TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

# 2SC3074

### **High Current Switching Applications**

- Low collector saturation voltage: VCE (sat) = 0.4 V (max) (IC = 3 A)
- High speed switching time:  $t_{stg} = 1.0 \mu s$  (typ.)
- Complementary to 2SA1244

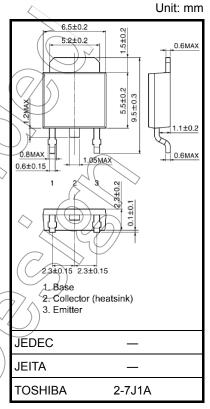
#### Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CBO}$	60	V
Collector-emitter voltage		V <sub>CEO</sub>	50	$(y \land)$
Emitter-base voltage		V <sub>EBO</sub>	5	A
Collector current		IC	5	A
Base current		Ι <sub>Β</sub>	4	> A
Collector power dissipation	Ta = 25°C	P <sub>C</sub>	1.0	W
	Tc = 25°C	FC	20	VV
Junction temperature		T <sub>j</sub>	150	/°e
Storage temperature range		T <sub>stg</sub>	-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.

Weight: 0.36 g (typ.)

operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Poshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).



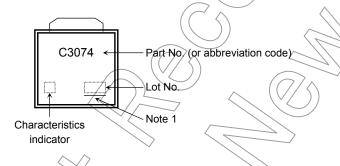


## **Electrical Characteristics (Ta = 25°C)**

Chara	acteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off of	current	I <sub>CBO</sub>	V <sub>CB</sub> = 50 V, I <sub>E</sub> = 0	_	_	1	μΑ
Emitter cut-off cu	rrent	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	_	_	V
DC current gain		h <sub>FE (1)</sub> (Note)	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 1 A	70	7	240	
		h <sub>FE</sub> (2)	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 3 A	30	7 –	_	
Collector-emitter	saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 3 A, I <sub>B</sub> = 0.15 A	<b>/</b>	0.2	0.4	V
Base-emitter satu	uration voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> = 3 A, I <sub>B</sub> = 0.15 A		0.9	1.2	V
Transition freque	ncy	f <sub>T</sub>	V <sub>CE</sub> = 4 V, I <sub>C</sub> = 1 A	_	120	_	MHz
Collector output of	capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	_	80	_	pF
Switching time	Turn-on time	t <sub>on</sub>	20 μs OUTPUT	- (	0.1	\\ \rac{1}{2}	
	Storage time	t <sub>stg</sub>	INPUTO WE SEE SEE SEE SEE SEE SEE SEE SEE SEE			_	μs
	Fall time	t <sub>f</sub>	I <sub>B1</sub> = 0.15 Å , I <sub>B2</sub> = 0.15 Å Duty cycle ≤ 1%	2)	0.1	_	

Note: h<sub>FE (1)</sub> classification O: 70 to 140, Y: 120 to 240

# Marking



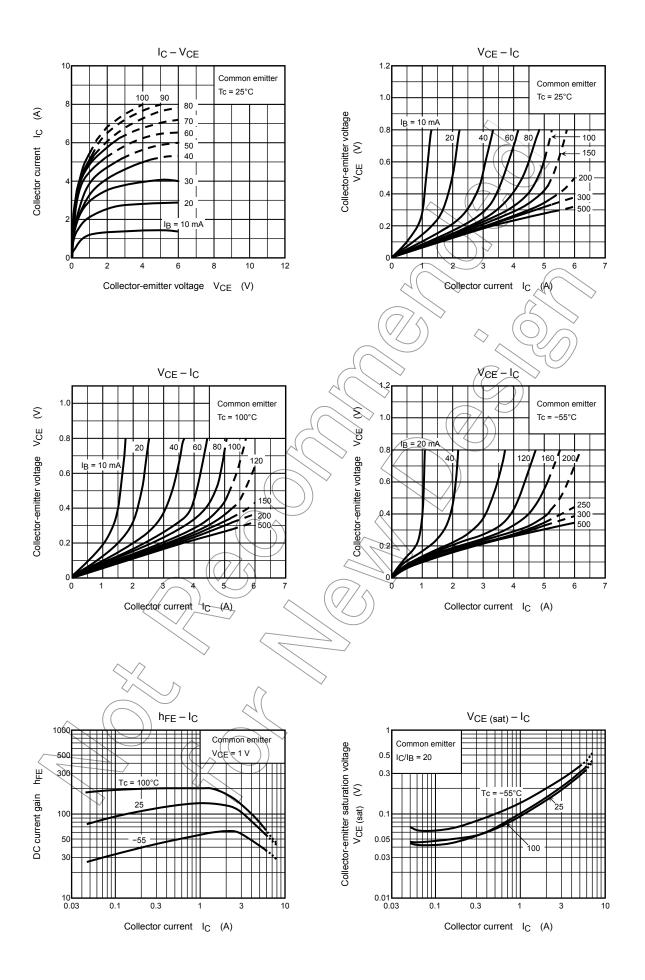
Note 1: A line under a Lot No. identifies the indication of product Labels.

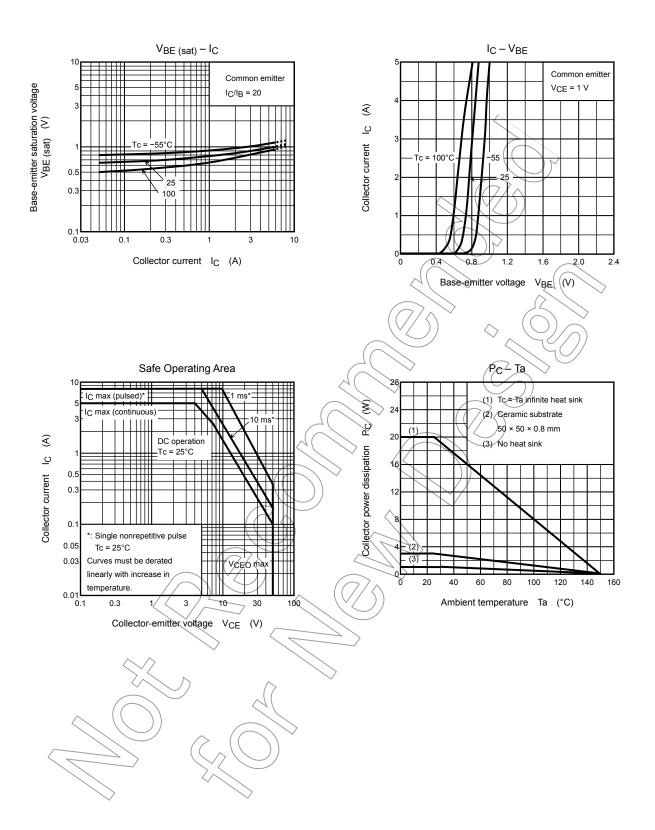
Not underlined: [[Pb]]/INCLUDES > MCV

Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHBA 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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