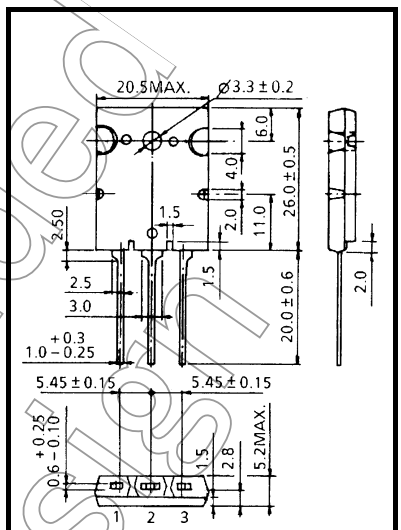
TOSHIBA Transistor Silicon NPN Triple Diffused Mesa Type

2SC5748

Horizontal Deflection Output for HDTV and Digital TV.

Unit: mm

- High voltage: V_{CBO} = 2000 V
- Low saturation voltage: $V_{CE\ (sat)}$ = 3 V (max)
- High speed: t_f = 0.15 μs (typ.)



1. Base
2. Collector (Heat sink)
3. Emitter

JEDEC	—
JEITA	—
TOSHIBA	2-21F2A

Weight: 9.75 g (typ.)

Absolute Maximum Ratings (Tc = 25°C)

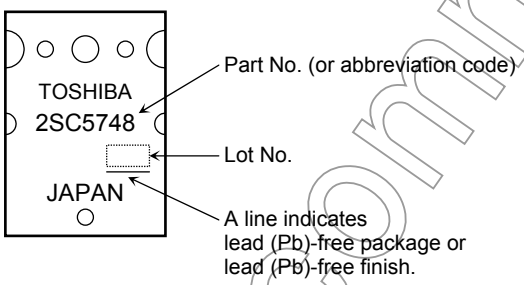
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	2000	V
Collector-emitter voltage		V_{CEO}	900	V
Emitter-base voltage		V_{EBO}	5	V
Collector current	DC	I_C	16	A
	Pulse	I_{CP}	32	
Base current		I_B	8	A
Collector power dissipation		P_C	210	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55~150	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

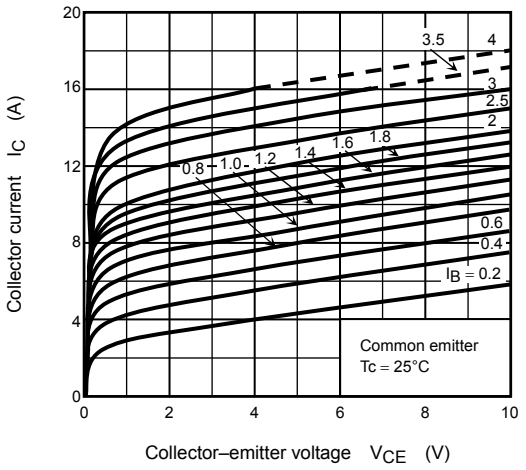
Electrical Characteristics (Tc = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	V_{CB} = 2000 V, I_E = 0	—	—	1	mA
Emitter cut-off current		I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	100	μA
Collector-emitter breakdown voltage		$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	900	—	—	V
DC current gain		h_{FE} (1)	V_{CE} = 5 V, I_C = 2 A	20	—	55	—
		h_{FE} (2)	V_{CE} = 5 V, I_C = 8 A	7	—	12.5	
		h_{FE} (3)	V_{CE} = 5 V, I_C = 12 A	4.8		7.5	
Collector-emitter saturation voltage		$V_{CE\ (sat)}$	I_C = 12 A, I_B = 3 A	—	—	3	V
Base-emitter saturation voltage		$V_{BE\ (sat)}$	I_C = 12 A, I_B = 3 A	—	—	1.3	V
Transition frequency		f_T	V_{CE} = 10 V, I_C = 0.1 A	—	2	—	MHz
Collector output capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	310	—	pF
Switching time	Storage time	t_{stg}	I_{CP} = 8 A, $I_{B1\ (end)}$ = 1.2 A, f_H = 32 kHz	—	4.0	5.0	μs
	Fall time	t_f		—	0.15	0.35	

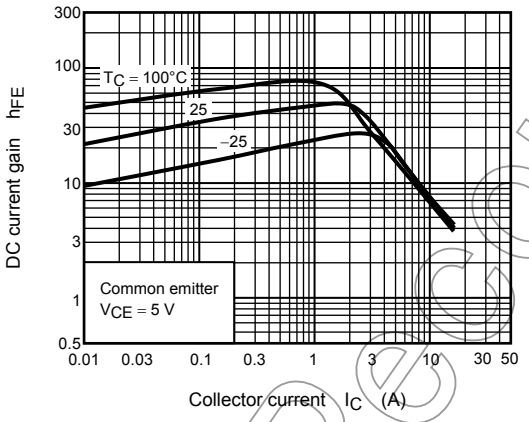
Marking



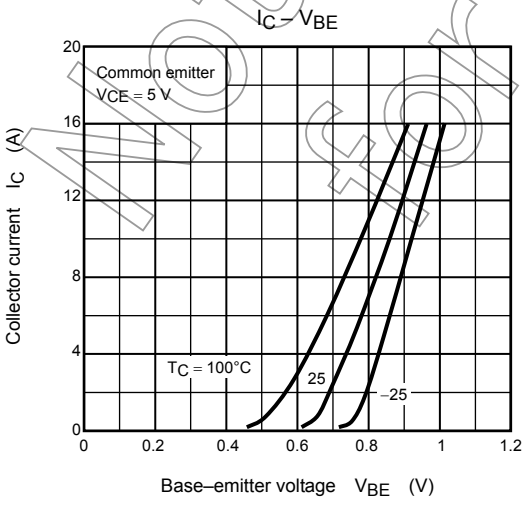
$I_C - V_{CE}$



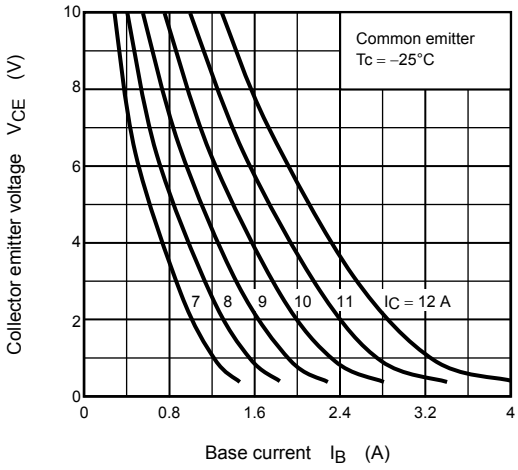
$h_{FE} - I_C$



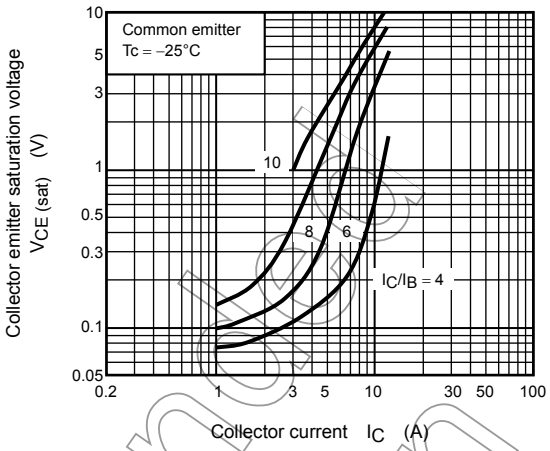
$I_C - V_{BE}$



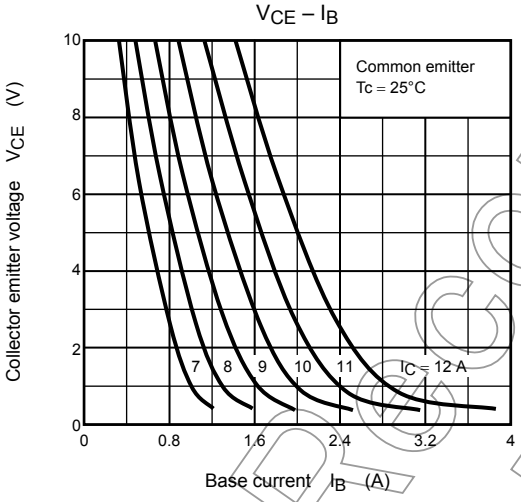
$V_{CE} - I_B$



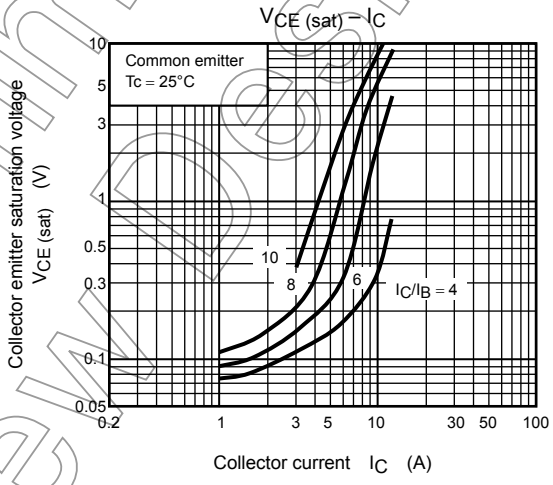
$V_{CE\ (sat)} - I_C$



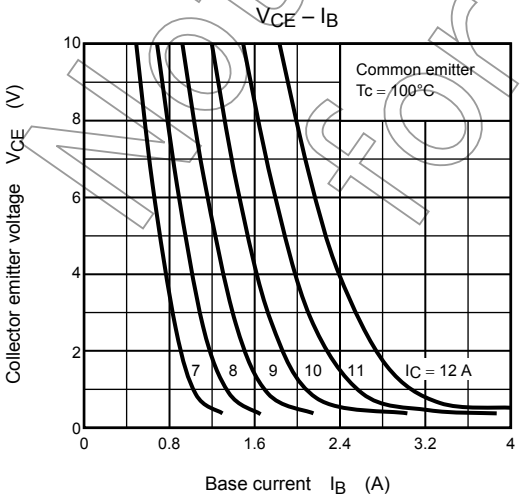
$V_{CE} - I_B$



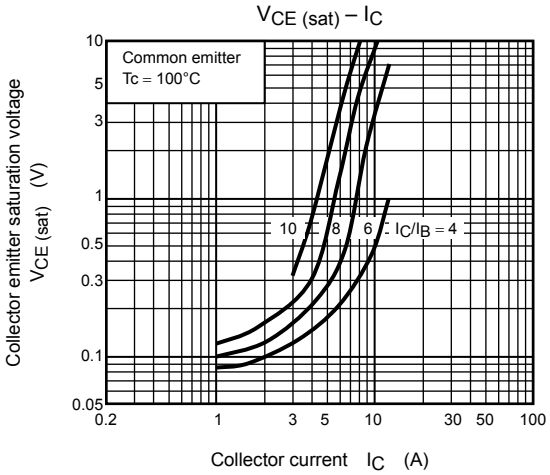
$V_{CE\ (sat)} - I_C$



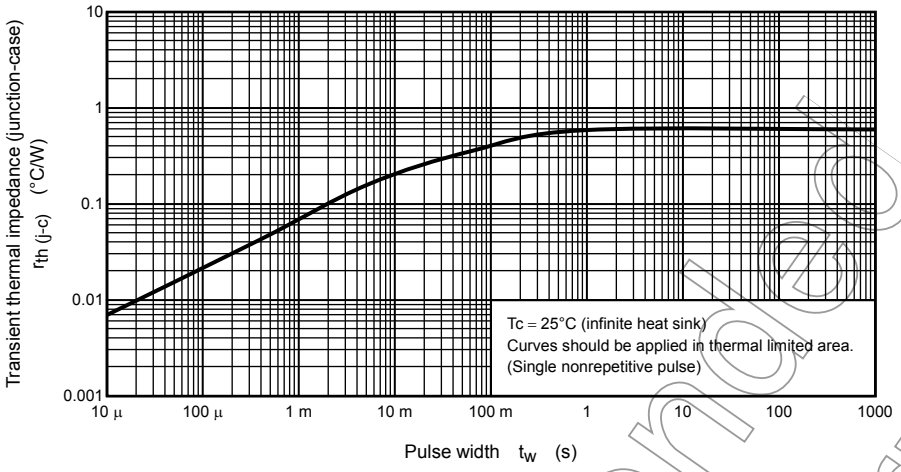
$V_{CE} - I_B$



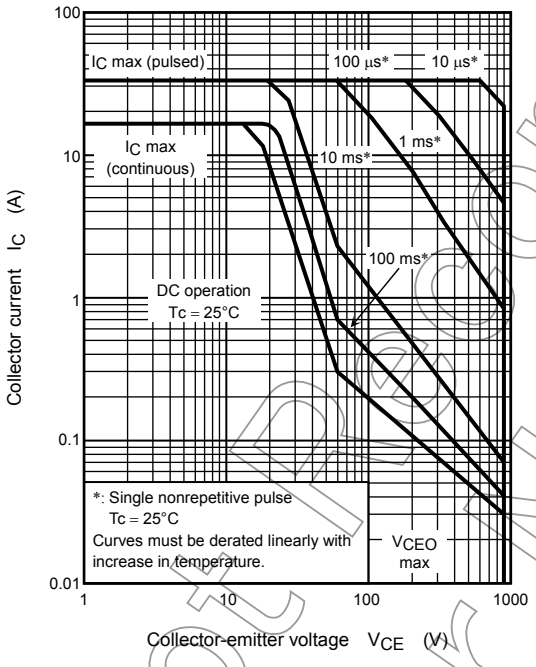
$V_{CE\ (sat)} - I_C$



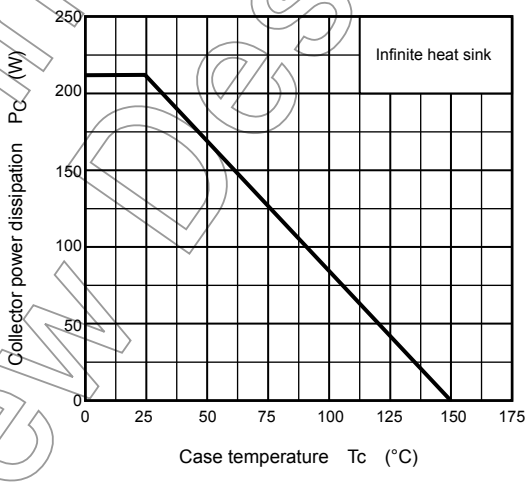
$r_{th\ (j\text{-}c)} - t_w$



Safe Operating Area



$P_C - Tc$



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