TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

2SA817A

Driver-Stage Amplifier Applications
Voltage Amplifier Applications

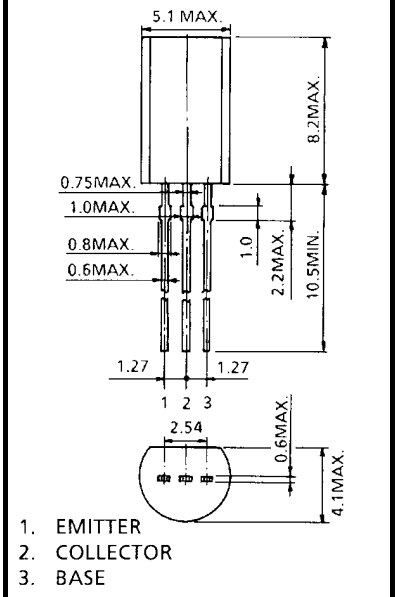
- Complementary to 2SC1627A.
- Driver stage application of 30 to 35 watts amplifiers.

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−80	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−400	mA
Emitter current	I_E	400	mA
Collector power dissipation	P_C	800	mW
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	TO-92MOD
JEITA	—
TOSHIBA	2-5J1A

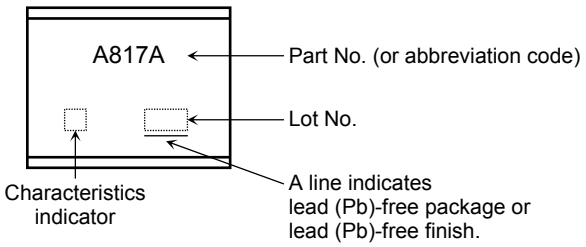
Weight: 0.36 g (typ.)

Electrical Characteristics (Ta = 25°C)

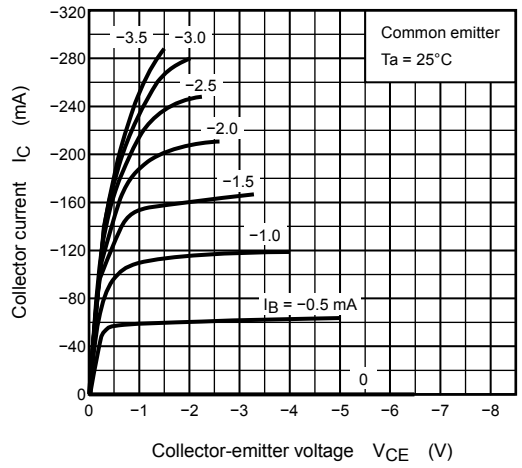
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −50 V, I_E = 0	—	—	−100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = −5 V, I_C = 0	—	—	−100	nA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = −5 mA, I_B = 0	−80	—	—	V
DC current gain	$h_{FE\ (1)}$ (Note)	V_{CE} = −2 V, I_C = −50 mA	70	—	240	
	$h_{FE\ (2)}$	V_{CE} = −2 V, I_C = −200 mA	40	—	—	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = −200 mA, I_B = −20 mA	—	—	−0.4	V
Base-emitter voltage	V_{BE}	V_{CE} = −2 V, I_C = −5 mA	−0.55	—	−0.8	V
Transition frequency	f_T	V_{CE} = −10 V, I_C = −10 mA	—	100	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	14	—	pF

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

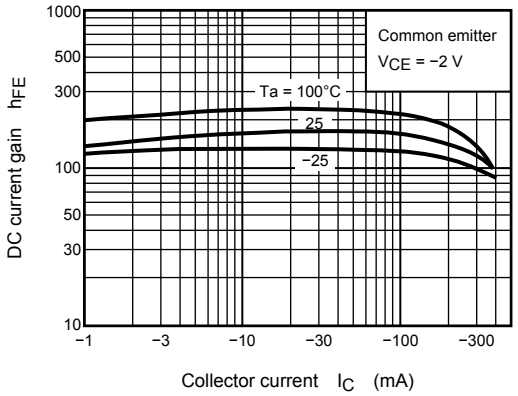
Marking



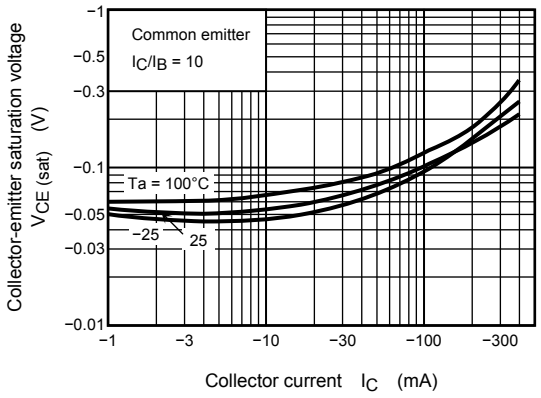
$I_C - V_{CE}$



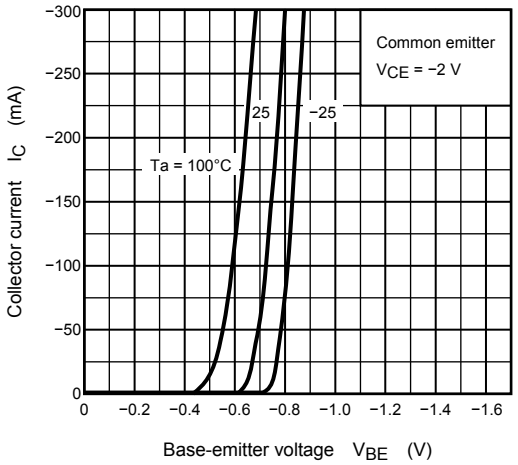
$h_{FE} - I_C$



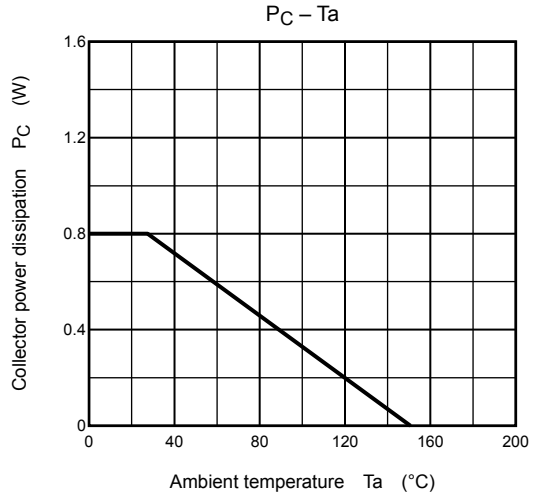
$V_{CE\ (sat)} - I_C$



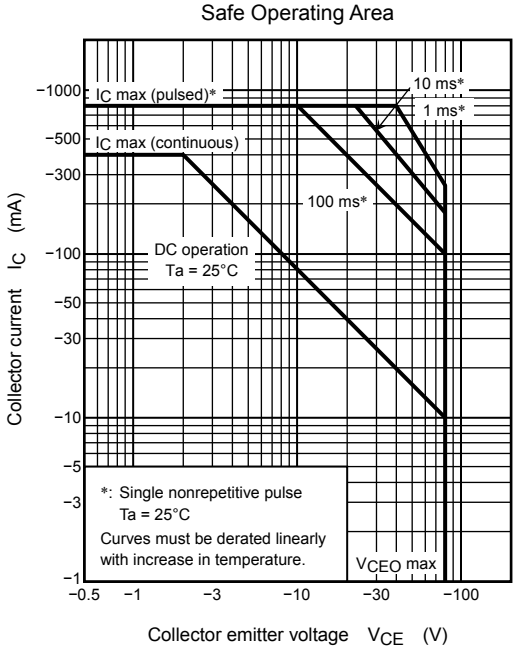
$I_C - V_{BE}$



$P_C - Ta$



Safe Operating Area



RESTRICTIONS ON PRODUCT USE

20070701-EN

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- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
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