

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC4678

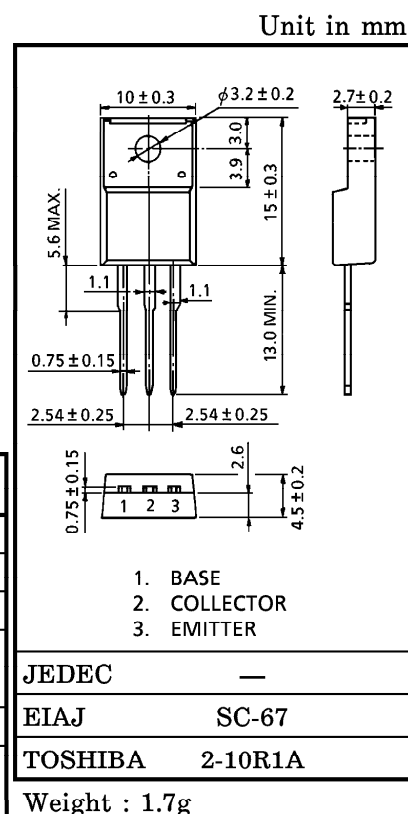
HIGH CHROMA OUTPUT APPLICATIONS

VIDEO OUTPUT STAGE IN HIGH RESOLUTION DISPLAY

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

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

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	$T_c = 25^\circ\text{C}$	P_C	10	W
	$T_a = 25^\circ\text{C}$		2	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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

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