



DTA123E

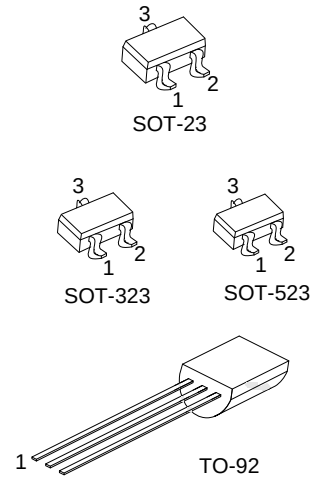
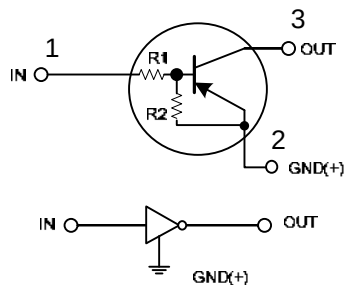
PNP SILICON TRANSISTOR

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		2	1	3	
DTA123EL-AE3-R	DTA123EG-AE3-R	SOT-23	G	I	O	Tape Reel
DTA123EL-AL3-R	DTA123EG-AL3-R	SOT-323	G	I	O	Tape Reel
DTA123EL-AN3-R	DTA123EG-AN3-R	SOT-523	G	I	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
DTA123EL-T92-R	DTA123EG-T92-R	TO-92	G	O	I	Tape Reel

MARKING : AC3



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

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

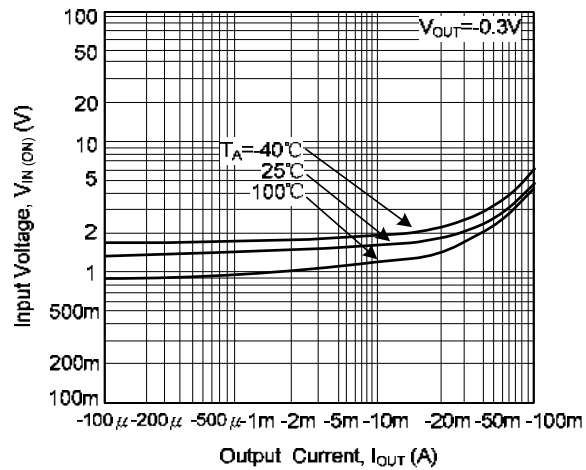
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = -5\text{V}$, $I_{OUT} = -100\mu\text{A}$			-0.5	V
	$V_{IN(ON)}$	$V_{OUT} = -0.3\text{V}$, $I_{OUT} = -20\text{mA}$	-3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN} = 10\text{mA}/-0.5\text{mA}$		-0.1	-0.3	V
Input Current	I_{IN}	$V_{IN} = -5\text{V}$			-3.8	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = -50\text{V}$, $V_{IN} = 0\text{V}$			-0.5	μA
DC Current Gain	G_{IN}	$V_{OUT} = -5\text{V}$, $I_{OUT} = -20\text{mA}$	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	$V_{CE} = -10\text{V}$, $I_E = -5\text{mA}$, $f = 100\text{MHz}$ (Note)		250		MHz

Note: Transition frequency of the device

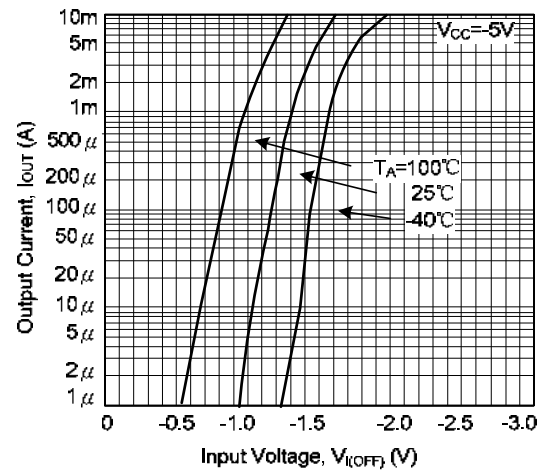


■ TYPICAL CHARACTERISTIC

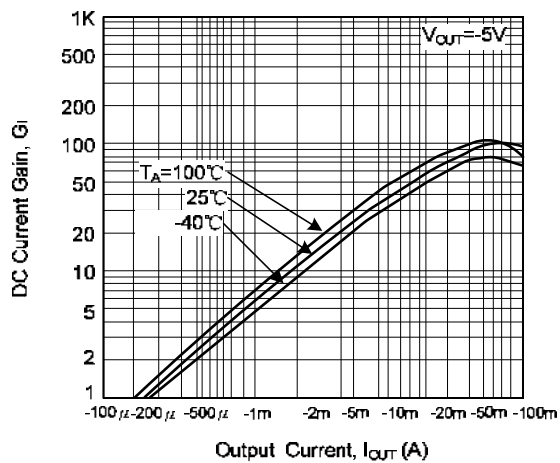
Input Voltage vs. Output Current
(ON Characteristics)



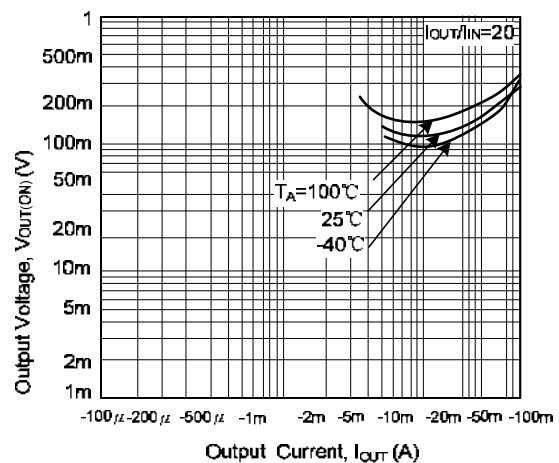
Output Current vs. Input Voltage
(OFF Characteristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current

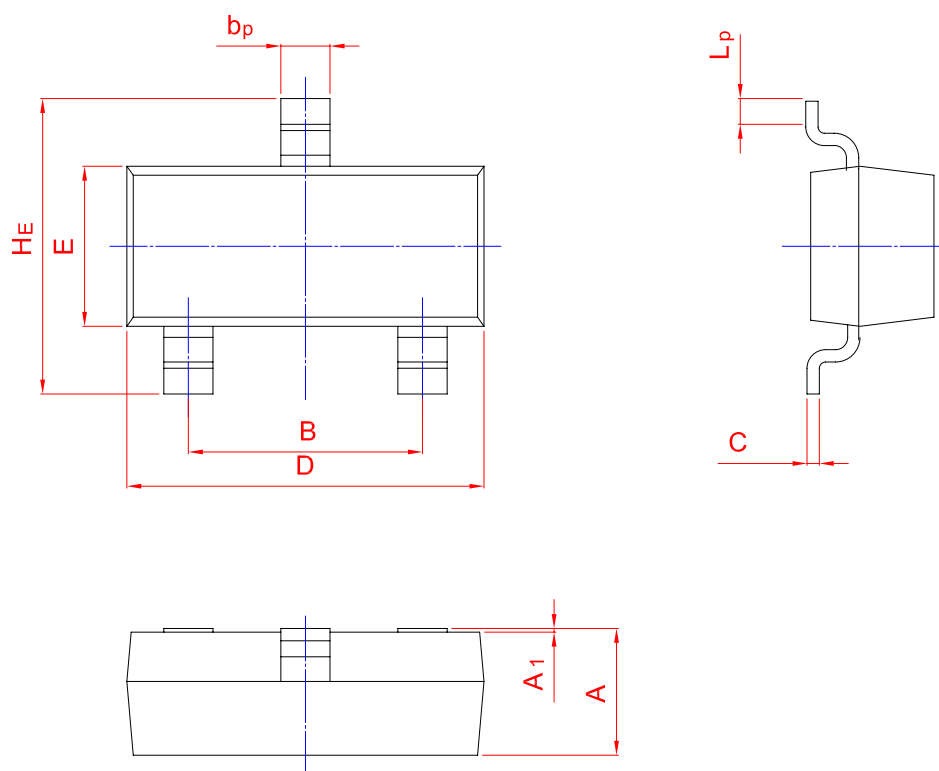
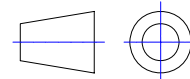




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20