



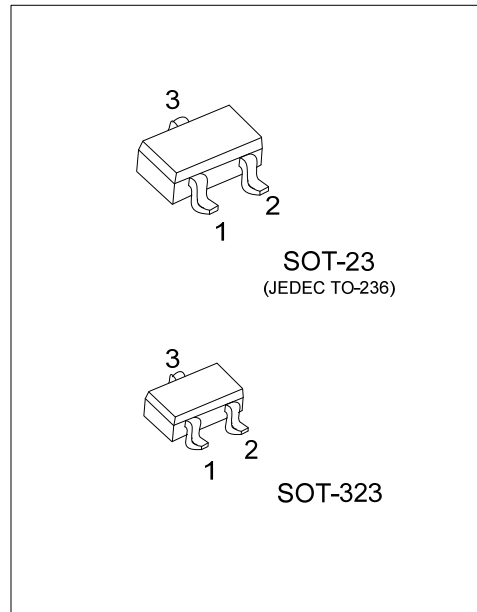
# DTA115E

## PNP EPITAXIAL SILICON TRANSISTOR

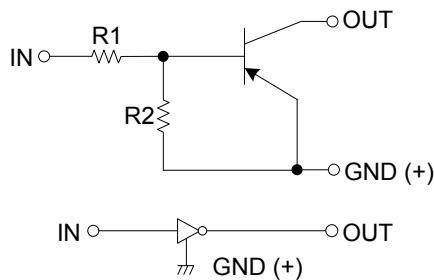
### PNP DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

■ FEATURES

- \* Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see the equivalent circuit).
- \* The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- \* Only the on / off conditions need to be set for operation, making device design easy.



■ EQUIVALENT CIRCUIT



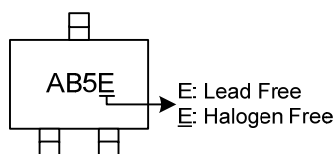
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTA115EL-AE3-R	DTA115EG-AE3-R	SOT-23	I	G	O	Tape Reel
DTA115EL-AL3-R	DTA115EG-AL3-R	SOT-323	I	G	O	Tape Reel

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

<p>DTA115EG-AE3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	-50	V
Input Voltage	$V_{IN}$	-40~+10	V
Output Current	$I_{OUT}$	-20	mA
	$I_{C(MAX)}$	-100	
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +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 CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ , 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
	$V_{IN(ON)}$	$V_{OUT} = -0.3V, I_{OUT} = -1\text{mA}$	-3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT} = -5\text{mA}, I_{IN} = -0.25\text{mA}$		-0.1	-0.3	V
Input Current	$I_{IN}$	$V_{IN} = -5V$			-0.15	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = -50V, V_{IN} = 0V$			-0.5	$\mu\text{A}$
DC Current Gain	$G_1$	$V_{OUT} = -5V, I_{OUT} = -5\text{mA}$	82			
Input Resistance	$R_1$		70	100	130	k $\Omega$
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

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