

TOSHIBA Transistor Silicon PNP Triple Diffused Type

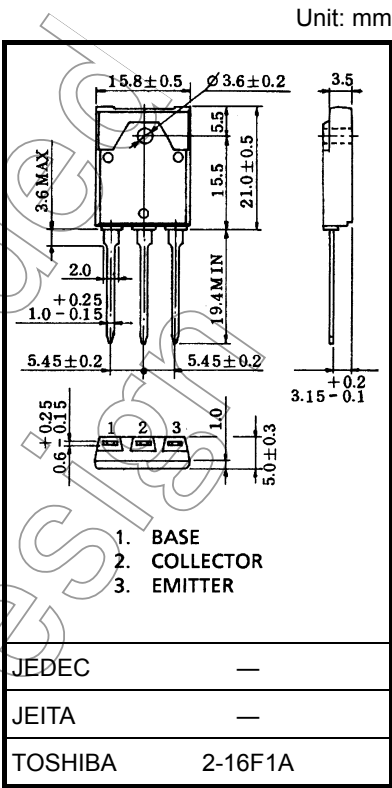
2SA1805

Power Amplifier Applications

- High breakdown voltage:  $V_{CEO} = -140\text{ V (min)}$
- Complementary to 2SC4690
- Recommended for 70 W high fidelity audio frequency amplifier output stage

Absolute Maximum Ratings (Ta = 25°C)

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



Weight: 5.8 g (typ.)

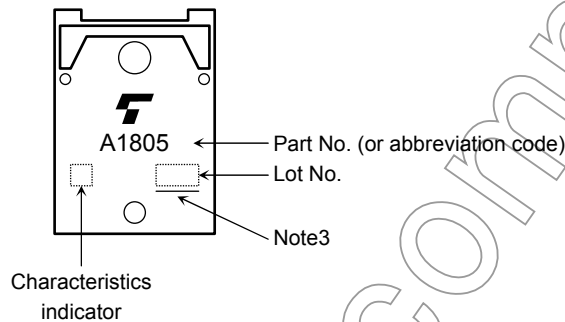
Note 1: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

## Electrical Characteristics (Ta = 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	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-5.0	$\mu\text{A}$
Collector-emitter breakdown voltage	$V_{(BR) CEO}$	$I_C = -50\text{ mA}, I_B = 0$	-140	—	—	V
DC current gain	$h_{FE} (1)$ (Note2)	$V_{CE} = -5\text{ V}, I_C = -1\text{ A}$	55	—	160	
	$h_{FE} (2)$	$V_{CE} = -5\text{ V}, I_C = -5\text{ A}$	35	85	—	
Collector-emitter saturation voltage	$V_{CE (sat)}$	$I_C = -7\text{ A}, I_B = -0.7\text{ A}$	—	-0.8	-2.0	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -5\text{ V}, I_C = -5\text{ A}$	—	-1.0	-1.5	V
Transition frequency	$f_T$	$V_{CE} = -5\text{ V}, I_C = -1\text{ A}$	—	30	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	480	—	pF

Note 2:  $h_{FE} (1)$  classification R: 55 to 110, O: 80 to 160

## Marking

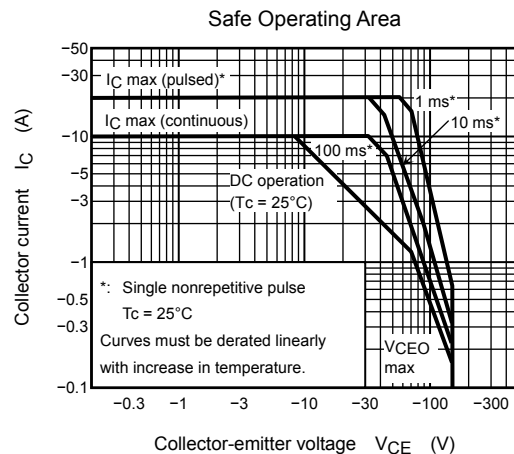
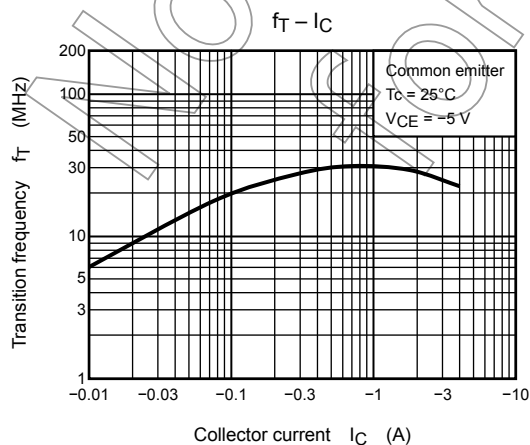
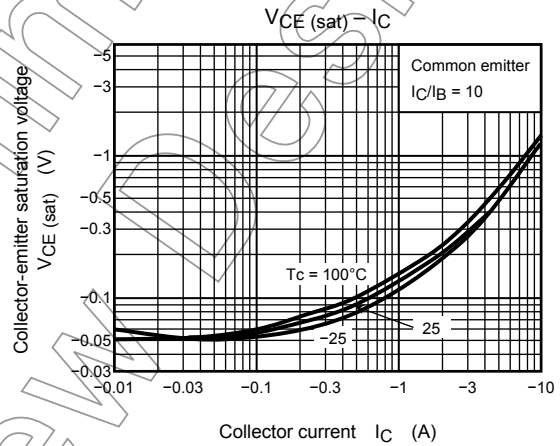
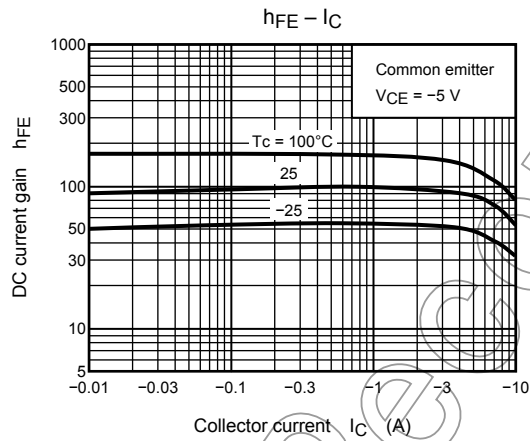
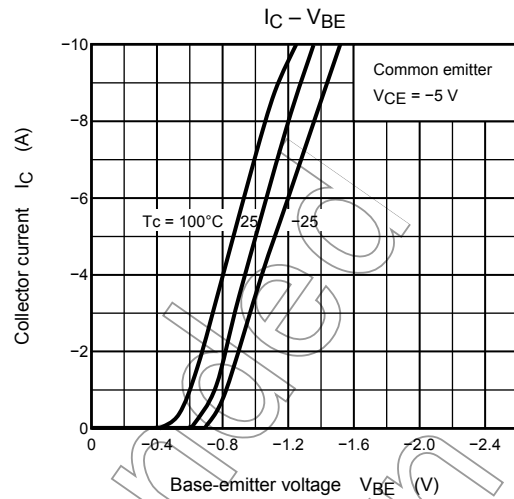
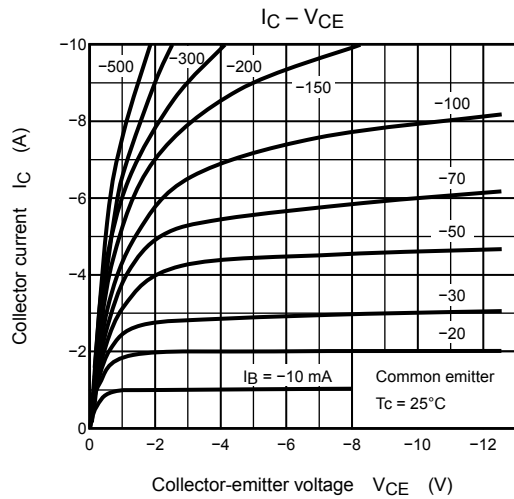


Note 3: A line under a Lot No. identifies the indication of product Labels.

Not underlined:  $[[Pb]]/INCLUDES > MCV$

Underlined:  $[[G]]/RoHS COMPATIBLE$  or  $[[G]]/RoHS [[Pb]]$

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