TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

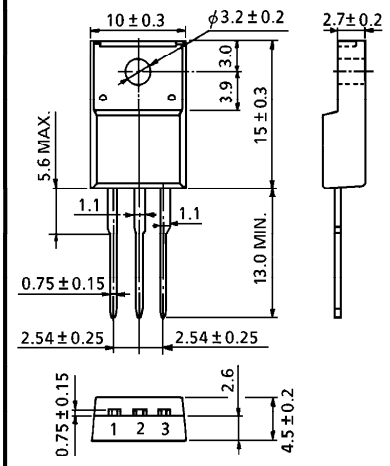
2SC4678

HIGH CHROMA OUTPUT APPLICATIONS

VIDEO OUTPUT STAGE IN HIGH RESOLUTION DISPLAY

- High Transition Frequency : f_T = 240MHz (Typ.)
- Low Collector Output Capacitance : C_{ob} = 2.4pF (Typ.) (V_{CB} = 30V)
- High Voltage : V_{CEO} = 300V
- Collector Metal (Fin) is Fully Covered with Mold Resin.

Unit in mm



1. BASE
2. COLLECTOR
3. EMITTER

JEDEC	—
EIAJ	SC-67
TOSHIBA	2-10R1A

Weight : 1.7g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	300	V
Collector-Emitter Voltage		V_{CEO}	300	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	50	mA
	Pulse	I_{CP}	100	
Base Current		I_B	50	mA
Collector Power Dissipation	Tc = 25°C	P_C	10	W
	Ta = 25°C		2	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = 300V, I_E = 0	—	—	100	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	—	—	10	μA
DC Current Gain	$h_{FE\ (1)}$	V_{CE} = 10V, I_C = 10mA	80	—	200	
	$h_{FE\ (2)}$	V_{CE} = 10V, I_C = 20mA	80	—	—	
Collector-Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C = 20mA, I_B = 2mA	—	—	0.5	V
Base-Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C = 20mA, I_B = 2mA	—	—	1.0	V
Transition Frequency	f_T	V_{CE} = 10V, I_C = 20mA	—	240	—	MHz
Collector Output Capacitance	C_{ob}	V_{CB} = 30V, f = 1MHz, I_E = 0	—	2.4	3.0	pF

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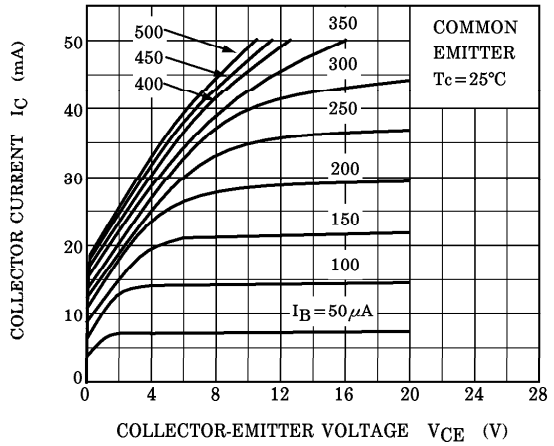
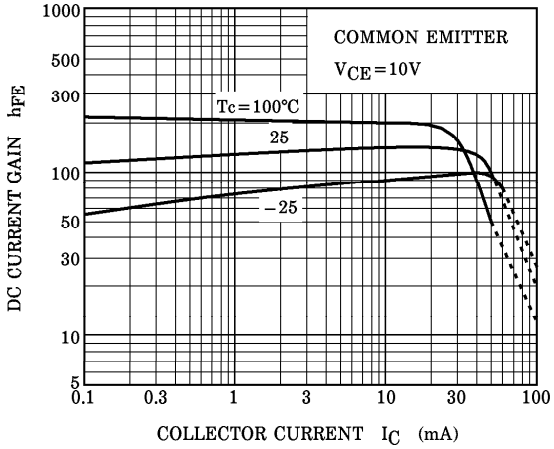
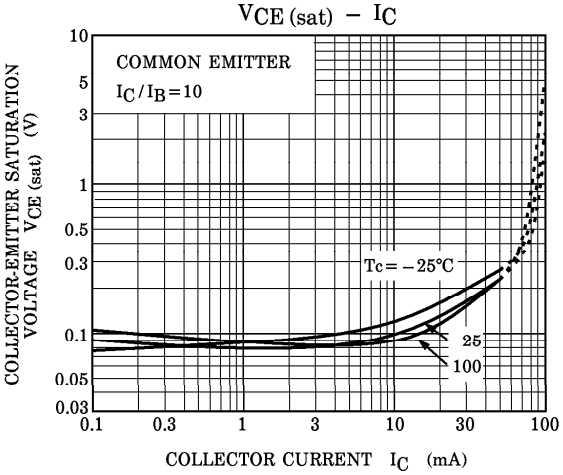
I_C – V_{CE}



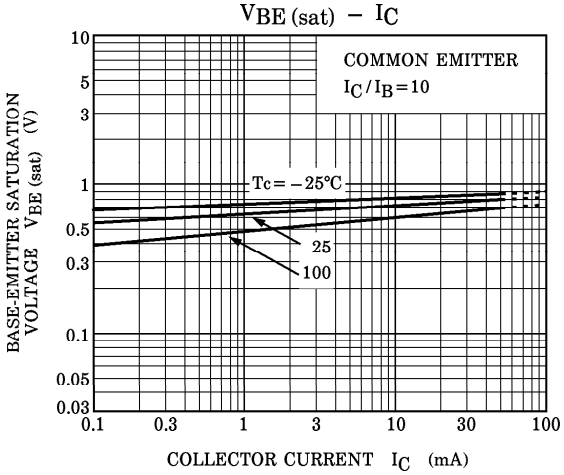
h_{FE} – I_C



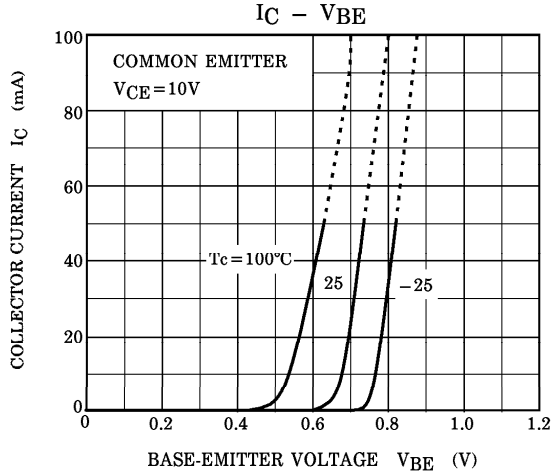
$V_{CE\,(sat)}$ – I_C



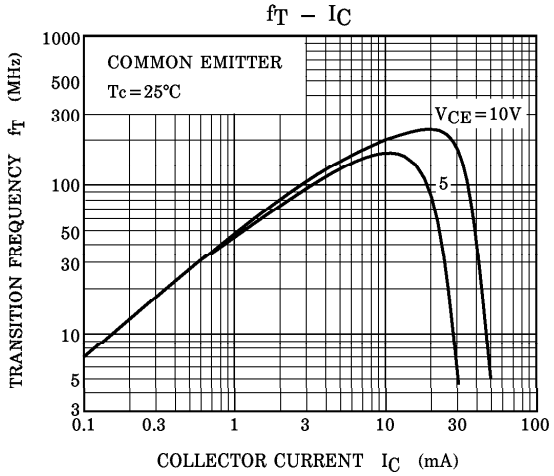
$V_{BE\,(sat)}$ – I_C



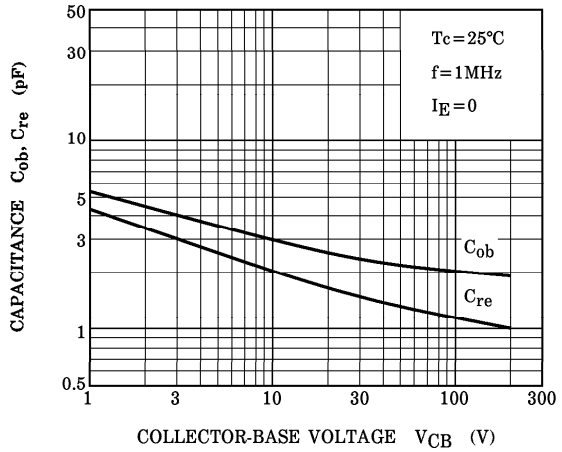
I_C – V_{BE}



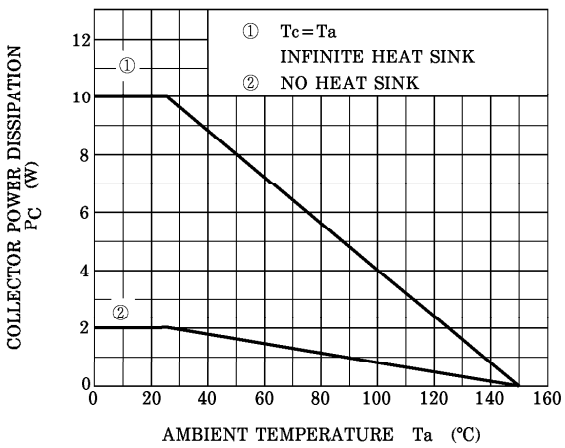
f_T – I_C



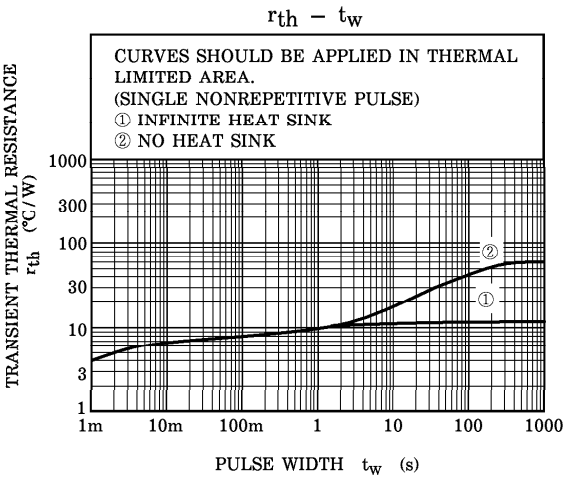
C_{ob}, C_{re} – V_{CB}



P_C – Ta



r_{th} – t_w



SAFE OPERATING AREA