TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# 2SC4935

## **Power Amplifier Applications**

• Good hfe linearity

### **Absolute Maximum Ratings (Ta = 25°C)**

Characteristics		Rating	Unit	
Collector-base voltage		50	X	
Collector-emitter voltage		50	V	
Emitter-base voltage		5	(///	
Collector current		3	A	
Base current		0.3	A	
Ta = 25°C	D <sub>o</sub>	2	> w	
Tc = 25°C	FC	10	~ VV	
Junction temperature		150	°C	
Storage temperature range		-55 to 150	/°C	
	Ta = 25°C Tc = 25°C	VCBO VCEO VEBO IC IB Ta = 25°C Tc = 25°C Tj	V <sub>CBO</sub> 50 V <sub>CEO</sub> 50 V <sub>EBO</sub> 5  I <sub>C</sub> 3 I <sub>B</sub> 0.3  Ta = 25°C Tc = 25°C P <sub>C</sub> 10 Tj 150	

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.

Unit: mm

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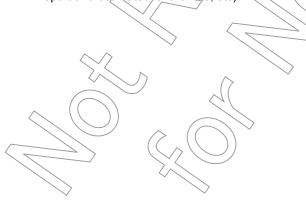
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Weight: 1.7 g (typ.)

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).

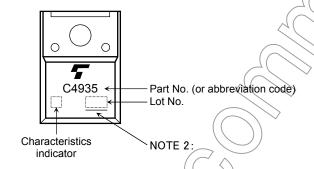


# **Electrical Characteristics (Ta = 25°C)**

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 50 V, I <sub>E</sub> = 0	_	_	1	μΑ
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0	_	_	1	μΑ
Collector-emitter breakdown voltage	V (BR) CEO	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	50	_	_	٧
DC current gain	h <sub>FE (1)</sub> (Note)	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 0.5 A	70	7	240	
	h <sub>FE (2)</sub>	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 2.5 A	30	_	_	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 2 A, I <sub>B</sub> = 0.2 A	$\bigcirc$	0.4	0.6	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 0.5 A	_	0.75	1	٧
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 0.5 A	_	80	_	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	_	30		pF

Note:  $h_{FE\ (1)}$  classification O: 70 to 140, Y: 120 to 240

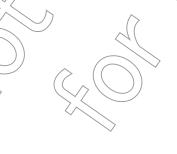
### Marking



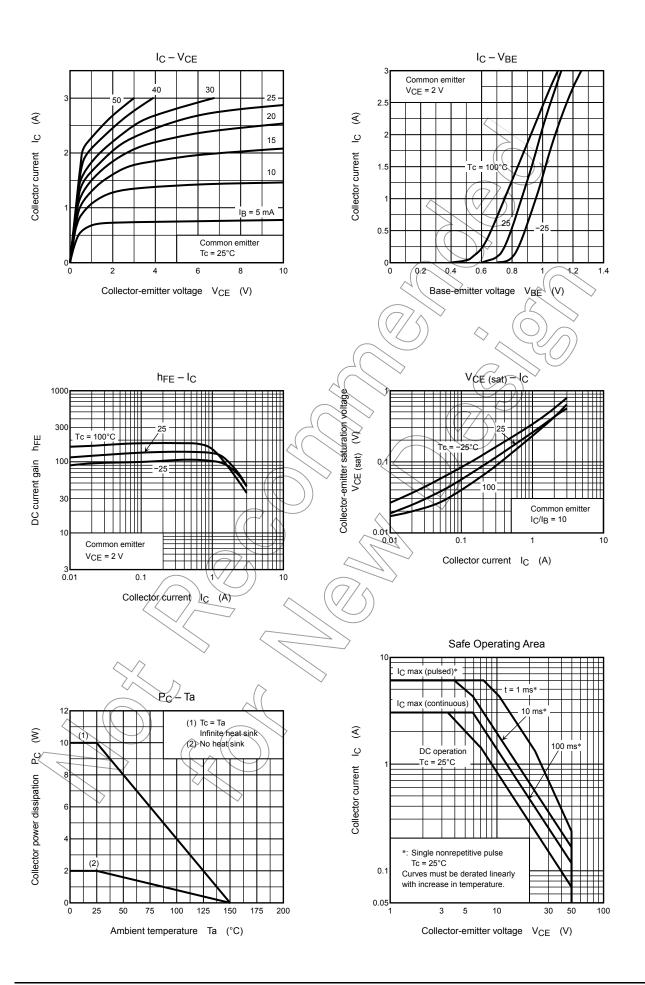
Note 2 : A line under a Lot No. identifies the indication of product Labels. [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

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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