TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

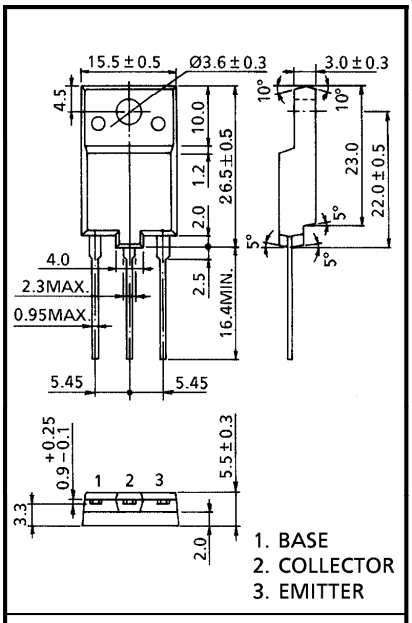
2SC5149

HORIZONTAL DEFLECTION OUTPUT FOR MEDIUM RESOLUTION DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Speed : $t_f = 0.2\ \mu s$ (Typ.)
- High Voltage : $V_{CBO} = 1500$ V
- Low Saturation Voltage : $V_{CE\ (sat)} = 5$ V (Max.)
- Bult-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

Unit in mm



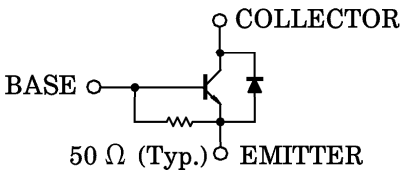
JEDEC	—
EIAJ	—
TOSHIBA	2-16E3A

Weight : 5.5 g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	1500	V
Collector-Emitter Voltage		V_{CEO}	600	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	8	A
	Pulse	I_{CP}	16	
Base Current		I_B	4	A
Collector Power Dissipation (Tc = 25°C)		P_C	50	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

EQUIVALENT CIRCUIT



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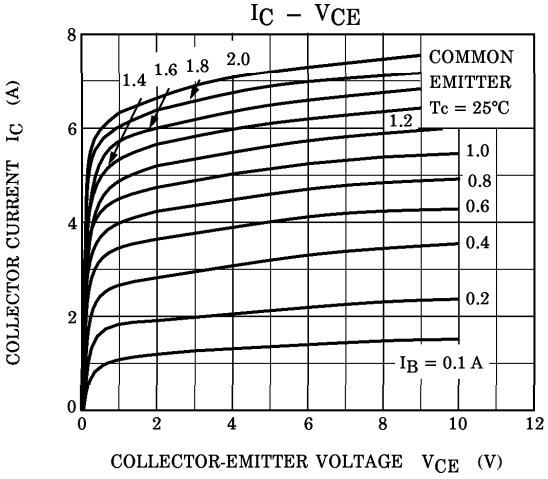
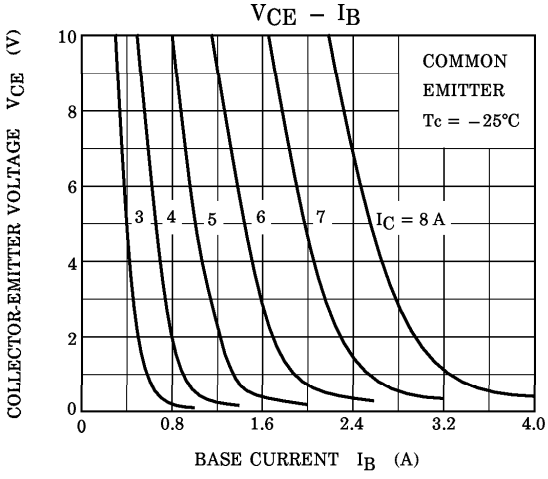
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = 1500 V, I_E = 0	—	—	1	mA
Emitter Cut-off Current		I_{EBO}	V_{EB} = 5 V, I_C = 0	66	—	200	mA
Emitter-Base Breakdown Voltage		V_{EBO}	I_E = 400 mA, I_C = 0	5	—	—	V
DC Current Gain		$h_{FE\ (1)}$	V_{CE} = 5 V, I_C = 1 A	8	—	25	
		$h_{FE\ (2)}$	V_{CE} = 5 V, I_C = 5 A	3.8	—	8.0	
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 5 A, I_B = 1.3 A	—	—	5	V
Base-Emitter Saturation Voltage		$V_{BE\ (sat)}$	I_C = 5 A, I_B = 1.3 A	—	1.0	1.3	V
Forward Voltage (Damper Diode)		$-V_F$	I_F = 5 A	—	1.35	1.8	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	—	110	—	pF
Switching Time	Storage Time	t_{stg}	I_{CP} = 5 A, $I_{B1\ (end)}$ = 1.1 A, fH = 31.5 kHz	—	4	6	μs
	Fall Time	t_f		—	0.2	0.5	

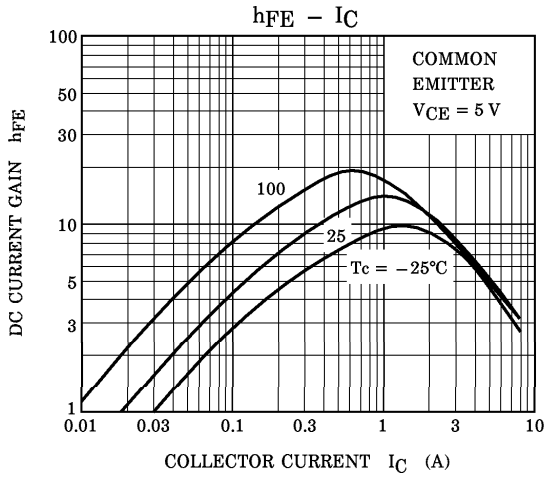
$I_C - V_{CE}$



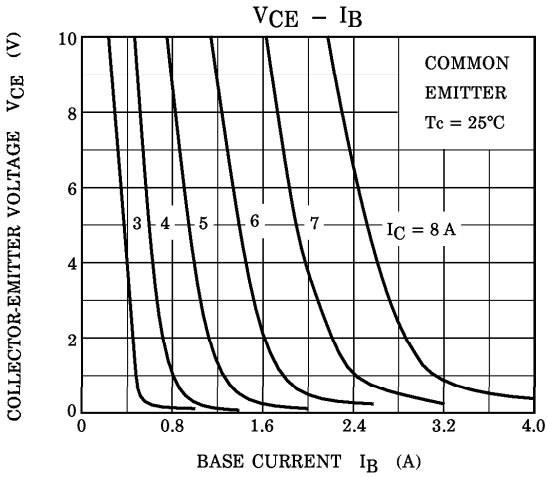
$V_{CE} - I_B$



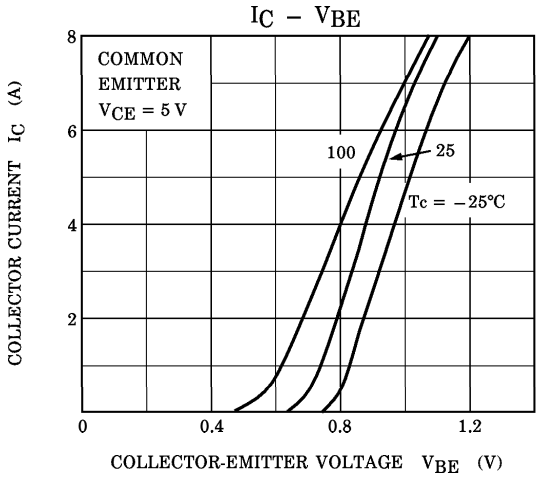
$h_{FE} - I_C$



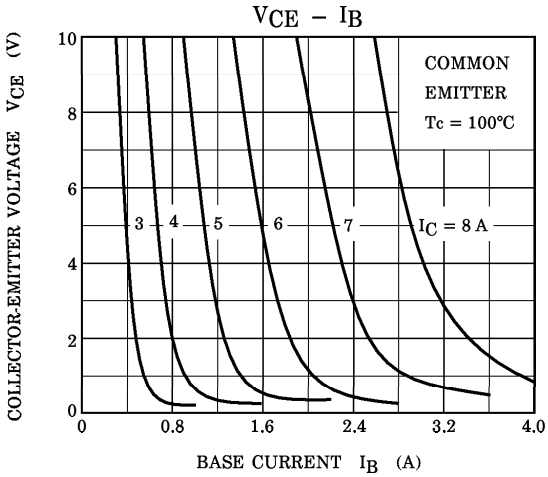
$V_{CE} - I_B$



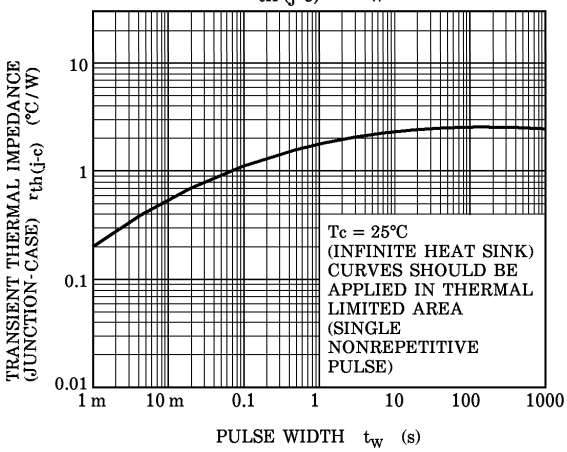
$I_C - V_{BE}$



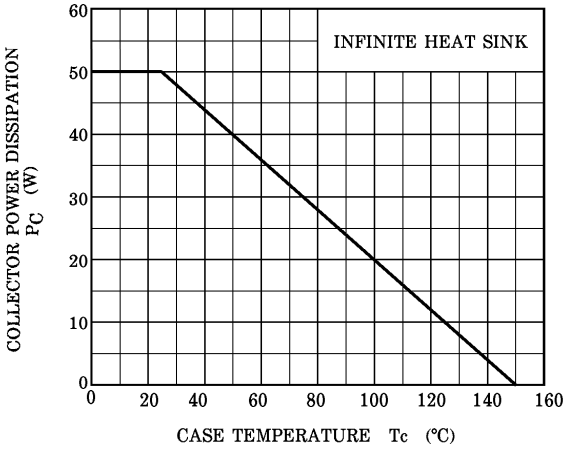
$V_{CE} - I_B$



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



$P_C - Tc$



SAFE OPERATING AREA