

TOSHIBA Transistor Silicon PNP Triple Diffused Type

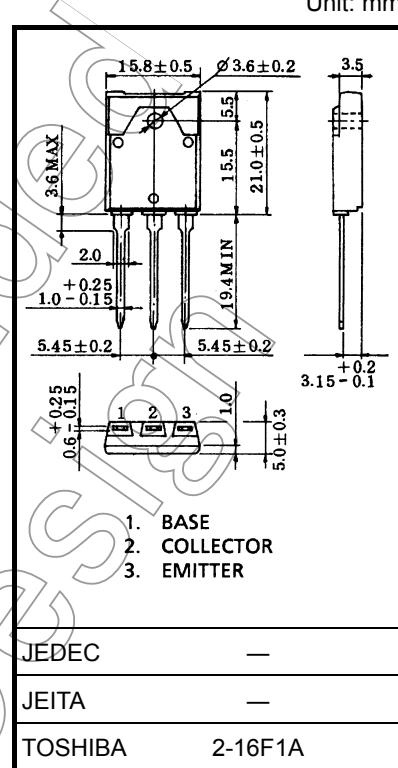
**2SA1805**

## Power Amplifier Applications

- High breakdown voltage:  $V_{CEO} = -140$  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	$I_C$	A
	Pulse	$I_{CP}$	
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.).

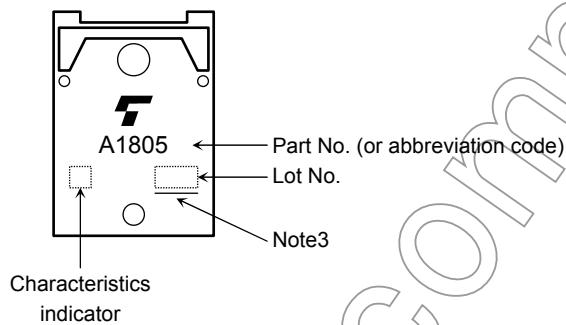
Not  
for  
use  
in  
automotive  
products

## Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = -140 V, I <sub>E</sub> = 0	—	—	-5.0	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -5 V, I <sub>C</sub> = 0	—	—	-5.0	μA
Collector-emitter breakdown voltage	V <sub>(BR) CEO</sub>	I <sub>C</sub> = -50 mA, I <sub>B</sub> = 0	-140	—	—	V
DC current gain	h <sub>FE</sub> (1) (Note2)	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -1 A	55	—	160	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -5 A	35	85	—	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = -7 A, I <sub>B</sub> = -0.7 A	—	-0.8	-2.0	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -5 A	—	-1.0	-1.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -1 A	—	30	—	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz	—	480	—	pF

Note 2: h<sub>FE</sub> (1) classification R: 55 to 110, O: 80 to 160

## Marking

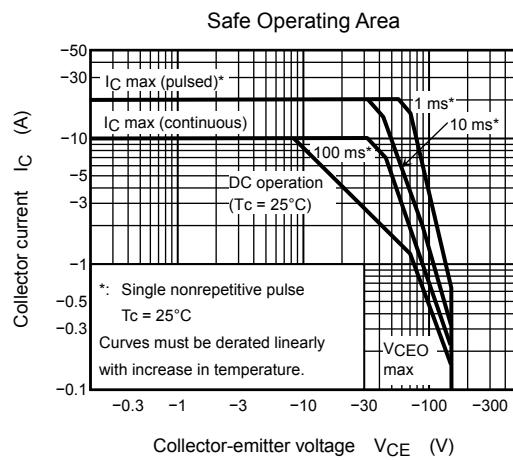
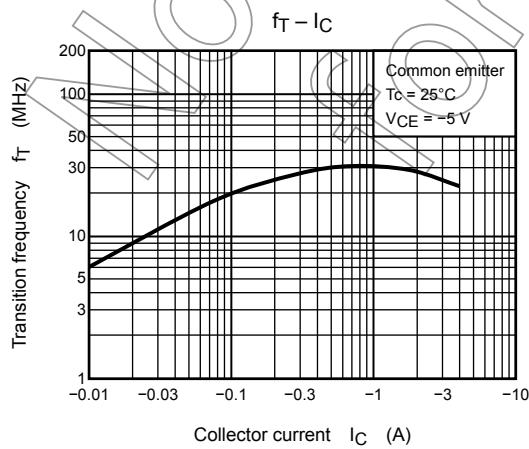
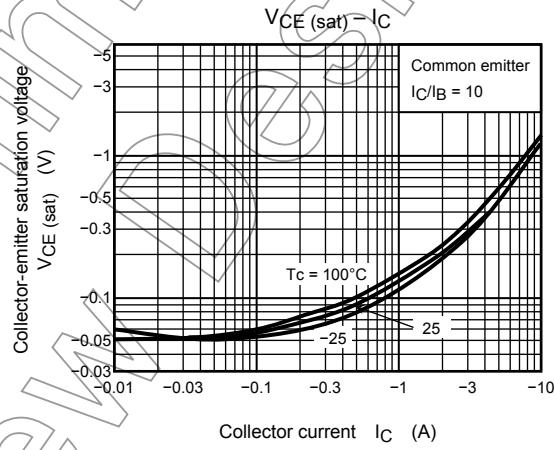
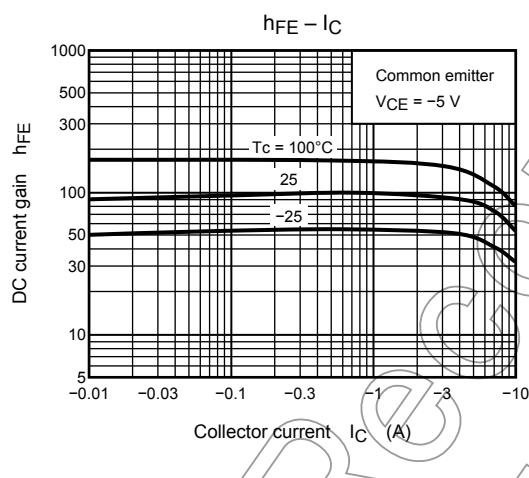
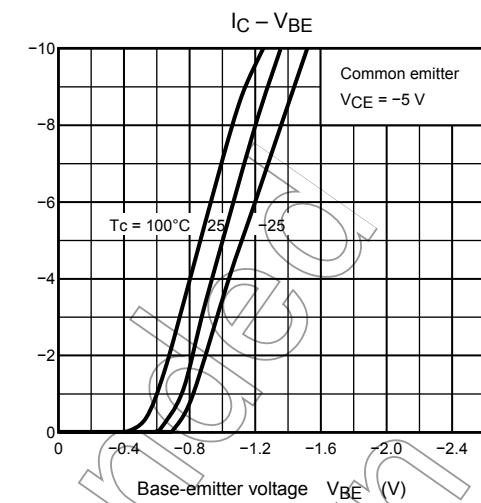
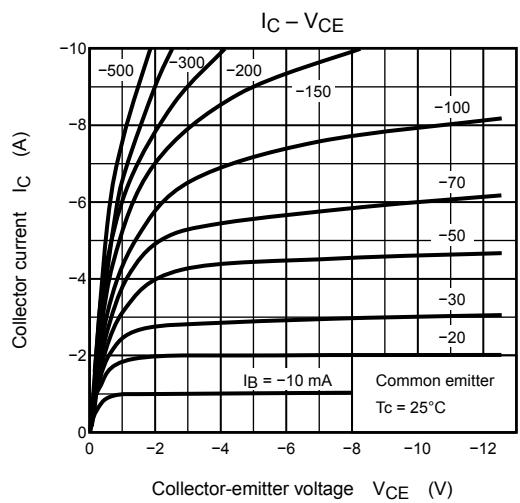


Note 3: A line under a Lot No. identifies the indication of product Labels.

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

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

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



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