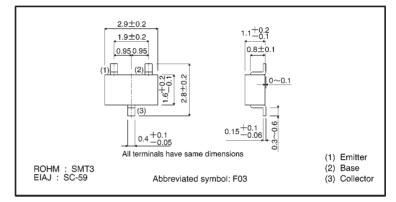
Digital transistors (built-in resistor) DTD143TK

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.

External dimensions (Units: mm)



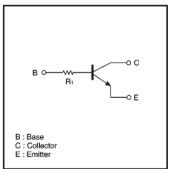
Structure

NPN digital transistor (Built-in resistor type)

● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Unit	
Collector-base voltage	Vсво	50	V
Collector-emitter voltage	VCEO	40	V
Emitter-base voltage	VEBO	5	V
Collector current	Ic	500	mA
Collector power dissipation	Pc	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55∼+150	°C

Equivalent circuit



Transistors DTD143TK

●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	I _E =50 μ A
Collector cutoff current	Ісво	_	_	0.5	μΑ	V _{CB} =50V
Emitter cutoff current	ІЕВО	_	_	0.5	μΑ	V _{EB} =4V
Collector-emitter saturation voltage	VCE(sat)	_	_	0.3	V	Ic/I _B =50mA/2.5mA
DC current transfer ratio	hfe	100	250	600	_	VcE=5V, Ic=50mA
Input resistance	Rı	3.29	4.7	6.11	kΩ	_
Transition frequency	fτ	_	200	_	MHz	VcE=10V, IE=-50mA, f=100MHz *

^{*} Transition frequency of the device

Packaging specifications

	Package	SMT3
	Packaging type	Taping
	Code	T146
Part No.	Basic ordering unit (pieces)	3000
DTD143TK		0

Electrical characteristic curves

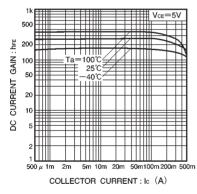


Fig.1 DC current gain vs. collector current

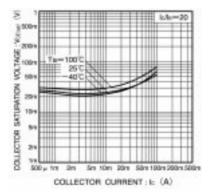


Fig.2 Collector-emitter saturation voltage vs. collector current