

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

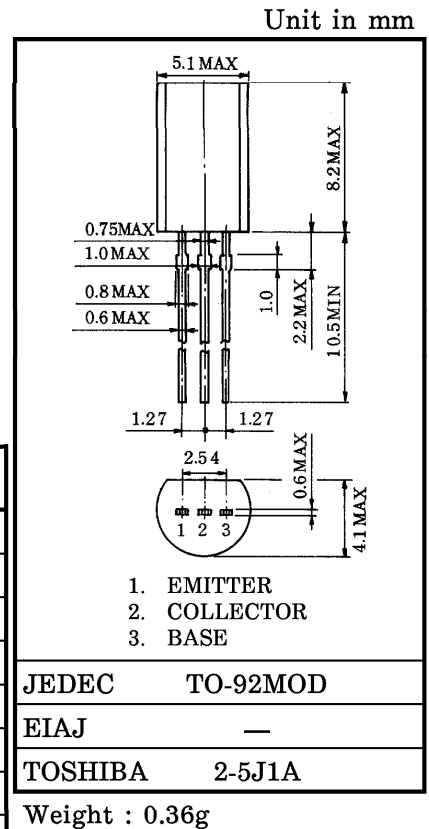
# 2SA1013

COLOR TV VERT. DEFLECTION OUTPUT APPLICATIONS.  
 COLOR TV CLASS B SOUND OUTPUT APPLICATIONS.

- High Voltage :  $V_{CEO} = -160V$
- Large Continuous Collector Current Capability.
- Recommended for Vert. Deflection Output & Sound Output Applications for Line Operated TV.
- Complementary to 2SC2383.

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

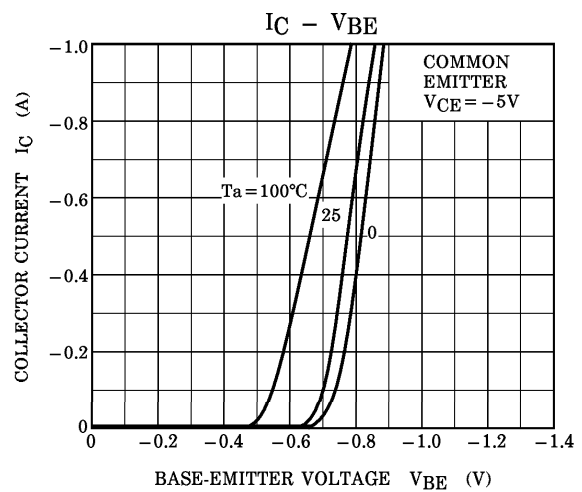
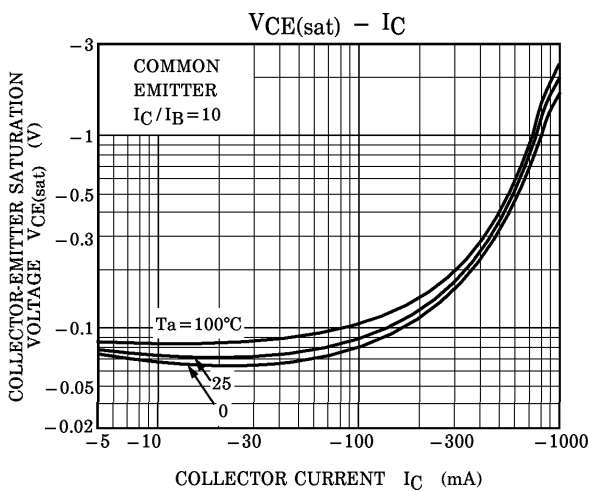
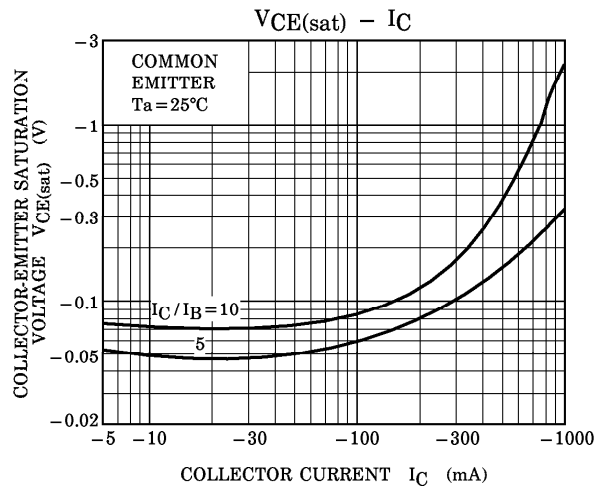
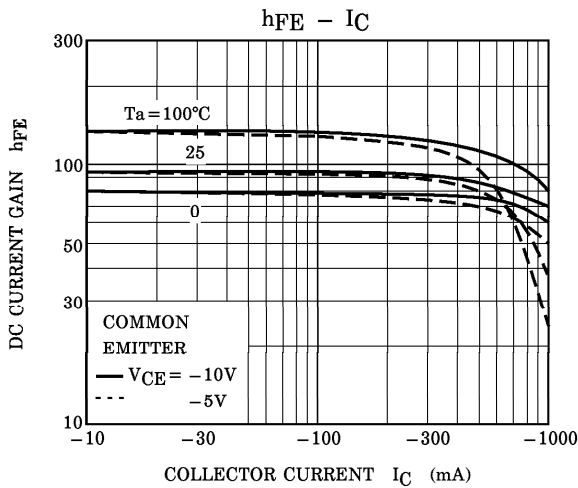
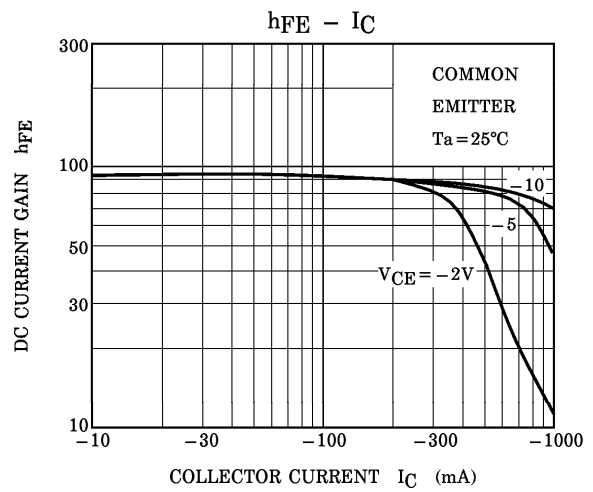
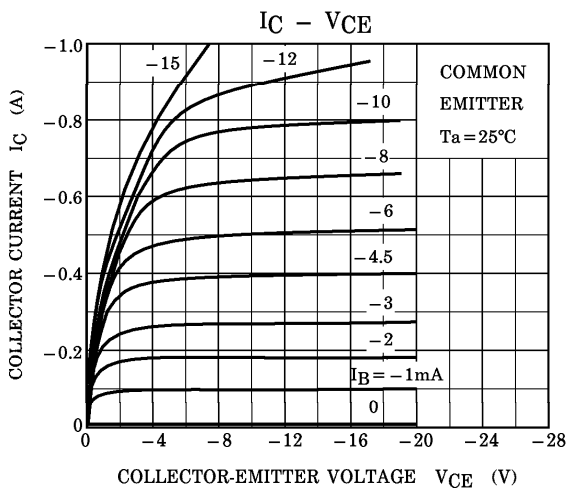
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	-160	V
Collector-Emitter Voltage	$V_{CEO}$	-160	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Collector Current	$I_C$	-1	A
Base Current	$I_B$	-0.5	A
Collector Power Dissipation	$P_C$	900	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

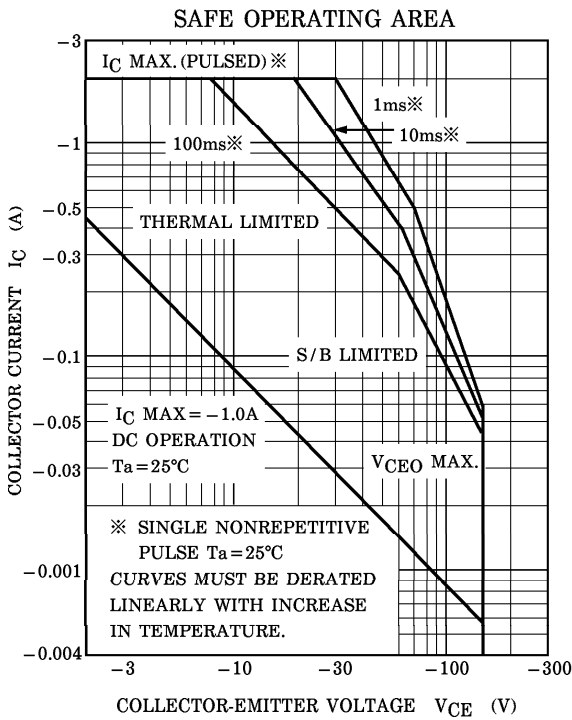
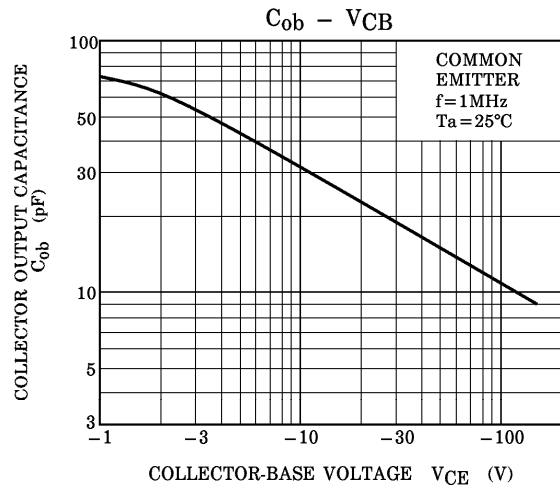
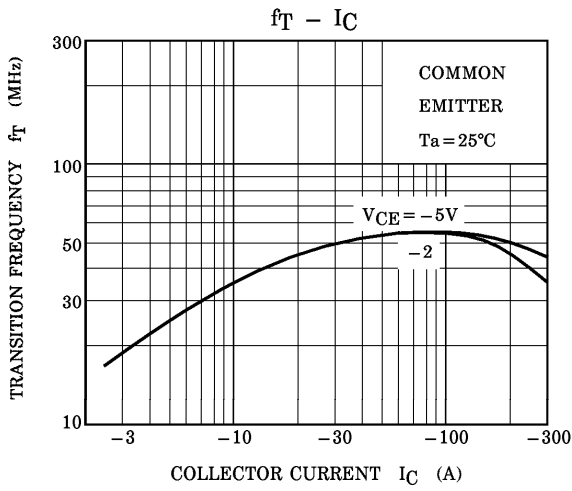


ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -150V, I_E = 0$	—	—	-1.0	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -6V, I_C = 0$	—	—	-1.0	$\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10mA, I_B = 0$	-160	—	—	V
DC Current Gain	$h_{FE}$ (Note)	$V_{CE} = -5V, I_C = -200mA$	60	—	200	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500mA, I_B = -50mA$	—	—	-1.5	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = -5V, I_C = -5mA$	-0.45	—	-0.75	V
Transition Frequency	$f_T$	$V_{CE} = -5V, I_C = -200mA$	15	50	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	—	35	pF

Note :  $h_{FE}$  Classification R : 60~120, O : 100~200





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