

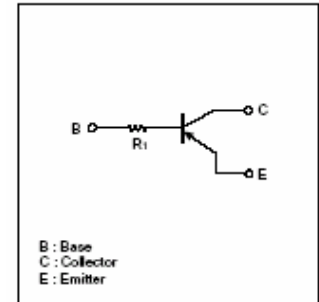


## Digital transistors (built-in resistors)

### DTA143TE/DTA143TUA/DTA143TKA /DTA143TSA/ DTA143TCA

DIGITAL TRANSISTOR (PNP)

#### ●Equivalent circuit



#### FEATURES

1. Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit).
2. 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.
3. Only the on/off conditions need to be set for operation, making device design easy.

#### PIN CONNENCTIONS AND MARKING

<p>DTA143TE</p> <p>(1) Base (2) Emitter (3) Collector</p> <p>SOT-523      Abbreviated symbol: 93</p>	<p>DTA143TUA</p> <p>(1) Base (2) Emitter (3) Collector</p> <p>SOT-323      Abbreviated symbol: 93</p>
<p>DTA143TKA</p> <p>(1) Base (2) Emitter (3) Collector</p> <p>SOT-23-3L      Abbreviated symbol: 93</p>	<p>DTA143TCA</p> <p>(1) Base (2) Emitter (3) Collector</p> <p>SOT-23      Abbreviated symbol: 93</p>
<p>DTA143TSA</p> <p>(1) Emitter (2) Collector (3) Base</p> <p>TO-92S</p>	

**Absolute maximum ratings(Ta=25°C)**

Parameter	Symbol	Limits (DTA143T□ )					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
Collector-base breakdown voltage	$V_{(BR)CBO}$	-50			V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	-50			V	$I_C = -1mA$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	-5			V	$I_E = -50\mu A$
Collector cut-off current	$I_{CBO}$			-0.5	$\mu A$	$V_{CB} = -50V$
Emitter cut-off current	$I_{EBO}$			-0.5	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$			-0.3	V	$I_C = -5mA, I_B = -0.25mA$
DC current transfer ratio	$h_{FE}$	100		600		$V_{CE} = -5V, I_C = -1mA$
Input resistance	$R_1$	3.29	4.7	6.11	K $\Omega$	
Transition frequency	$f_T$		250		MHz	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$

**Typical Characteristics**

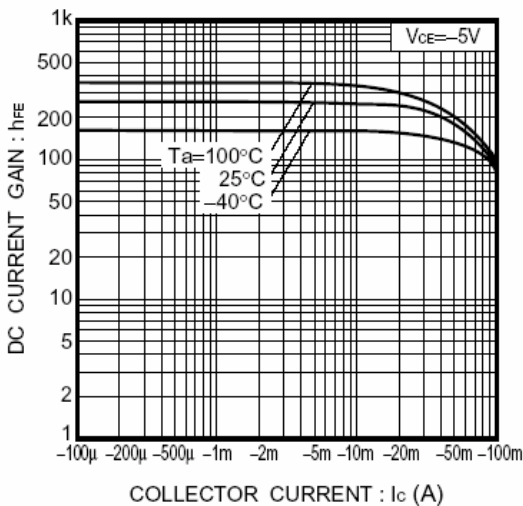


Fig.1 DC current gain vs. collector current

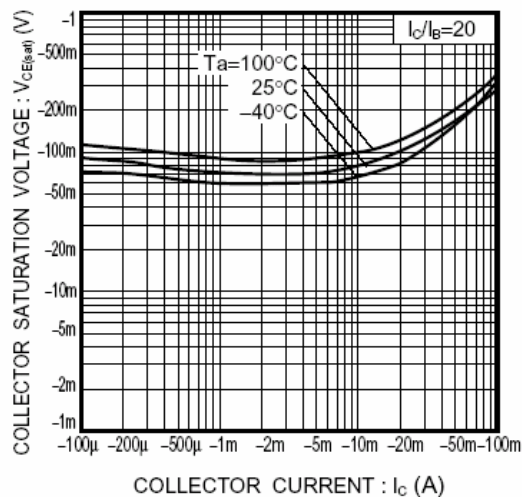


Fig.2 Collector-emitter saturation voltage vs. collector current