Digital transistors (built-in resistor)

DTC323TU / DTC323TK / DTC323TS

●Features

In addition to the features of regular digital transistors,

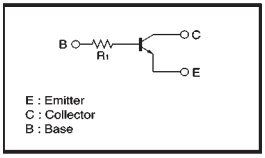
1) Low $V_{CE(sat)}$ makes these transistors ideal for muting circuits. (Typ. 0.04V at I_C/I_B=50/2.5mA)

2) They can be used at high current. ($I_{CMax.}$ =600mA)

●Absolute maximum ratings (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CEO}	15	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	600	mA
Collector power dissipation	DTC323TU / DTC323TK	P_C	200	mW
	DTC323TS		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~+150	℃

●Circuit schematic



E : Emitter
C : Collector
B : Base

●Package, marking, and packaging specifications

Part No.	DTC323TU	DTC323TK	DTC323TS
Package	UMT3	SMT3	SPT
Marking	H02	H02	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	15	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	I_E=50 μA
Collector cutoff current	I_{CBO}	—	—	0.5	μA	V_{CB}=20V
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	40	80	mV	I_C/I_B=50mA/2.5mA
DC current transfer ratio	h_{FE}	100	250	600	—	I_C=50mA , V_{CE}=5V
Input resistance	R_1	1.64	2.2	2.86	kΩ	—
Transition frequency	f_T	—	200	—	MHz	V_{CE}=10V , I_E=−50mA , f=100MHz ＊
Output on resistance	Ron	—	0.65	—	Ω	V_I=7V , R_L=1kΩ , f=1kHz

＊ Transition frequency of the device.

(96-348-C323T)

Digital transistors (built-in resistor)

DTC343TK / DTC343TS

●Features

In addition to the features of regular digital transistors,

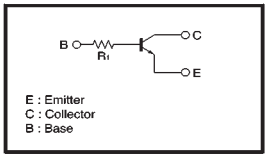
1) Low $V_{CE(sat)}$ makes these transistors ideal for muting circuits. (Typ. 0.04V at I_C/I_B=50/2.5mA)

2) They can be used at high current. ($I_{CMax.}$ =600mA)

●Absolute maximum ratings (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CEO}	15	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	600	mA
Collector power dissipation	DTC343TK	P_C	200	mW
	DTC343TS		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~+150	℃

●Circuit schematic



E : Emitter
C : Collector
B : Base

●Package, marking, and packaging specifications

Part No.	DTC343TK	DTC343TS
Package	SMT3	SPT
Marking	H03	—
Packaging code	T146	TP
Basic ordering unit (pieces)	3000	5000

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	15	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	I_E=50 μA
Collector cutoff current	I_{CBO}	—	—	0.5	μA	V_{CB}=20V
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	40	80	mV	I_C=50mA , I_B=2.5mA
DC current transfer ratio	h_{FE}	100	250	600	—	I_C=50mA , V_{CE}=5V
Input resistance	R_1	3.29	4.7	6.11	kΩ	—
Transition frequency	f_T	—	200	—	MHz	V_{CE}=10V , I_E=−50mA , f=100MHz ＊
Output on resistance	Ron	—	0.95	—	Ω	V_I=7V , R=1kΩ , f=1kHz

＊ Transition frequency of the device.

(94S-751-C343T)