

TOSHIBA Transistor Silicon NPN Triple Diffused Type

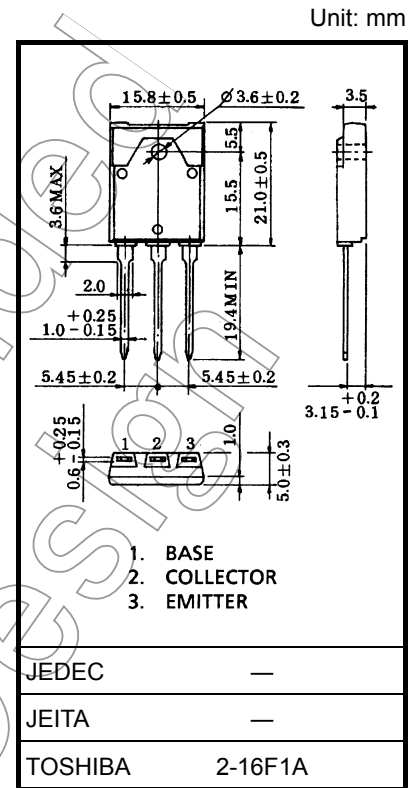
2SC4690

Power Amplifier Applications

- High breakdown voltage: $V_{CEO} = 140\text{ V}$ (min)
- Complementary to 2SA1805
- Suitable for use in 70-W high fidelity audio amplifier's output stage

Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	140	V
Collector-emitter voltage		V_{CEO}	140	V
Emitter-base voltage		V_{EBO}	5	V
Collector current	DC	I_C	10	A
	Pulse	I_{CP}	20	A
Base current		I_B	1	A
Collector power dissipation ($T_c = 25^\circ\text{C}$)		P_C	80	W
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$



Weight: 5.8 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).

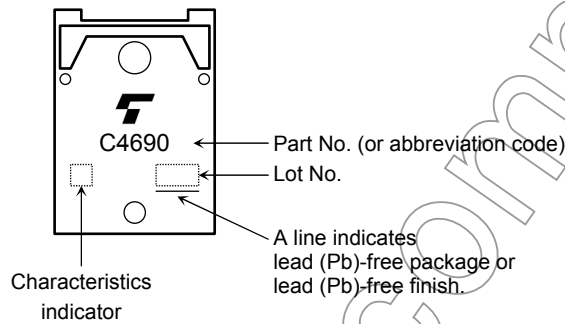
Not for New

Electrical Characteristics (Tc = 25°C)

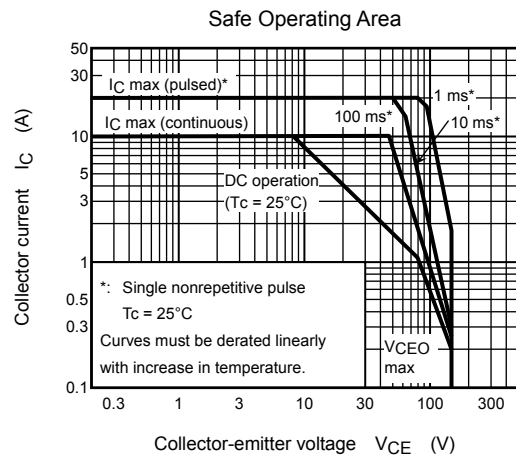
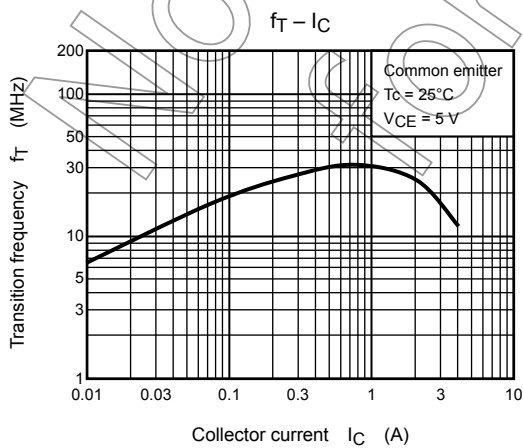
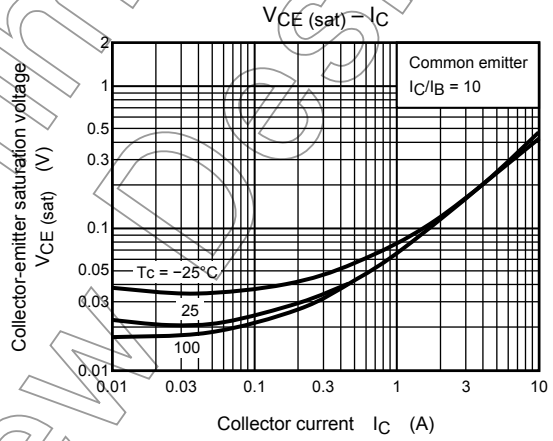
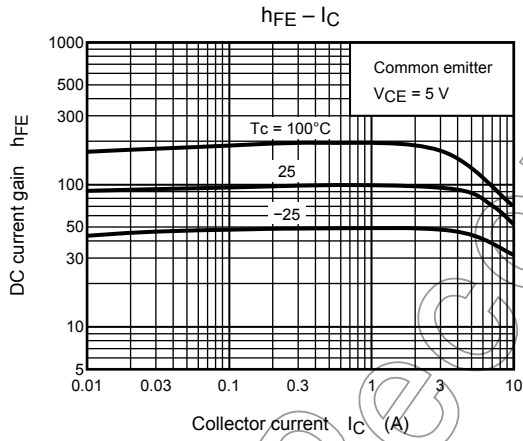
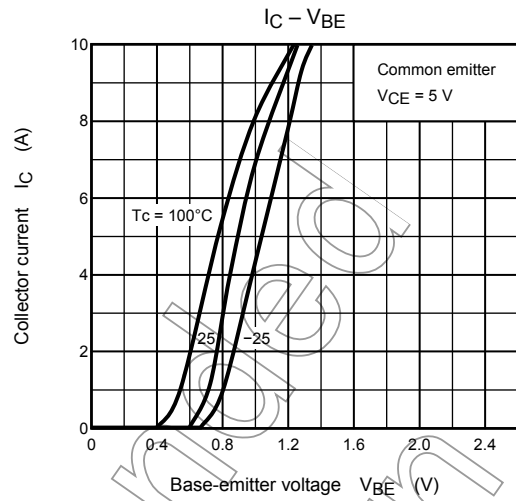
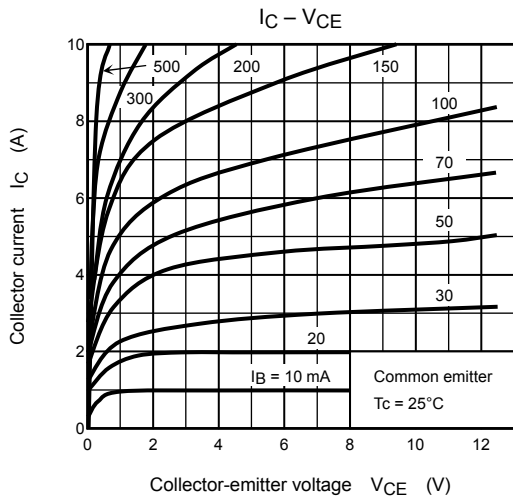
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 140\text{ V}, I_E = 0$	—	—	5.0	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	5.0	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 50\text{ mA}, I_B = 0$	140	—	—	V
DC current gain	$h_{FE(1)}$ (Note)	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	55	—	160	
	$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	35	85	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 7\text{ A}, I_B = 0.7\text{ A}$	—	0.3	2.0	V
Base-emitter voltage	V_{BE}	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	—	0.9	1.5	V
Transition frequency	f_T	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	—	30	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	220	—	pF

Note: $h_{FE(1)}$ classification R: 55 to 110, O: 80 to 160

Marking



Not Recommended for New Design



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