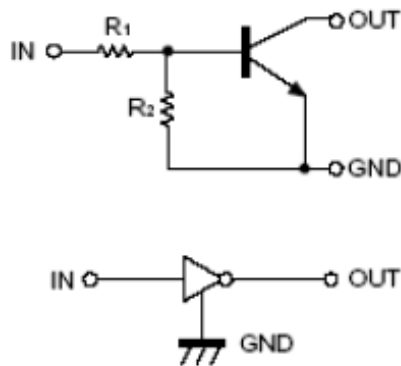


DIGITAL TRANSISTOR (NPN)

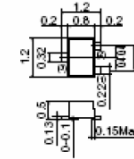
FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow negative 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.



Digital Transistor (built-in resistor)

DTC123JM

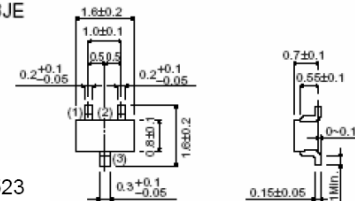


SOT-523

Abbreviated symbol : E42

(1) IN
(2) GND
(3) OUT

DTC123JE

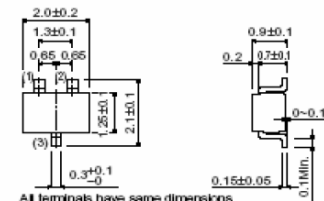


SOT-523

Abbreviated symbol : E42

(1) GND
(2) IN
(3) OUT

DTC123JUA

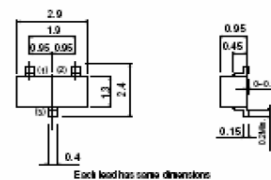


SOT-323

Abbreviated symbol : E42

(1) GND
(2) IN
(3) OUT

DTC123JCA

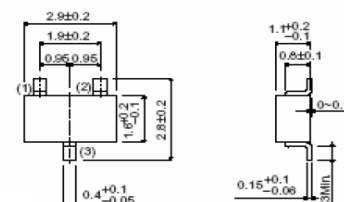


SOT-23

Each lead has same dimensions

(1) GND
(2) IN
(3) OUT

DTC123JKA

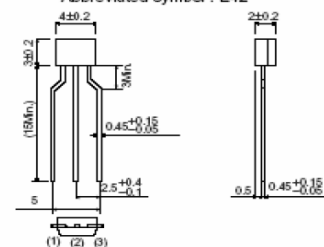


SOT-23-3L

All terminals have same dimensions

(1) GND
(2) IN
(3) OUT

DTC123JSA



TO-92S

(1) GND
(2) OUT
(3) IN

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE MAXIMUM RATINGS

Parameters	Symbols	Limits (DTC123J□)						UNITS
		M	E	UA	KA	CA	SA	
Supply Voltage	V _{CC}	50						V
Input Voltage	V _{IN}	-5~+12						V
Output Current	I _O	100						mA
	I _{C(MAX)}	100						
Power Dissipation	P _d	150		200			300	mW
Junction Temperature	T _J	150						°C
Storage Temperature	T _{STG}	-55~150						°C

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(off)}$	$V_{CC}=5V, I_O=100\mu A$			0.5	V
	$V_{I(on)}$	$V_O=0.3V, I_O=5mA$	1.1			
Output Voltage	$V_{O(on)}$	$I_O/I_I=5mA/0.25mA$			0.3	V
Input Current	I_I	$V_I=5V$			3.6	mA
Output Current	$I_{O(off)}$	$V_{CC}=50V, V_I=0$			0.5	μA
DC Current Gain	G_I	$V_O=5V, I_O=10mA$	80			
Input Resistance	R_1		1.54	2.2	2.86	K Ω
Resistance Ratio	R_2/R_1		17	21	26	
Transition Frequency	f_T	$V_{CE}=10V, I_E=5mA,$ $f=100MHz$		250		MHz