

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC5171

Power Amplifier Applications
 Driver Stage Amplifier Applications

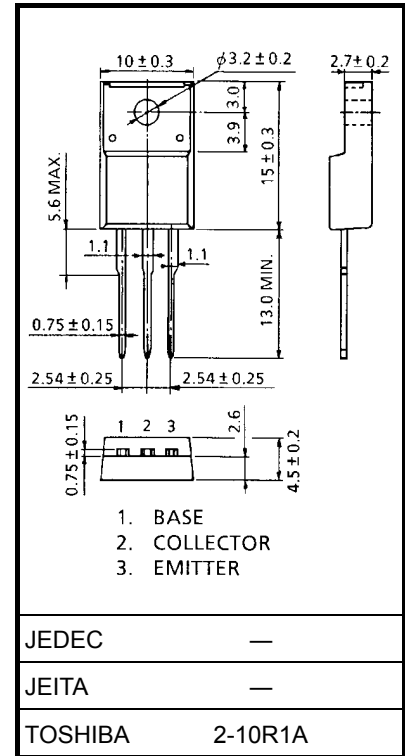
- High transition frequency: $f_T = 200 \text{ MHz (typ.)}$
- Complementary to 2SA1930

Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	180	V
Collector-emitter voltage	V_{CEO}	180	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	2	A
Base current	I_B	1	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	2.0	W
	$T_c = 25^\circ\text{C}$	20	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

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

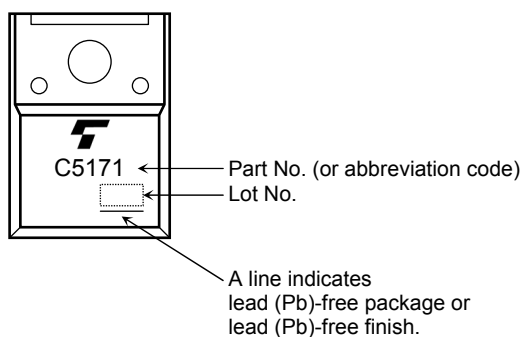


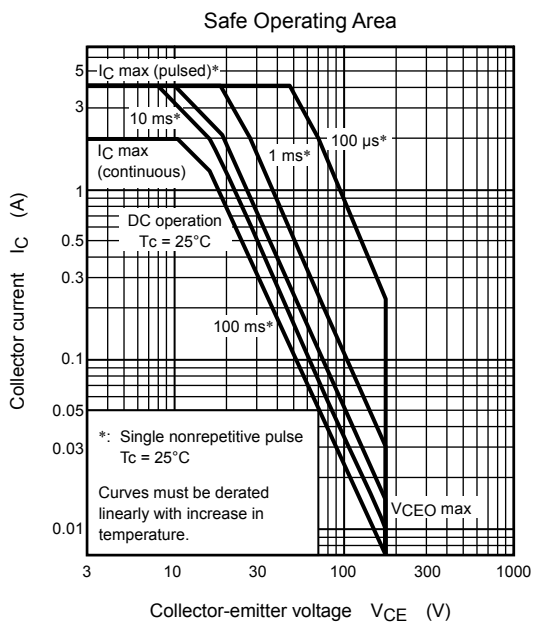
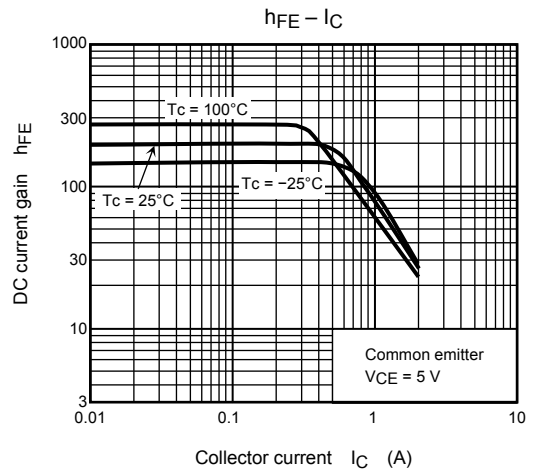
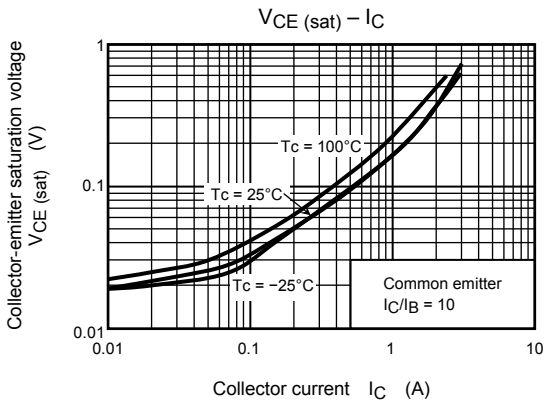
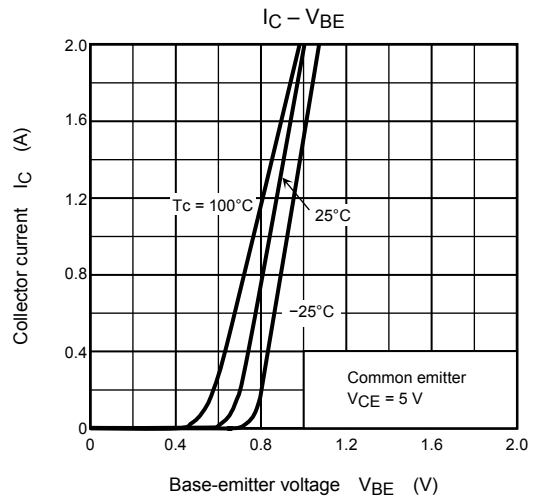
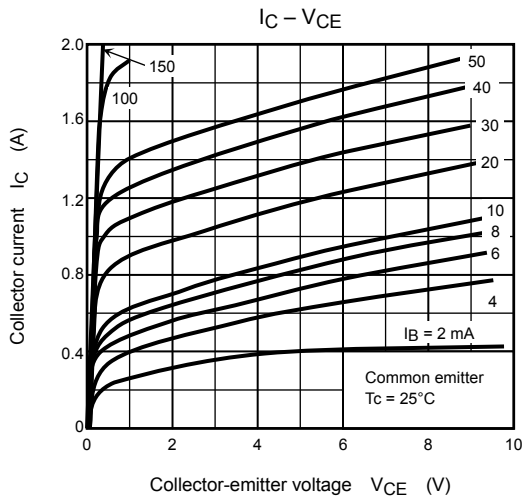
Weight: 1.7 g (typ.)

Electrical Characteristics (Tc = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 180\text{ V}, I_E = 0$	—	—	5.0	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	5.0	μA
Collector-emitter breakdown voltage	$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	180	—	—	V
DC current gain	$h_{FE} (1)$	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$	100	—	320	
	$h_{FE} (2)$	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	50	—	—	
Collector-emitter saturation voltage	$V_{CE (sat)}$	$I_C = 1\text{ A}, I_B = 0.1\text{ A}$	—	0.16	1.0	V
Base-emitter voltage	V_{BE}	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	—	0.68	1.5	V
Transition frequency	f_T	$V_{CE} = 5\text{ V}, I_C = 0.3\text{ A}$	—	200	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	16	—	pF

Marking





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20070701-EN

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