

Digital transistors (built-in resistor)

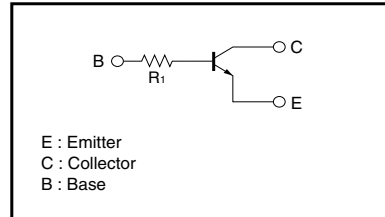
DTC343TK / DTC343TS

●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. ($I_{CMax.}=600mA$)

●Circuit schematic



●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	DTC343TK	P_C	200	mW
	DTC343TS		300	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	-55 to +150	°C

●Package, marking, and packaging specifications

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

●External 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	$I_C=50mA, I_B=2.5mA$
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	k Ω	—
Transition frequency	f_T	—	200	—	MHz	$V_{CE}=10V, I_E=-50mA, f=100MHz$ *
Output on resistance	R_{on}	—	0.95	—	Ω	$V_I=7V, R=1k\Omega, f=1kHz$

* Transition frequency of the device.

Transistors

●Electrical characteristics curves

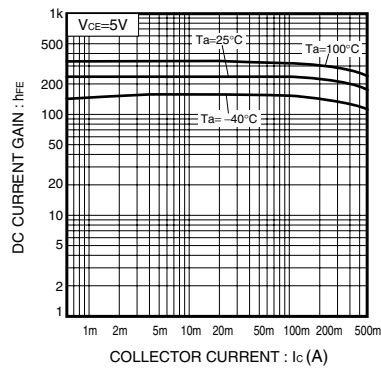


Fig.1 DC current gain vs. Collector current

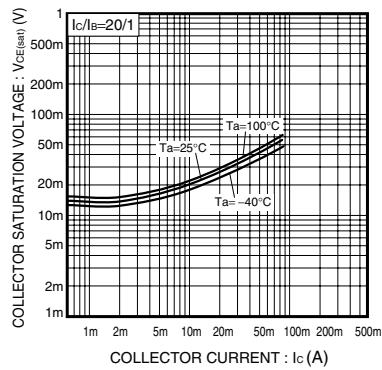


Fig.2 Collector-emitter saturation voltage vs. Collector current

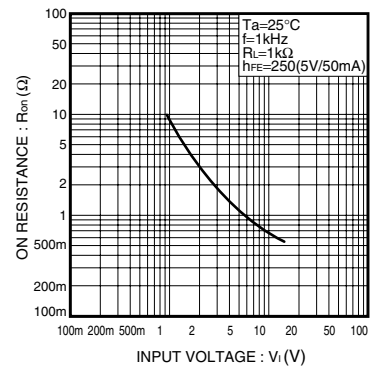


Fig.3 ON resistance vs. Input voltage

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