Digital transistor (built-in resistor)

DTA125TUA / DTA125TKA / DTA125TSA

●Features

1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
2) The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
3) Only the on / off conditions need to be set for operation, making device design easy.
4) Higher mounting densities can be achieved.

●Absolute maximum ratings (Ta = 25°C)

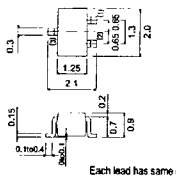
Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	−50	V
Collector-emitter voltage		V_{CEO}	−50	V
Emitter-base voltage		V_{EBO}	−5	V
Collector current		I_C	−100	mA
Collector power dissipation	DTA125TUA / DTA125TKA	P_C	200	mW
	DTA125TSA		300	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 ~ +150	°C

●Package, marking, and packaging specifications

Part No.	DTA125TUA	DTA125TKA	DTA125TSA
Package	UMT3	SMT3	SPT
Marking	9A	9A	–
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

●External dimensions (Units : mm)

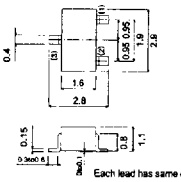
DTA125TUA



ROHM : UMT3
EIAJ : SC-70

(1) Emitter(Source)
(2) Base(Gate)
(3) Collector(Drain)

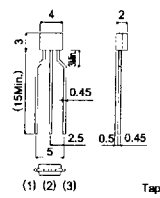
DTA125TKA



ROHM : SMT3
EIAJ : SC-59

(1) Emitter(Source)
(2) Base(Gate)
(3) Collector(Drain)

DTA125TSA



ROHM : SPT
EIAJ : SC-72

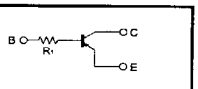
(1) Emitter
(2) Collector
(3) Base

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−50	–	–	V	I_C = −50μA
Collector-emitter breakdown voltage	BV_{CEO}	−50	–	–	V	I_C = −1mA
Emitter-base breakdown voltage	BV_{EBO}	−5	–	–	V	I_E = −50μA
Collector cutoff current	I_{CBO}	–	–	−0.5	μA	V_{CB} = −50V
Emitter cutoff current	I_{EBO}	–	–	−0.5	μA	V_{EB} = −4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	−0.3	V	I_C = −0.5mA , I_B = −0.05mA
DC current transfer ratio	h_{FE}	100	250	600	–	I_C = −1mA , V_{CE} = −5V
Input resistance	R_1	140	200	260	kΩ	–
Transition frequency	f_T	–	250	–	MHz	V_{CE} = −10V , I_E = 5mA , f = 100MHz *

* Transition frequency of the device.

●Circuit schematic



E : Emitter
C : Collector
B : Base