TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

2SC4935

Power Amplifier Applications

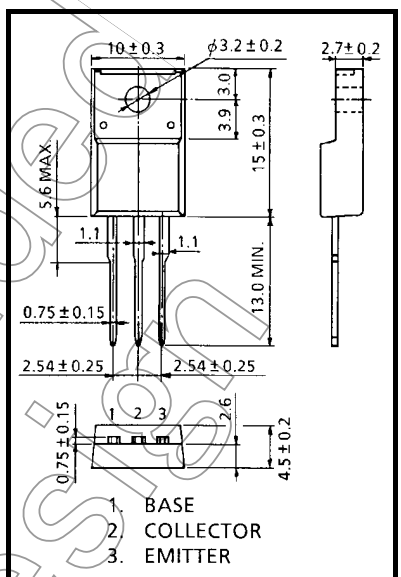
- Good h_{FE} linearity

Absolute Maximum Ratings (T_a = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	50	V
Collector-emitter voltage		V_{CEO}	50	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	3	A
Base current		I_B	0.3	A
Collector power dissipation	Ta = 25°C	P_C	2	W
	Tc = 25°C		10	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

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).

Unit: mm



JEDEC	—
JEITA	SC-67
TOSHIBA	2-10R1A

Weight: 1.7 g (typ.)

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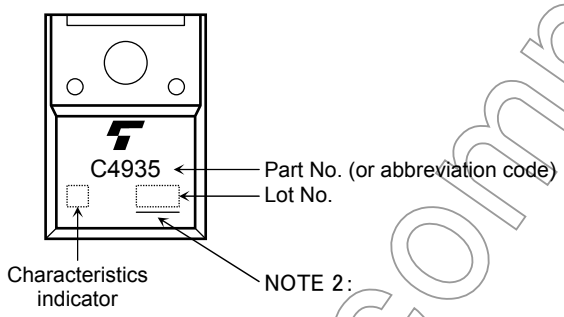
Electrical Characteristics (T_a = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 50 V, I_E = 0	—	—	1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	1	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	50	—	—	V
DC current gain	$h_{FE\ (1)}$ (Note)	V_{CE} = 2 V, I_C = 0.5 A	70	—	240	
	$h_{FE\ (2)}$	V_{CE} = 2 V, I_C = 2.5 A	30	—	—	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 2 A, I_B = 0.2 A	—	0.4	0.6	V
Base-emitter voltage	V_{BE}	V_{CE} = 2 V, I_C = 0.5 A	—	0.75	1	V
Transition frequency	f_T	V_{CE} = 2 V, I_C = 0.5 A	—	80	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 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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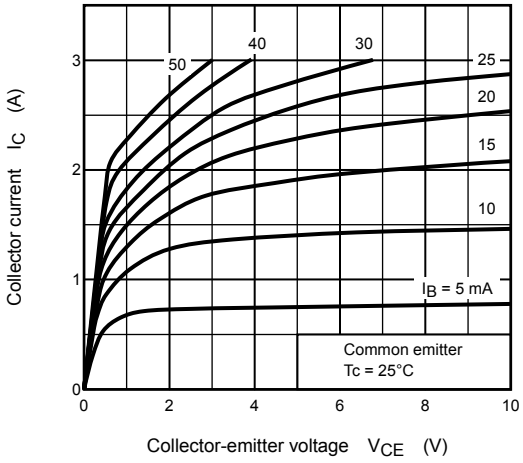
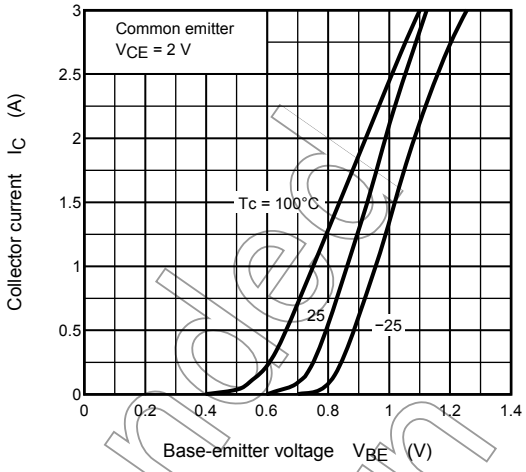
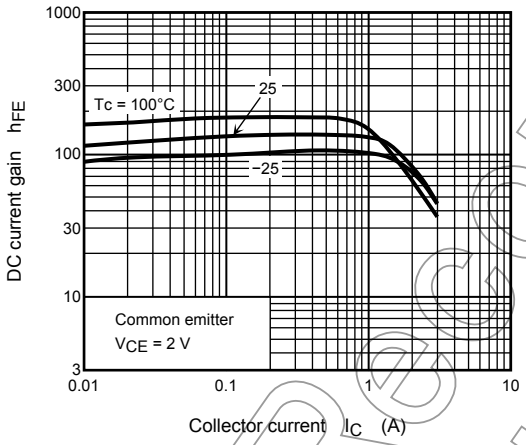
$I_C - V_{CE}$



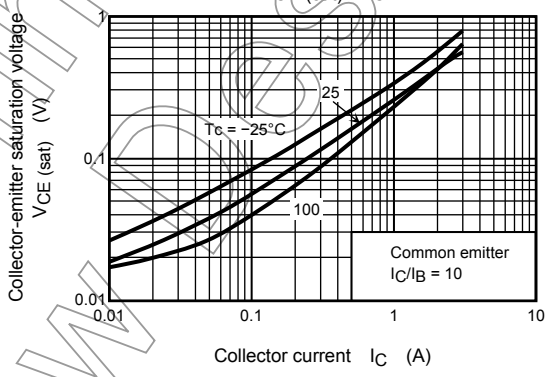
$I_C - V_{BE}$



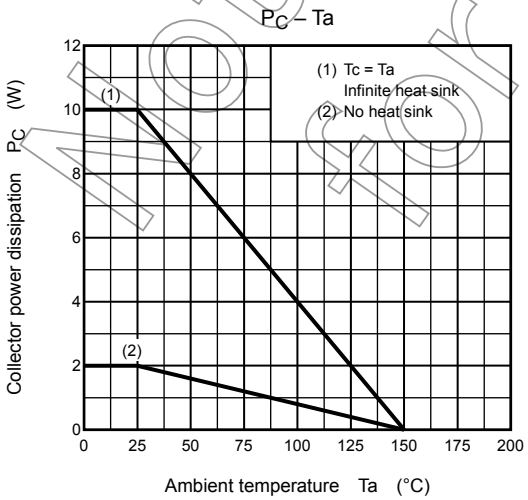
$h_{FE} - I_C$



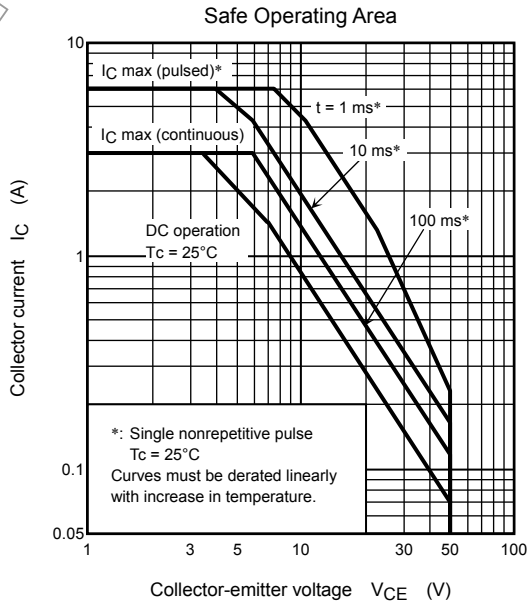
$V_{CE\ (sat)} - I_C$



$P_C - Ta$



Safe Operating Area



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