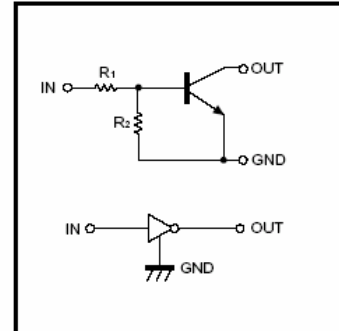


## FEATURES

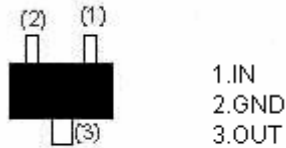
- \* Built-in bias resistors enable the configuration of an inverter circuit without connecting input external resistors (see equivalent circuit).
- \* Only the on/off conditions need to be set for operation, making device design easy.
- \* The bias resistors consist of thin-film resistors with complete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

### ●Equivalent circuit



## PIN CONNECTIONS AND MARKING

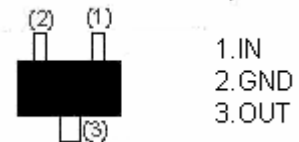
DTC143ZE



SOT-523

Abbreviated symbol: E23

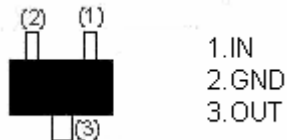
DTC143ZUA



SOT-323

Abbreviated symbol: E23

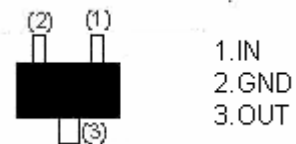
DTC143ZKA



SOT-23-3L

Abbreviated symbol: E23

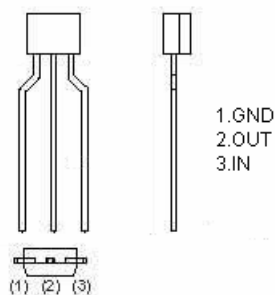
DTC143ZCA



SOT-23

Abbreviated symbol: E23

DTC143ZSA



TO-92S

**Absolute maximum ratings(Ta=25°C)**

Parameter	Symbol	Limits (DTC143□)					Unit
		E	UA	CA	KA	SA	
Collector-base voltage	$V_{(BR)CBO}$			50			V
Collector-emitter voltage	$V_{(BR)CEO}$			50			V
Emitter-base voltage	$V_{(BR)EBO}$			5			V
Collector current	$I_C$			100			mA
Collector Power dissipation	$P_C$	150		200		300	mW
Junction temperature	$T_j$			150			°C
Storage temperature	$T_{stg}$			-55~150			°C

**Electrical characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$			0.5	V	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$	1.3				$V_O=0.3V, I_O=5mA$
Output voltage	$V_{O(on)}$		0.1	0.3	V	$I_O/I_I=5mA/0.25mA$
Input current	$I_I$			1.8	mA	$V_I=5V$
Output current	$I_{O(off)}$			0.5	$\mu A$	$V_{CC}=50V, V_I=0$
DC current gain	$G_I$	80				$V_O=5V, I_O=10mA$
Input resistance	$R_1$	3.29	4.7	6.11	K $\Omega$	
Resistance ratio	$R_2/R_1$	8	10	12		
Transition frequency	$f_T$		250		MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$

**Typical Characteristics**

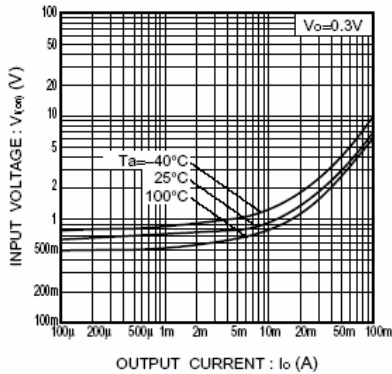


Fig.1 Input voltage vs. output current (ON characteristics)

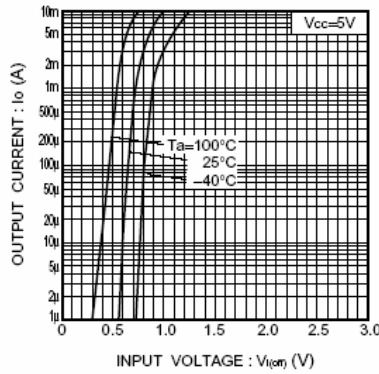


Fig.2 Output current vs. input voltage (OFF characteristics)

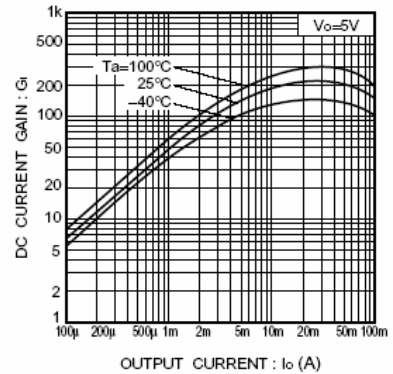


Fig.3 DC current gain vs. output current

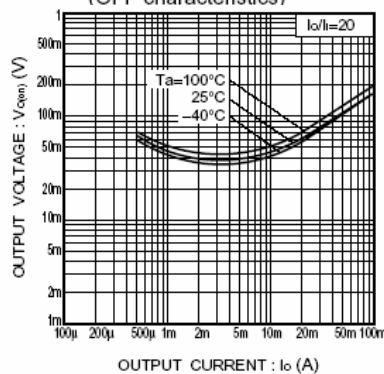


Fig.4 Output voltage vs. output current