

Digital transistors (built-in resistor)

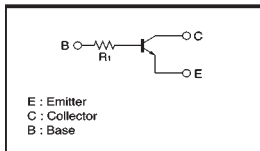
DTC323TU / DTC323TK / DTC323TS

●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 $I_C/I_E=50/2.5mA$)
- 2) They can be used at high current. ($I_{CMax.}=600mA$)

●Circuit schematic



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	15	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E=50\mu A$
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	$I_C/I_E=50mA/2.5mA$
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	k Ω	—
Transition frequency	f_T	—	200	—	MHz	$V_{CE}=10V, I_E=-50mA, f=100MHz$ *
Output on resistance	R_{on}	—	0.65	—	Ω	$V_I=7V, R_L=1k\Omega, f=1kHz$

●Absolute maximum ratings (Ta=25°C)

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 DTC323TS	200 300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~+150	°C

●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