

TOSHIBA Transistor Silicon NPN Triple Diffused Type

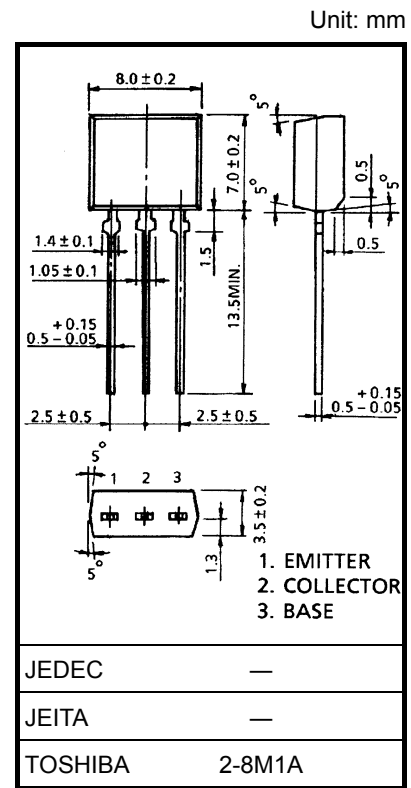
# 2SC5208

- High-Voltage Switching Applications
- Switching Regulator Applications
- DC-DC Converter Applications
- DC-AC Inverter Applications

- High-speed switching:  $t_r = 1.0 \mu s$  (max) ,  $t_f = 1.5 \mu s$  (max)
- High breakdown voltage:  $V_{CEO} = 400 V$

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

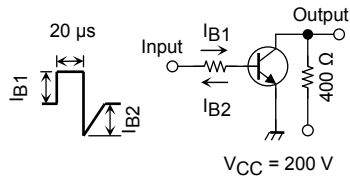
Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	600	V
Collector-emitter voltage	$V_{CEO}$	400	V
Emitter-base voltage	$V_{EBO}$	7	V
Collector current	DC	$I_C$	0.8
	Pulse	$I_{CP}$	1.5
Base current	$I_B$	0.5	A
Collector power dissipation	$P_C$	1.3	W
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C



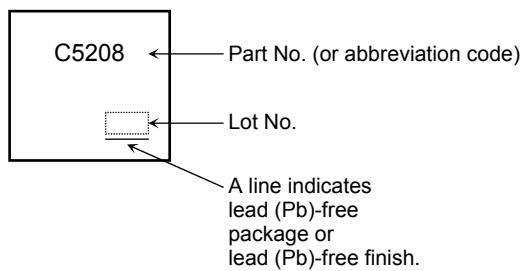
Weight: 0.55 g (typ.)

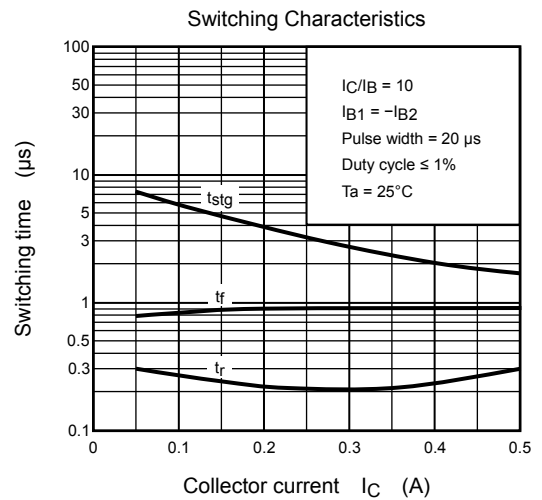
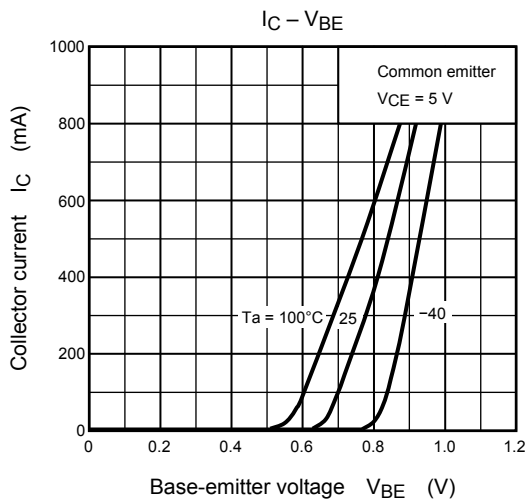
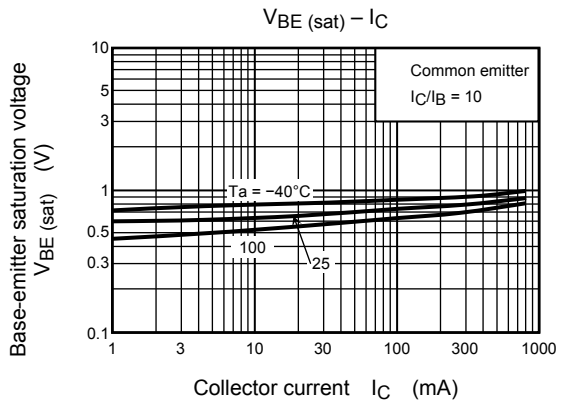
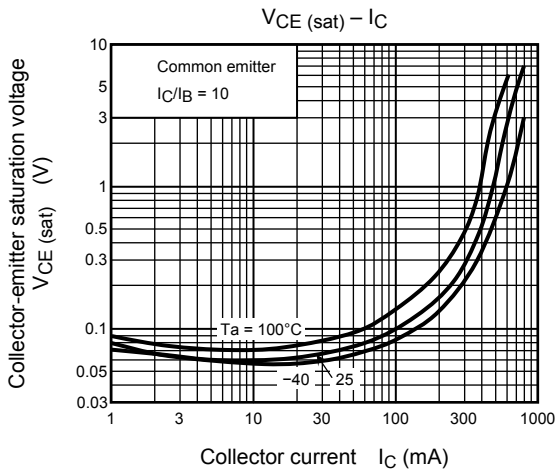
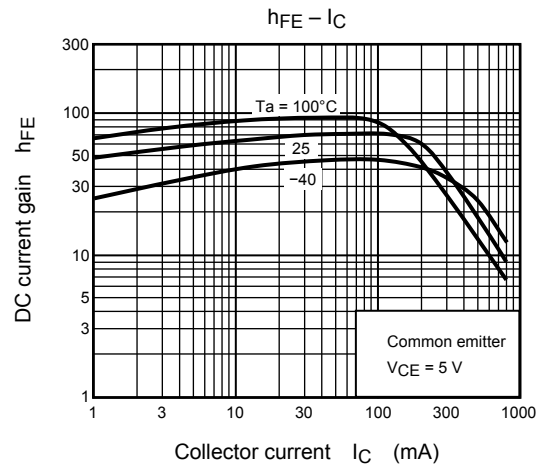
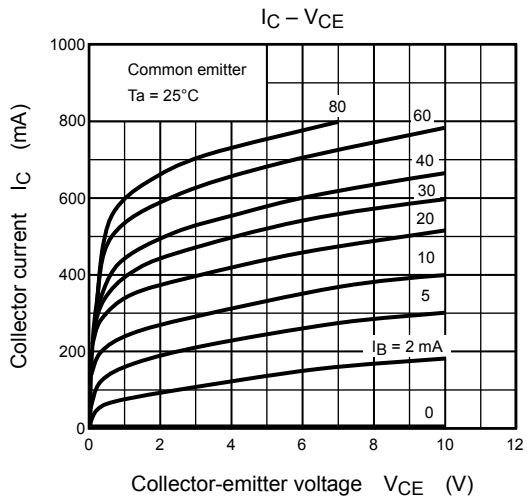
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

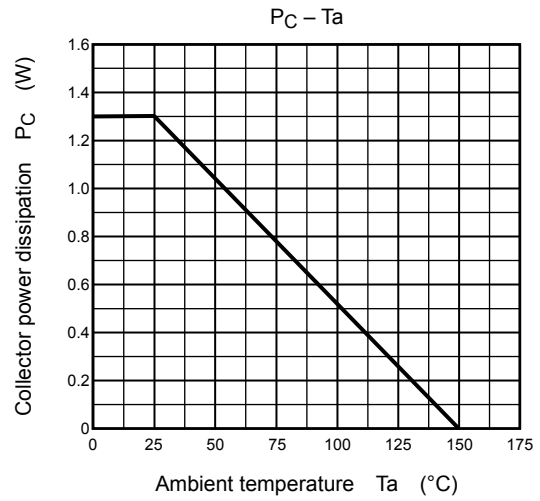
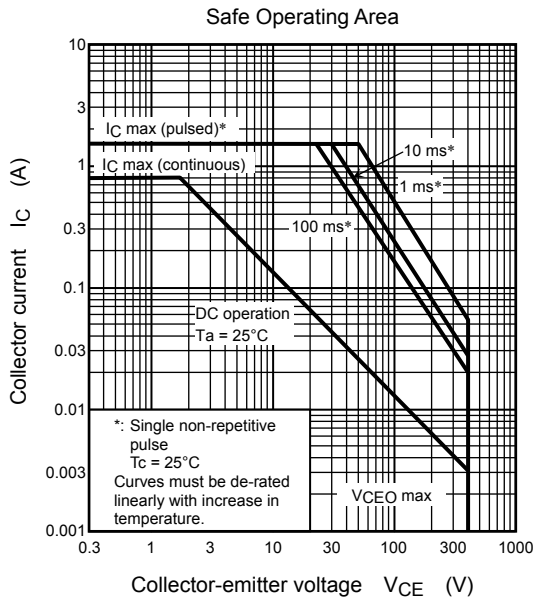
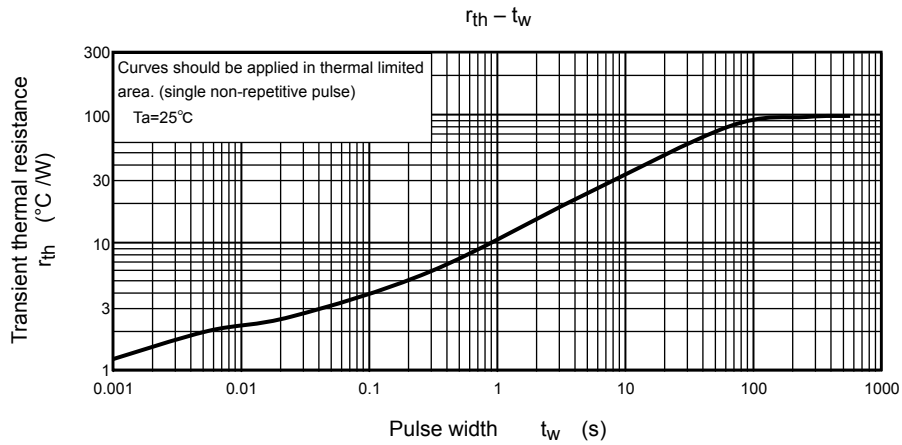
## Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Conditions	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 600\text{ V}, I_E = 0$	—	—	100	$\mu\text{A}$
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 7\text{ V}, I_C = 0$	—	—	100	$\mu\text{A}$
DC current gain		$h_{FE} (1)$	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$	20	—	80	
		$h_{FE} (2)$	$V_{CE} = 5\text{ V}, I_C = 0.5\text{ A}$	12	—	—	
Collector-emitter saturation voltage		$V_{CE} (\text{sat})$	$I_C = 0.1\text{ A}, I_B = 0.01\text{ A}$	—	—	0.4	V
Base-emitter saturation voltage		$V_{BE} (\text{sat})$	$I_C = 0.1\text{ A}, I_B = 0.01\text{ A}$	—	—	1.0	V
Switching time	Rise time	$t_r$	 <p><math>I_{B1} = -I_{B2} = 0.05\text{ A}</math>, duty cycle <math>\leq 1\%</math></p>	—	—	1.0	$\mu\text{s}$
	Storage time	$t_{stg}$		—	—	2.5	
	Fall time	$t_f$		—	—	1.5	

## Marking







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