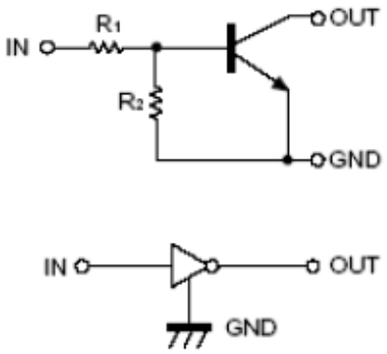
DIGITAL TRANSISTOR (NPN)

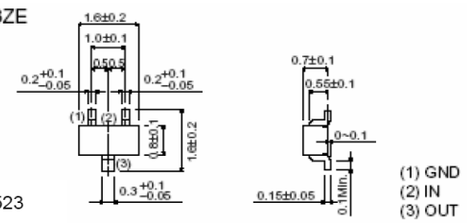
Digital Transistor (built-in resistor)

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.



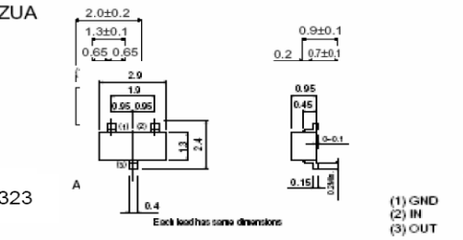
DTC143ZE



SOT-523

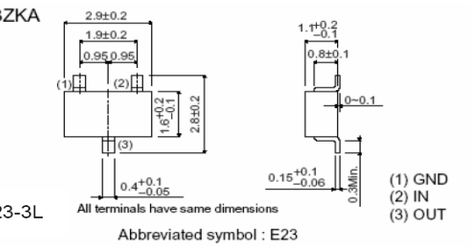
Abbreviated symbol : E23

DTC143ZUA



SOT-323

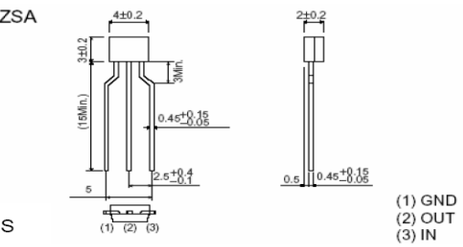
DTC143ZKA



SOT-23-3L

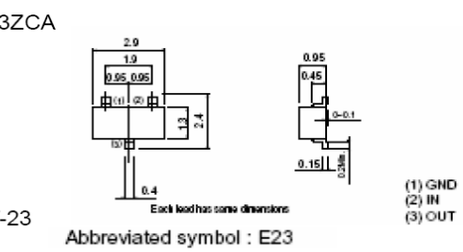
Abbreviated symbol : E23

DTC143ZSA



TO-92S

DTC143ZCA



SOT-23

Abbreviated symbol : E23

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

ABSOLUTE MAXIMUM RATINGS

Parameters	Symbols	Limits (DTC143Z□)					UNITS
		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					℃
Storage Temperature	T_{stg}	-55~150					℃

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I\ (off)}$ $V_{I\ (on)}$	V_{CC}=5V ,I_O=100μA V_O=0.3V ,I_O=5mA	0.5		1.3	V
Output Voltage	$V_{O\ (on)}$	I_O/I_I=5mA/0.25mA		0.1	0.3	V
Input Current	I_I	V_I=5V			1.8	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		3.29	4.7	6.11	KΩ
Resistance Ratio	R_2/R_1		8	10	12	
Transition Frequency	f_T	V_{CE}=10V, I_E=-5mA, f=100MHz		250		MHz