

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC6124

Power Amplifier Applications
 Power Switching Applications

Low collector emitter saturation voltage
 : $V_{CE(sat)} = 0.5 \text{ V (Max)}$ ($I_C = 1 \text{ A}$)
 High-speed switching: $t_{stg} = 400 \text{ ns (Typ.)}$
 Complementary to 2SA2206

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

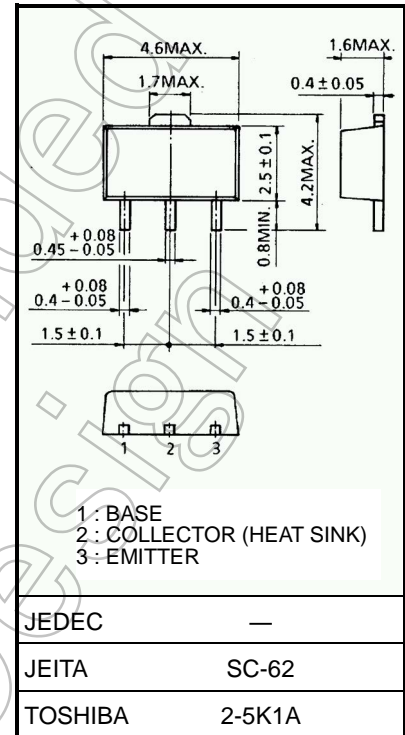
Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	160	V
Collector-emitter voltage	V_{CEX}	160	V
	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	DC	I_C	2 A
	Pulse	I_{CP}	4 A
Base current	I_B	0.5	A
Collector power dissipation	$t = 10 \text{ s}$	P_C	2.5 W
	DC	(Note 1)	1.0
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

Note 1: Mounted on an FR4 board (glass-epoxy; 1.6 mm thick; Cu area, 645 mm²)

Note 2: 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



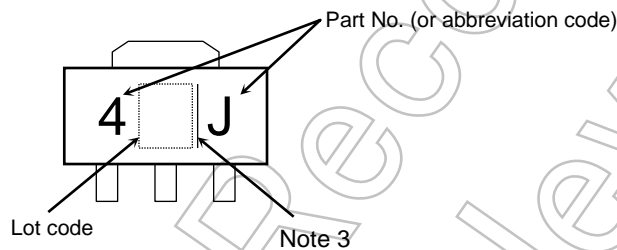
Weight: 0.05 g (Typ.)

Start of commercial production
 2007-01

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 160 V, I _E = 0 A	—	—	1	μA
Emitter cut-off current		IEBO	V _{EB} = 7 V, I _C = 0 A	—	—	1	μA
Collector-emitter breakdown voltage		V (BR) CEO	I _C = 10 mA, I _B = 0 A	80	—	—	V
DC current gain		hFE (1)	V _{CE} = 2 V, I _C = 1 mA	80	—	—	
		hFE (2)	V _{CE} = 2 V, I _C = 0.5 A	100	—	200	
		hFE (3)	V _{CE} = 2 V, I _C = 1 A	60	—	—	
Collector-emitter saturation voltage		V _{CE (sat)} (1)	I _C = 0.5 A, I _B = 50 mA	—	—	0.30	V
		V _{CE (sat)} (2)	I _C = 1 A, I _B = 100 mA	—	—	0.50	V
Base-emitter saturation voltage		V _{BE (sat)}	I _C = 1 A, I _B = 100 mA	—	—	1.50	V
Transition frequency		f _T	V _{CE} = 2 V, I _C = 0.5 A	—	150	—	MHz
Collector output capacitance		C _{ob}	V _{CB} = 10 V, I _E = 0 A, f = 1MHz	—	14	—	pF
Switching time	Rise time	t _r		—	50	—	ns
	Storage time	t _{stg}		—	400	—	
	Fall time	t _f		—	—	150	

Marking

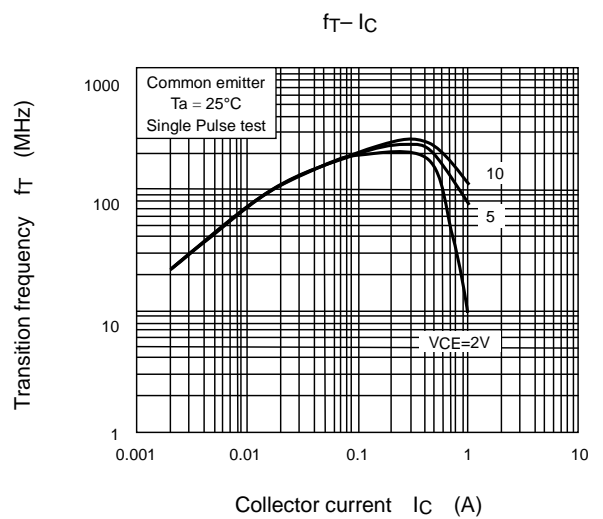
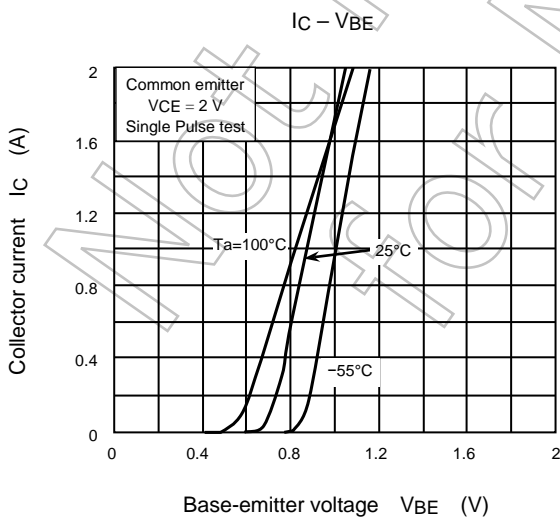
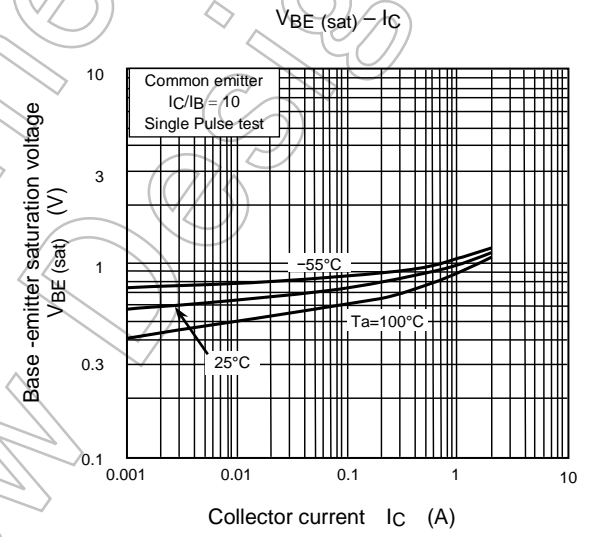
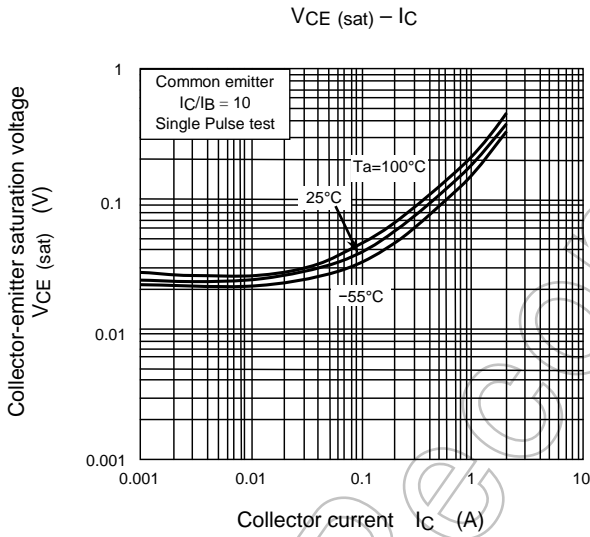
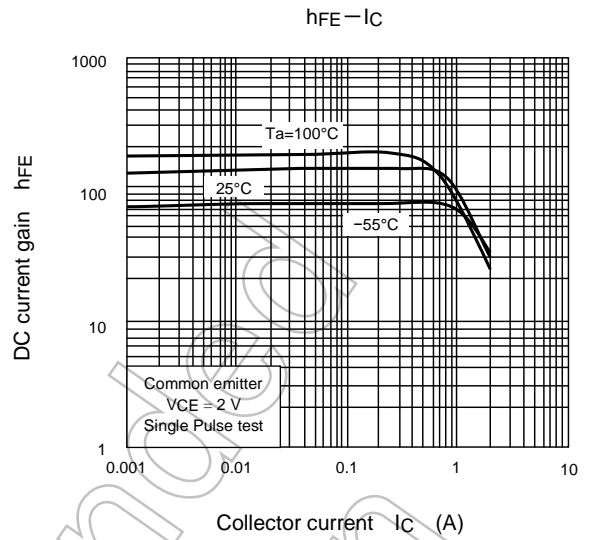
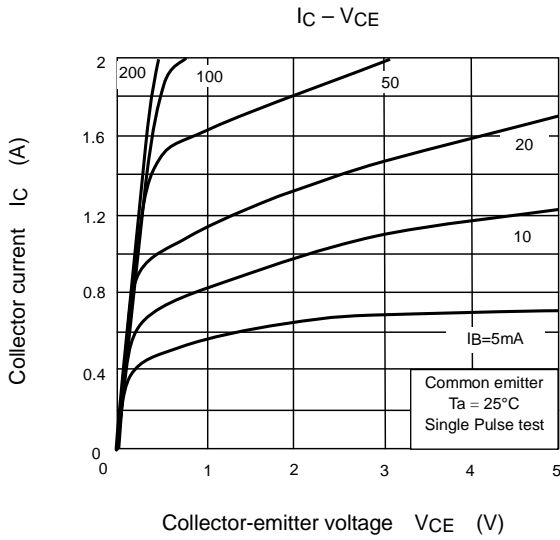


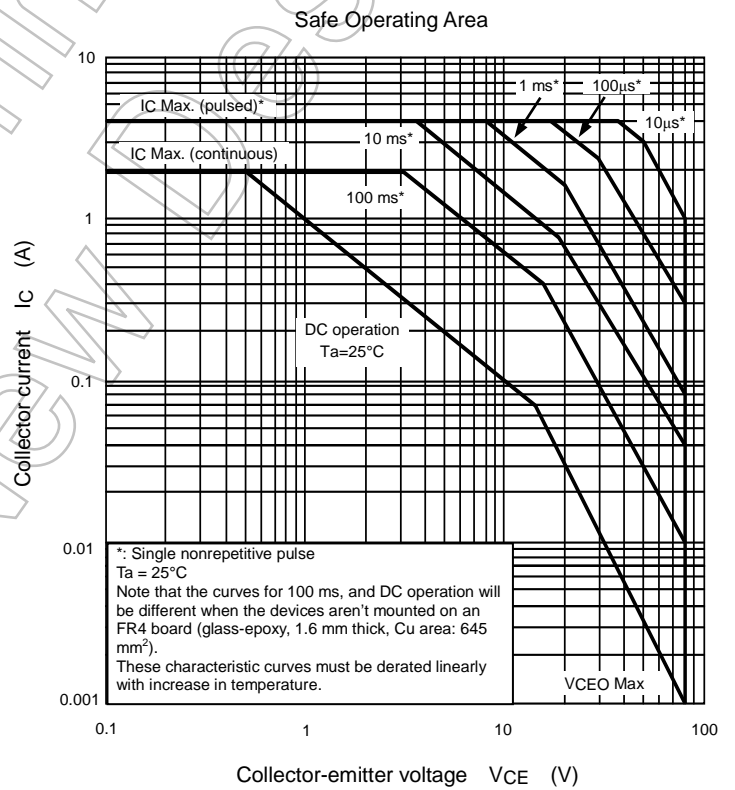
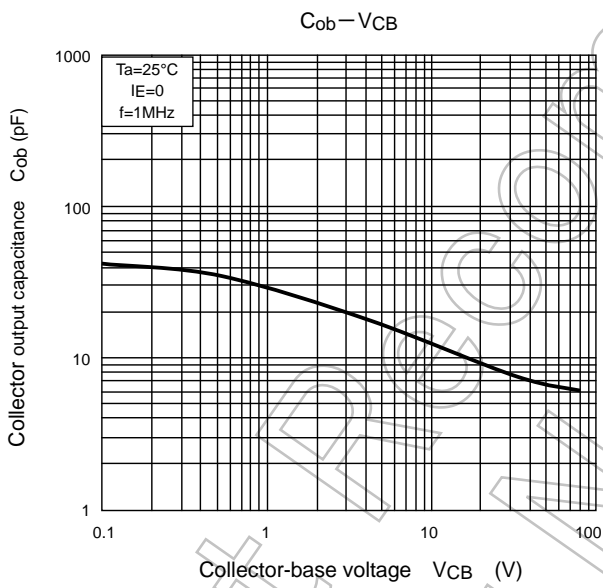
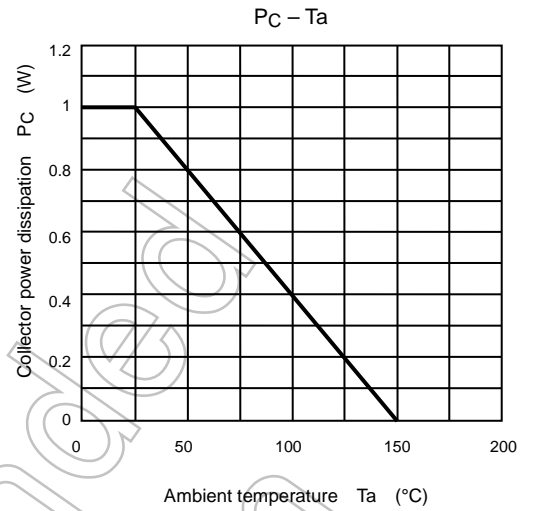
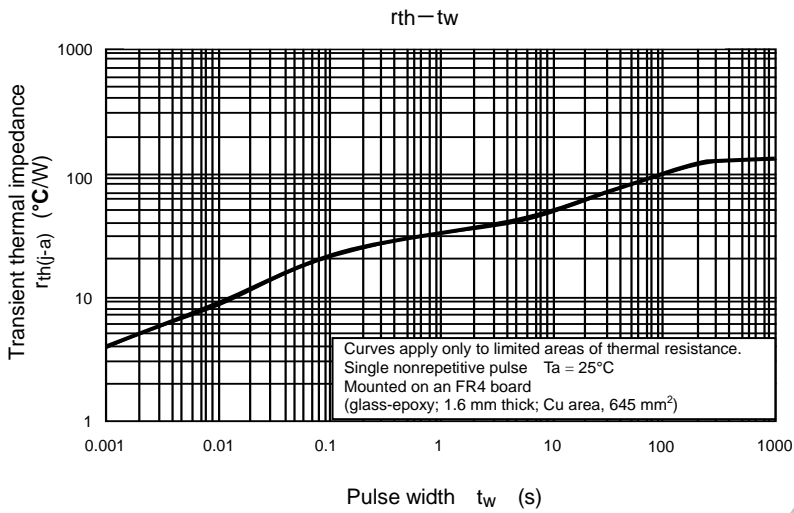
Note 3: A line beside a Lot No. identifies the indication of product Labels.

[[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 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.





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