Digital transistors (built-in resistor)
DTC363TK / DTC363TS

●Features

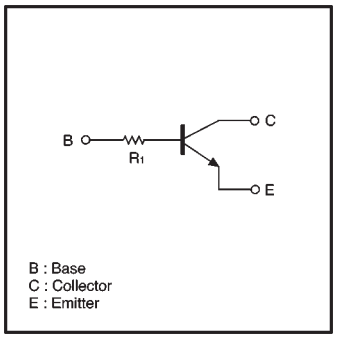
In addition to the features of regular digital transistors,

1) Low $V_{CE(sat)}$ makes these transistors optimal for muting circuits.
   $V_{CE(sat)}$ = 40mV (Typ.)
   (I_C / I_B = 50mA / 2.5mA)
2) They can be used at high current (I_C = 600mA).

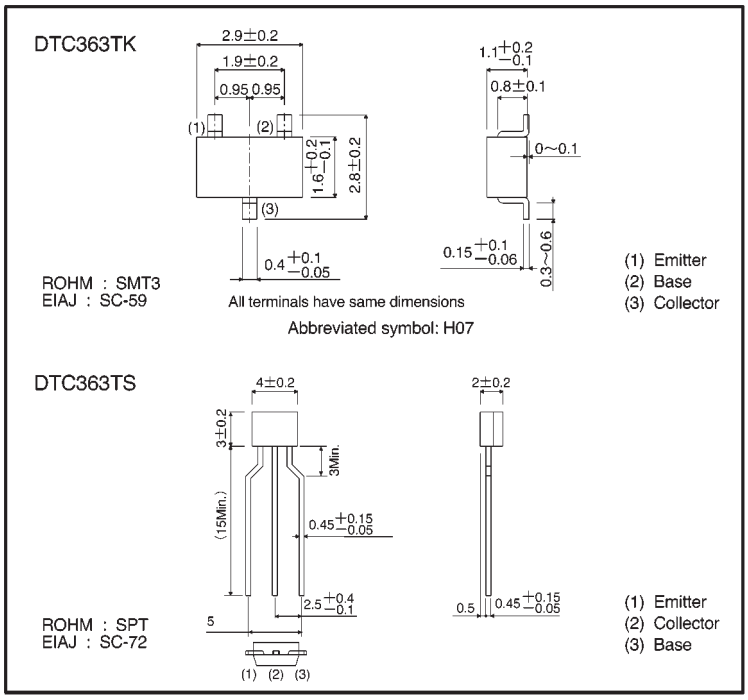
●Structure

NPN digital transistor
(Built-in resistor type)

●Equivalent circuit



●External dimensions (Units: mm)



(96-352-C363T)

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits(DTC363T□)		Unit
		K	S	
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	P_C	200	300	mW
Junction temperature	Tj	150		℃
Storage temperature	Tstg	−55～+150		℃

●Electrical characteristics (Ta = 25°C)

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	—	V_{CE}=5V, I_C=50mA
Input resistance	R_1	4.76	6.8	8.84	kΩ	—
Transition frequency	f_T	—	200	—	MHz	V_{CE}=10V, I_E=−50mA, f=100MHz ＊
Output "ON" resistance	R_{on}	—	1.25	—	Ω	V_I=7V, R_L=1kΩ, f=1kHz

＊ Transition frequency of the device

●Packaging specifications

	Package	SMT3	SPT
	Packaging type	Taping	Taping
	Code	T146	TP
Part No.	Basic ordering unit (pieces)	3000	5000
DTC363TK		○	—
DTC363TS		—	○

●R_{on} measurement circuit

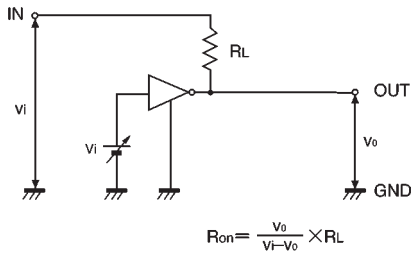


Fig.1 Input "on" resistance (R_{on}) measurement circuit

●Electrical characteristic curves

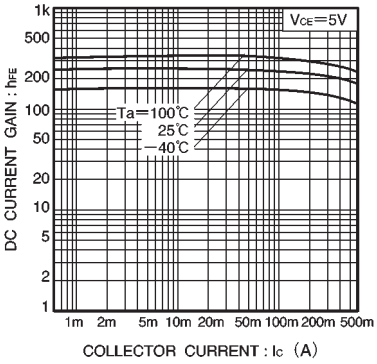


Fig.2 DC current gain vs. collector current

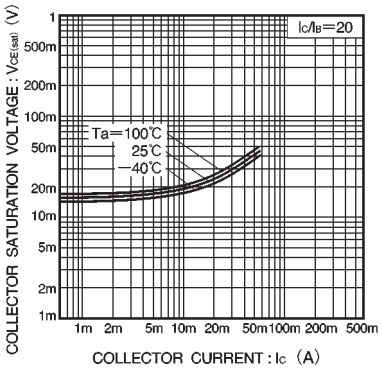


Fig.3 Collector-emitter saturation voltage vs. collector current

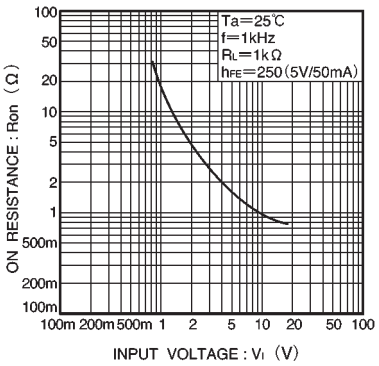


Fig.4 "ON" resistance vs. input voltage