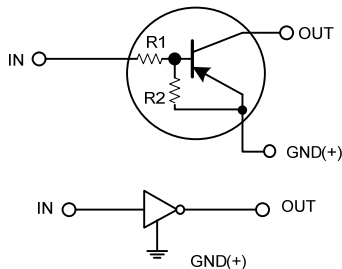
PNP SILICON TRANSISTOR

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

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTA123EL-AE3-R	DTA123EG-AE3-R	SOT-23	I	G	O	Tape Reel
DTA123EL-AL3-R	DTA123EG-AL3-R	SOT-323	I	G	O	Tape Reel
DTA123EL-AN3-R	DTA123EG-AN3-R	SOT-523	I	G	O	Tape Reel
DTA123EL-T92-K	DTA123EG-T92-K	TO-92	G	O	I	Bulk
DTA123EL-T92-B	DTA123EG-T92-B	TO-92	G	O	I	Tape Box

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

<p>DTA123EG-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</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-23 / SOT-323 / SOT-523	TO-92

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

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	-50	V
Input Voltage		V_{IN}	-12 ~ +10	V
Output Current		I_{OUT}	-100	mA
Power Dissipation	SOT-523	P_D	150	mW
	SOT-23/SOT-323		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.

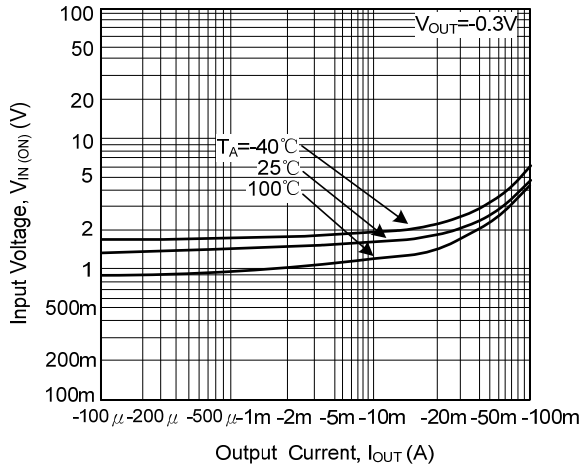
■ ELECTRICAL SPECIFICATIONS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = -5V, I_{OUT} = -100\mu\text{A}$			-0.5	V
	$V_{IN(ON)}$	$V_{OUT} = -0.3V, I_{OUT} = -20\text{mA}$	-3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN} = 10\text{mA}/-0.5\text{mA}$		-0.1	-0.3	V
Input Current	I_{IN}	$V_{IN} = -5V$			-3.8	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = -50V, V_{IN} = 0V$			-0.5	μA
DC Current Gain	G_{IN}	$V_{OUT} = -5V, I_{OUT} = -20\text{mA}$	20			
Input Resistance	R_1		1.54	2.2	2.86	K Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Transition Frequency	f_T	$V_{CE} = -10V, I_E = -5\text{mA}, f = 100\text{MHz}$ (Note)		250		MHz

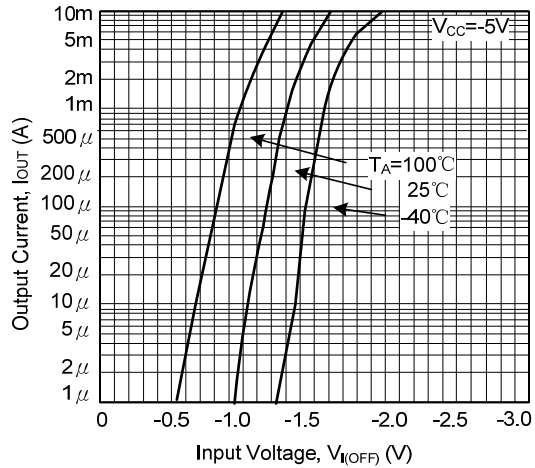
Note: Transition frequency of the device.

■ TYPICAL CHARACTERISTIC

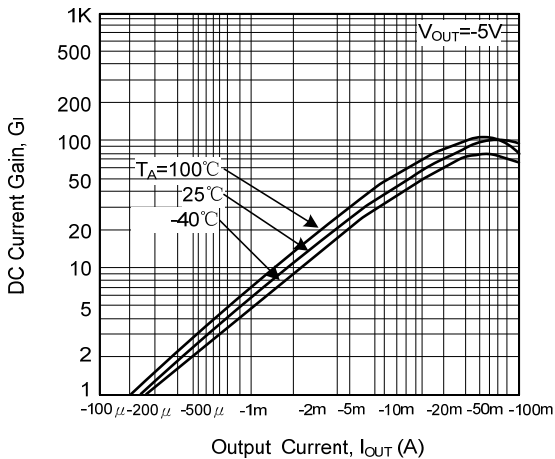
Input Voltage vs. Output Current
(ON Characteristics)



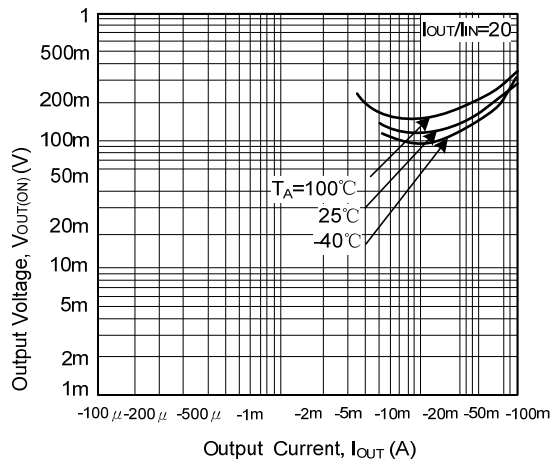
Output Current vs. Input Voltage
(OFF Characteristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current



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