

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

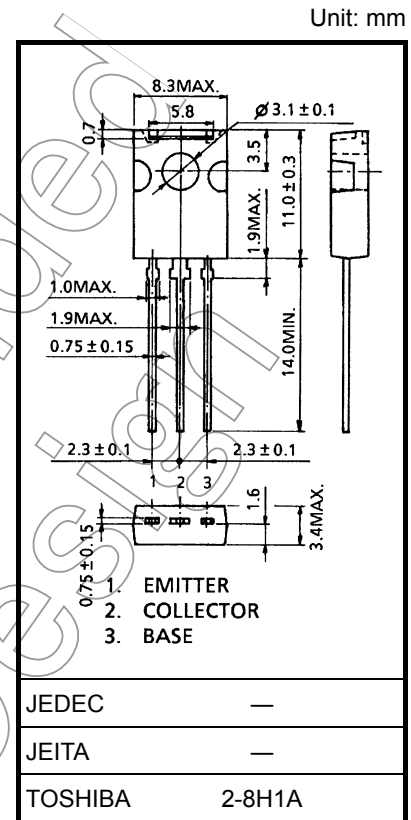
# 2SA1408

Color TV Vertical Deflection Output Applications  
 Color TV Class-B Sound Output Applications

- Large collector current and collector power dissipation capability
- Recommended for vertical deflection output and sound output applications for line-operated TV.
- Complementary to 2SC3621

### Absolute Maximum Ratings (Tc = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V <sub>CBO</sub>	-150	V
Collector-emitter voltage		V <sub>CEO</sub>	-150	V
Emitter-base voltage		V <sub>EB0</sub>	-6	V
Collector current		I <sub>C</sub>	-1.5	A
Base current		I <sub>B</sub>	-1.0	A
Collector power dissipation	T <sub>a</sub> = 25°C	P <sub>C</sub>	1.5	W
	T <sub>c</sub> = 25°C		10	
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	-55 to 150	°C



Weight: 0.82 g (typ.)

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).

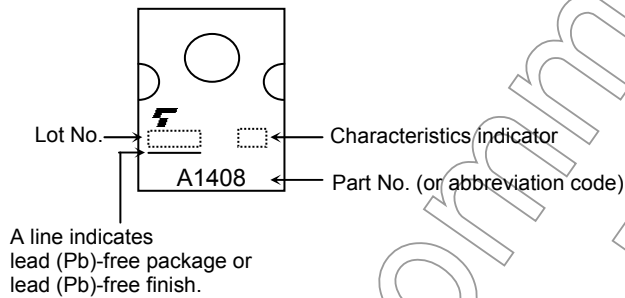
Not for use

**Electrical Characteristics (Tc = 25°C)**

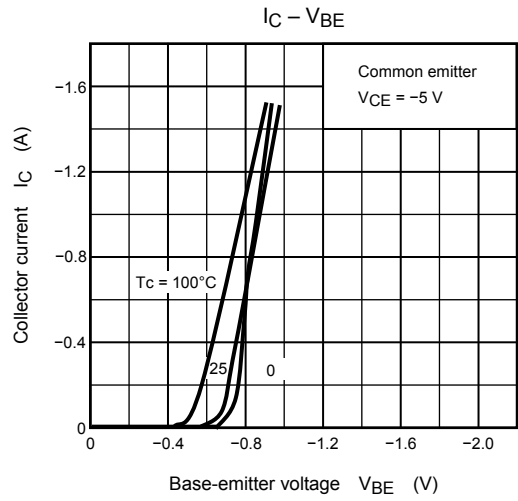
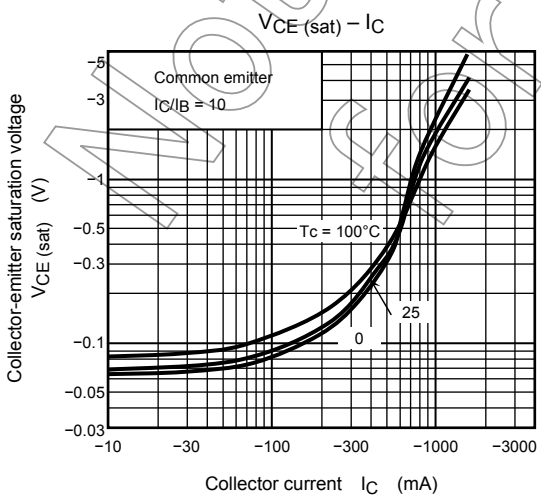
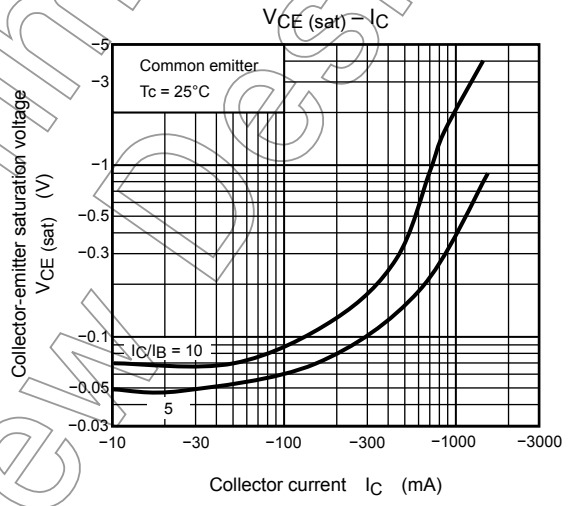
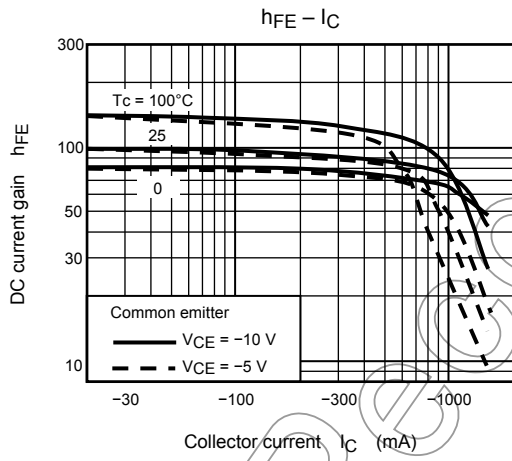
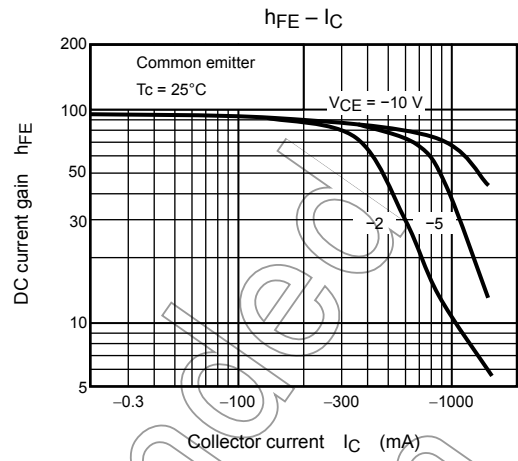
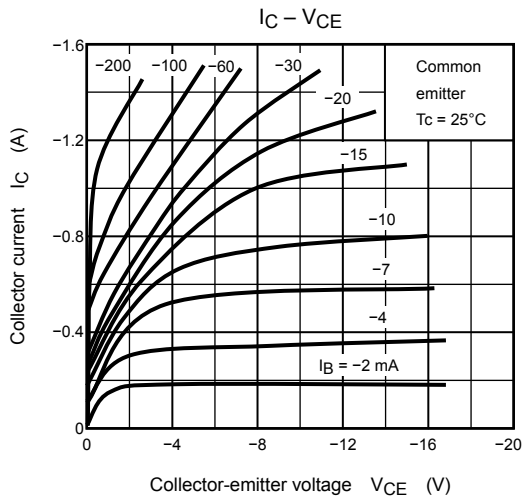
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = -150\text{ V}, I_E = 0$	—	—	-1.0	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -6\text{ V}, I_C = 0$	—	—	-1.0	$\mu\text{A}$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{ mA}, I_B = 0$	-150	—	—	V
DC current gain	$h_{FE}$ (Note)	$V_{CE} = -5\text{ V}, I_C = -200\text{ mA}$	60	—	200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{ mA}, I_B = -50\text{ mA}$	—	—	-1.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -5\text{ V}, I_C = -5\text{ mA}$	-0.5	—	-0.8	V
Transition frequency	$f_T$	$V_{CE} = -5\text{ V}, I_C = -200\text{ mA}$	15	50	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	—	35	pF

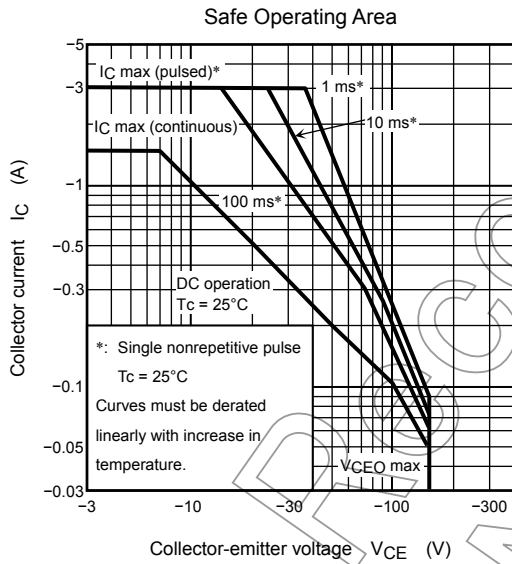
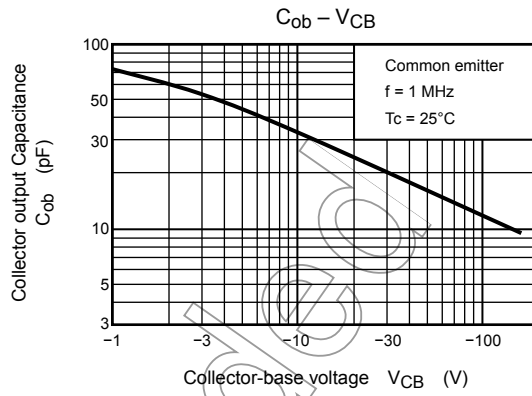
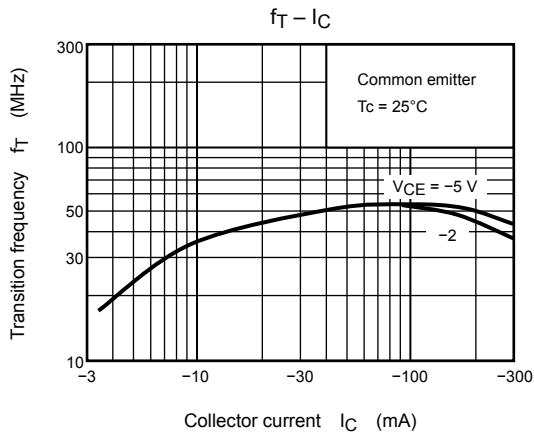
Note:  $h_{FE}$  classification R: 60 to 120, O: 100 to 200

**Marking**



Not Recommended for New Design





Not for New Design

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