Digital transistors (built-in resistor) DTD123TK / DTD123TS

Features

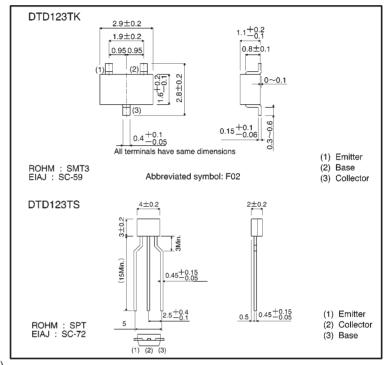
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thinfilm resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely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

StructureNPN digital transistor

456

(Built-in resistor type)

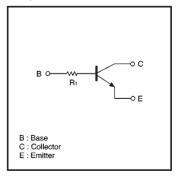
External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Cumbal	Limits(DT	Unit		
	Symbol	K	S	Unit	
Collector-base voltage	Vсво	50		V	
Collector-emitter voltage	VCEO	4	V		
Emitter-base voltage	VEBO		V		
Collector current	lc	500		mA	
Collector power dissipation	Pc	200	300	mW	
Junction temperature	Tj	150		°C	
Storage temperature	Tstg	−55∼+150		°C	

●Equivalent circuit



(96-368-D123T)

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Collector-base breakdown voltage	ВУсво	50	_	_	٧	Ic=50 μ A	
Collector-emitter breakdown voltage	BVCEO	40	_	_	٧	Ic=1mA	
Emitter-base breakdown voltage	ВУЕВО	5	_	_	٧	IE=50 μ A	
Collector cutoff current	Ісво	_	_	0.5	μΑ	V _{CB} =50V	
Emitter cutoff current	ІЕВО	_	_	0.5	μА	V _{EB} =4V	
Collector-emitter saturation voltage	V _{CE} (sat)	_	_	0.3	٧	Ic/Iв=50m/2.5mA	
DC current transfer ratio	hfE	100	250	600	_	VcE=5V, Ic=50mA	
Input resistance	R ₁	1.54	2.2	2.86	kΩ	_	
Transition frequency	f⊤	_	200	_	MHz	VcE=10V, IE=-50mA, f=100MHz*	

^{*} Transition frequency of the device

Packaging specifications

	Package	SMT3	SPT	
	Packaging type	Taping	Taping	
	Code	T146	TP	
Part No.	Basic ordering unit (pieces)	3000	5000	
DTD123TK		0	_	
DTD123TS		_	0	

Electrical characteristic curves

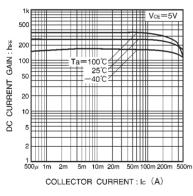


Fig.1 DC current gain vs. collector current

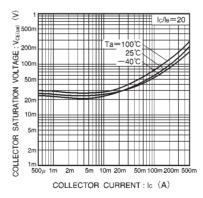


Fig.2 Collector-emitter saturation voltage vs. collector current