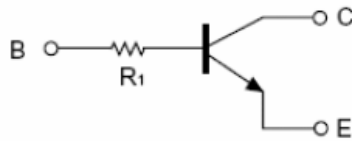


DIGITAL TRANSISTOR (NPN)

FEATURES

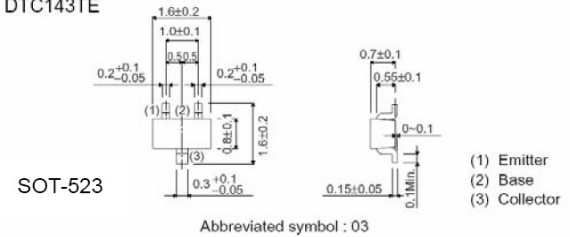
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely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



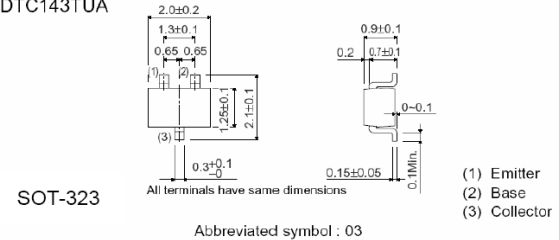
B : Base
C : Collector
E : Emitter

Digital Transistor (built-in resistor)

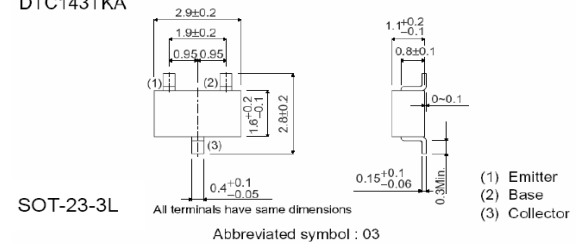
DTC143TE



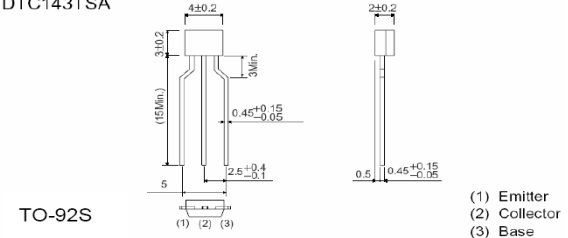
DTC143TUA



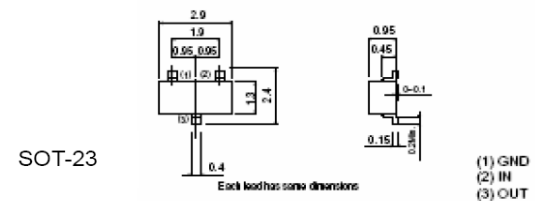
DTC143TKA



DTC143TSA



DTC143TCA



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE MAXIMUM RATINGS

Parameters	Symbols	Limits (DTC143T□)					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			°C
Junction and Storage Temperature	T_{stg}			-55~+150			°C

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=50V$			0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V$			0.5	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=5mA, I_B=0.25mA$			0.3	V
DC current gain	h_{FE}	$V_{CE}=5V, I_C=1mA$	100		600	
Input resistor	R_1		3.29	4.7	6.11	K Ω
Transition frequency	f_T	$V_{CE}=10V, I_E=-5mA,$ $f=100MHz$		250		MHz