

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

HN1C03F

For Muting And Switching Applications

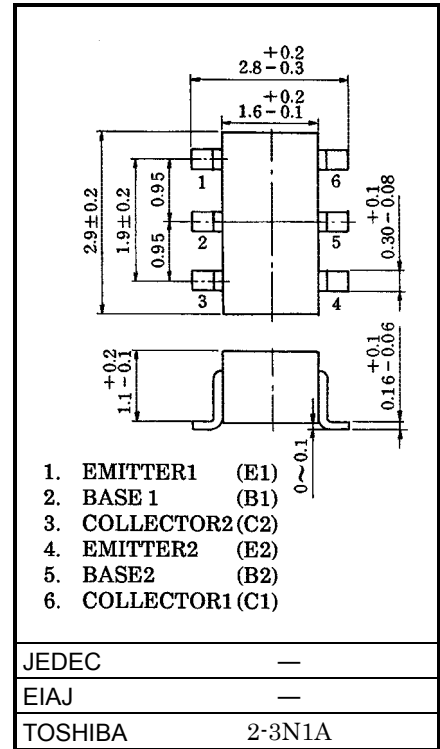
- Including two devices in SM6 (Super mini type with 6 leads)
- High emitter-base voltage: $V_{EBO} = 25V$ (min)
- High reverse h_{FE} : reverse $h_{FE} = 150$ (typ.) ($V_{CE} = -2V, I_C = -4mA$)
- Low on resistance: $R_{ON} = 1\Omega$ (typ.) ($I_B = 5mA$)

Maximum Ratings ($T_a = 25^\circ C$) (Q1, Q2 Common)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	25	V
Collector current	I_C	300	mA
Base current	I_B	60	mA
Collector power dissipation	P_C^*	300	mW
Junction temperature	T_j	150	$^\circ C$
Storage temperature range	T_{stg}	-55~150	$^\circ C$

* Total rating

Unit in mm



1. EMITTER1 (E1)
2. BASE 1 (B1)
3. COLLECTOR2 (C2)
4. EMITTER2 (E2)
5. BASE2 (B2)
6. COLLECTOR1 (C1)

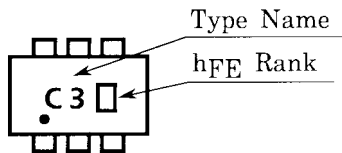
Weight: 0.015g

Electrical Characteristics (Ta = 25°C) (Q1,Q2 Common)

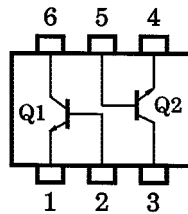
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	$V_{CB} = 50V, I_E = 0$	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	—	$V_{EB} = 25V, I_C = 0$	—	—	0.1	μA
DC current gain	h_{FE} (Note)	—	$V_{CE} = 2V, I_C = 4mA$	200	—	1200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = 30mA, I_B = 3mA$	—	0.042	0.1	V
Base-emitter voltage	V_{BE}	—	$V_{CE} = 2V, I_C = 4mA$	—	0.61	—	V
Transition frequency	f_T	—	$V_{CE} = 6V, I_C = 4mA$	—	30	—	MHz
Collector output capacitance	C_{ob}	—	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	4.8	7	pF
Switching time	Turn-on time	—	<p>DUTY CYCLE $\leq 2\%$</p>	—	160	—	ns
	Storage Time	—		—	500	—	
	Fall time	—		—	—	130	

Note: h_{FE} Classification
 A: 200~700, B: 350~1200

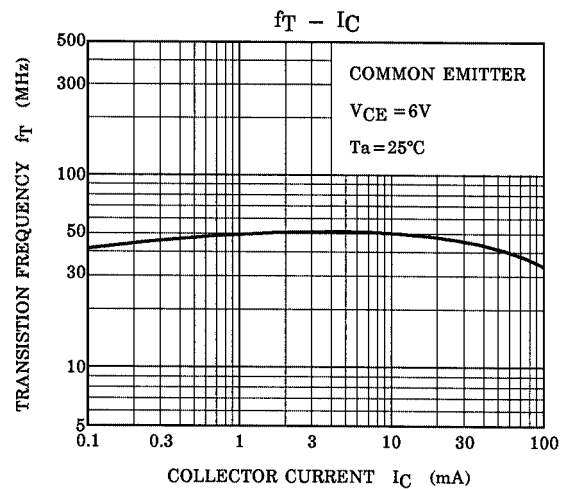
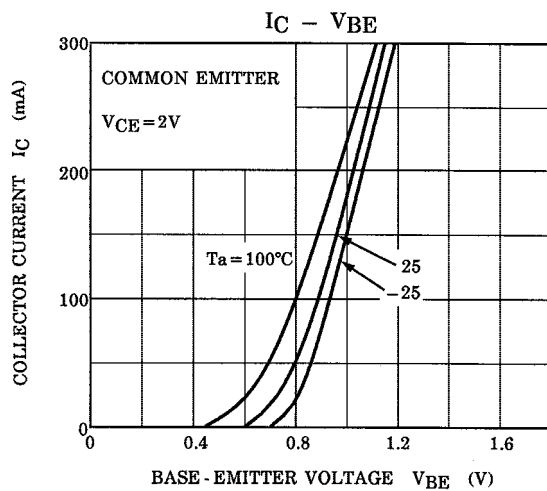
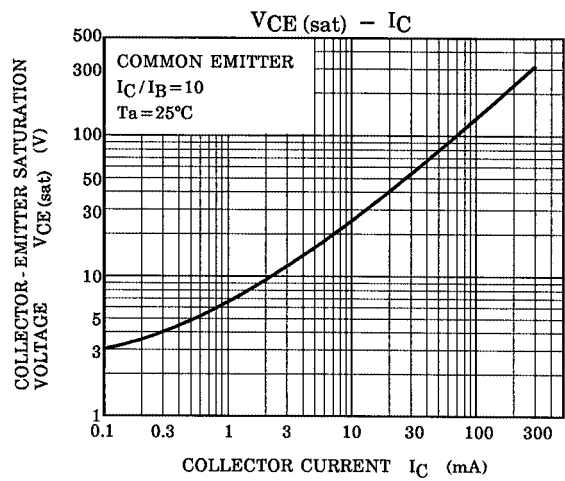
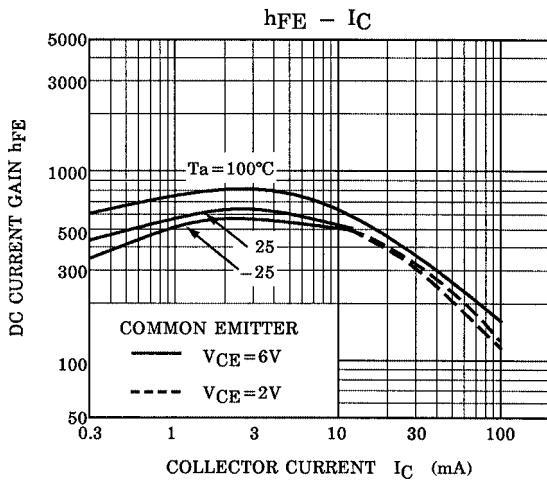
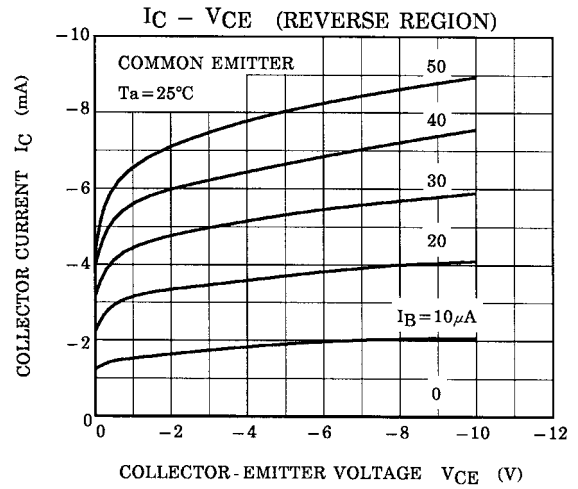
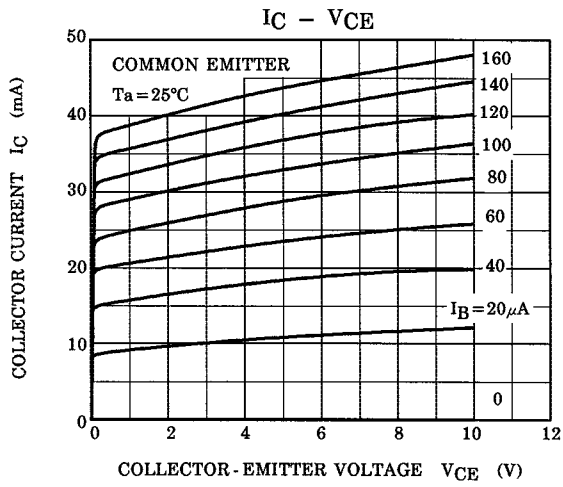
Marking



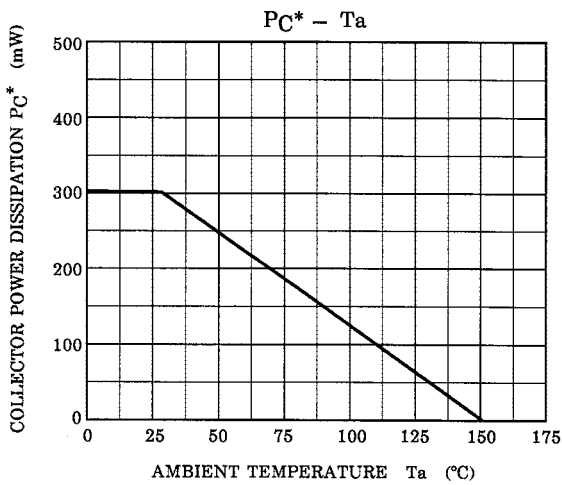
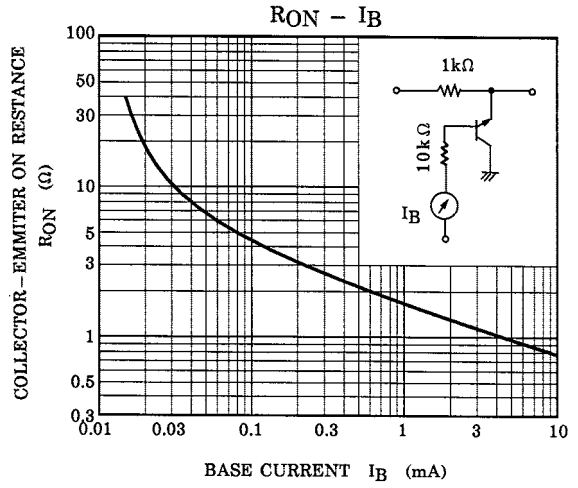
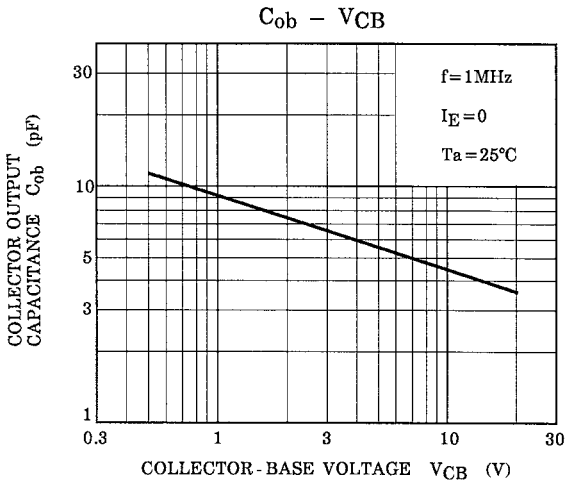
Equivalent Circuit (Top View)



(Q1,Q2 Common)



(Q1,Q2 Common)



*: Total Rating

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