

TOSHIBA Transistor Silicon NPN Triple Diffused Type

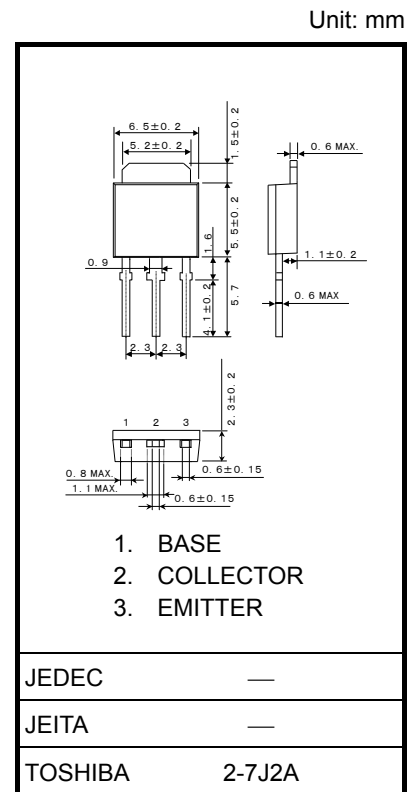
2SC6142

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

- Excellent switching times: $t_f = 0.15 \mu s$ (typ.)
- High collector breakdown voltage: $V_{CES} = 800 V$, $V_{CEO} = 375 V$

Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	800	V
Collector-emitter voltage		V_{CES}	800	V
		V_{CEO}	375	V
Emitter-base voltage		V_{EBO}	8	V
Collector current	DC	I_C	1.5	A
	Pulse	I_{CP}	3	
Base current		I_B	0.75	A
Collector power dissipation		P_C	1.1	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C



Weight: 0.32 g (typ.)

Note 1: Ensure that the channel temperature does not exceed 150°C during use of the device.

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.

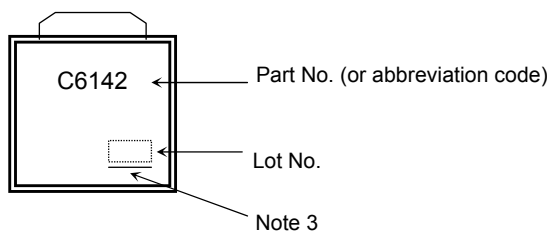
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Start of commercial production
2008-03

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cutoff current		I_{CBO}	$V_{CB} = 800\text{ V}, I_E = 0$	—	—	50	μA
Emitter cutoff current		I_{EBO}	$V_{EB} = 8\text{ V}, I_C = 0$	—	—	100	nA
Collector-base breakdown voltage		$V_{(BR)CBO}$	$I_C = 1\text{ mA}, I_E = 0$	800	—	—	V
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	375	—	—	V
DC current gain		$h_{FE(1)}$	$V_{CE} = 5\text{ V}, I_C = 1\text{ mA}$	80	—	—	—
		$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$	100	—	200	
		$h_{FE(3)}$	$V_{CE} = 5\text{ V}, I_C = 0.2\text{ A}$	80	—	—	
Collector emitter saturation voltage		$V_{CE(sat)}$	$I_C = 0.8\text{ A}, I_B = 0.1\text{ A}$	—	—	0.9	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 0.8\text{ A}, I_B = 0.1\text{ A}$	—	—	1.3	V
Switching time	Rise time	t_r		—	0.2	—	μs
	Storage time	t_{stg}		—	3.5	—	
	Fall time	t_f		$I_{B1} = 20\text{ mA}, I_{B2} = 50\text{ mA}$ Duty cycle $\leq 1\%$	—	0.15	

Marking

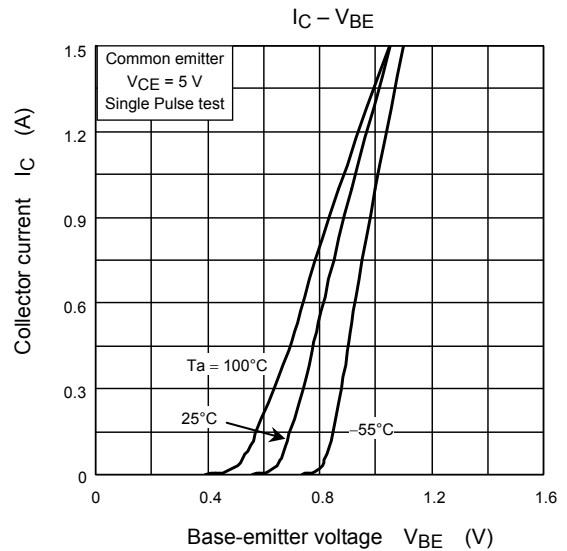
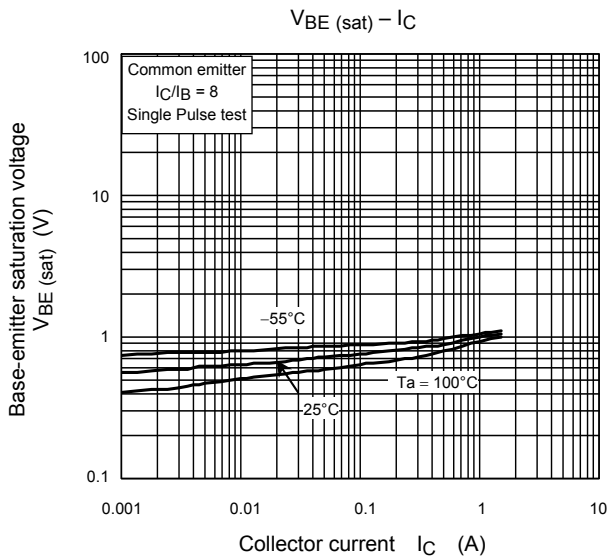
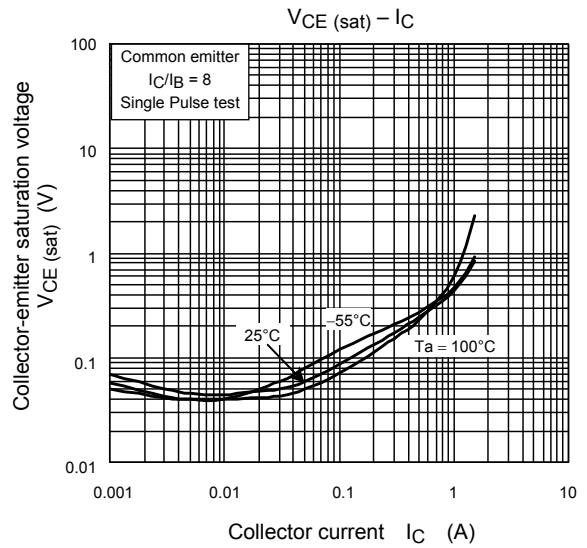
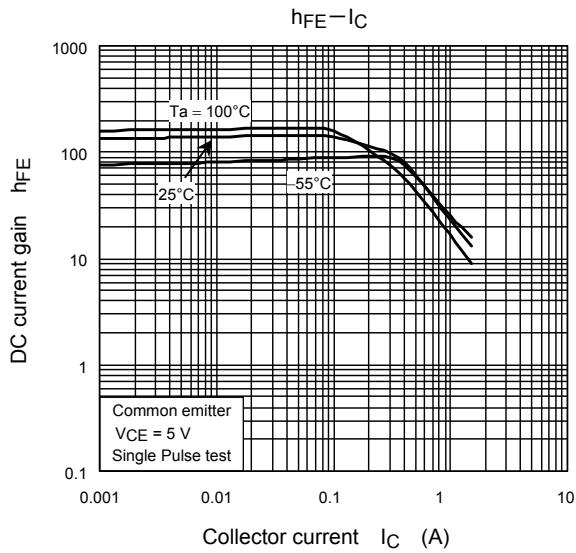
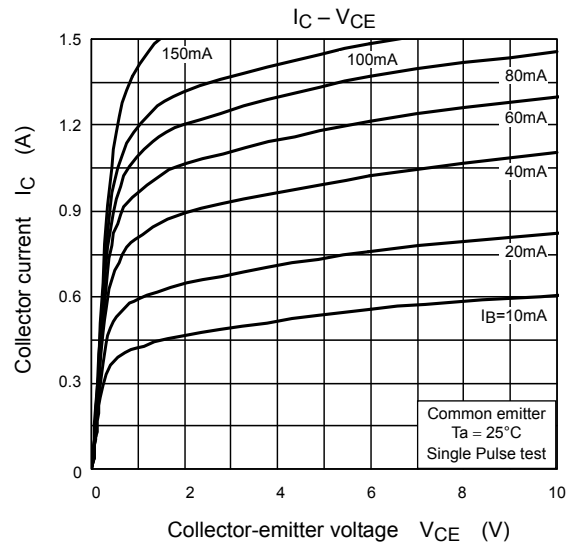
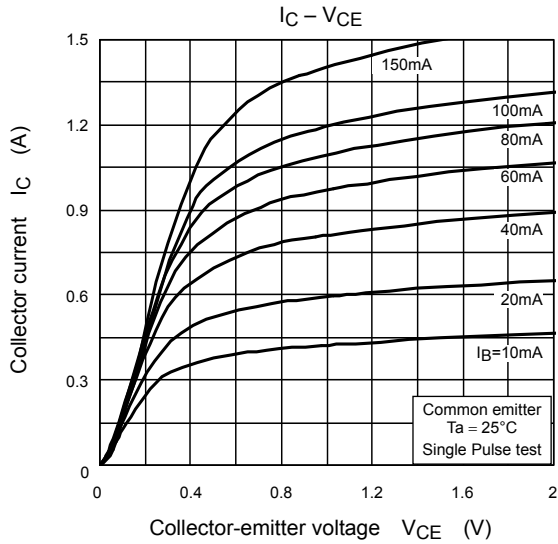


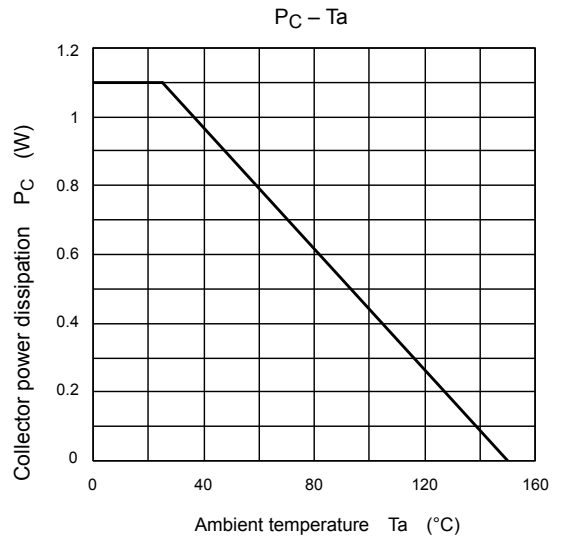
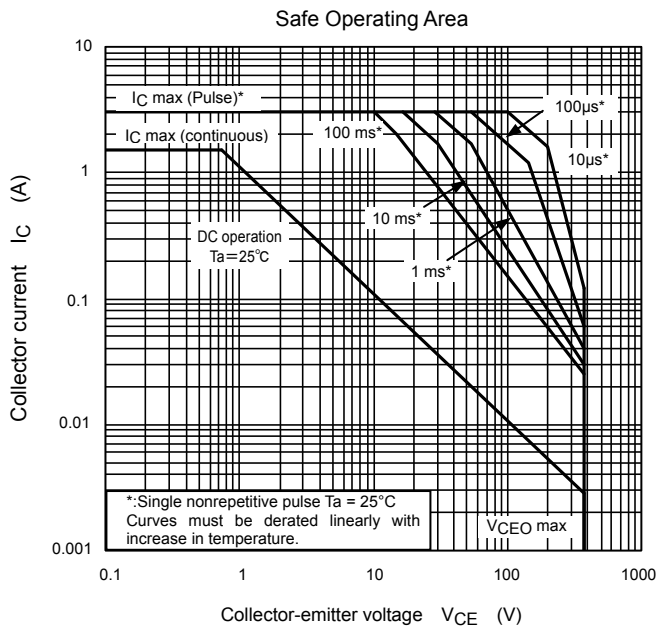
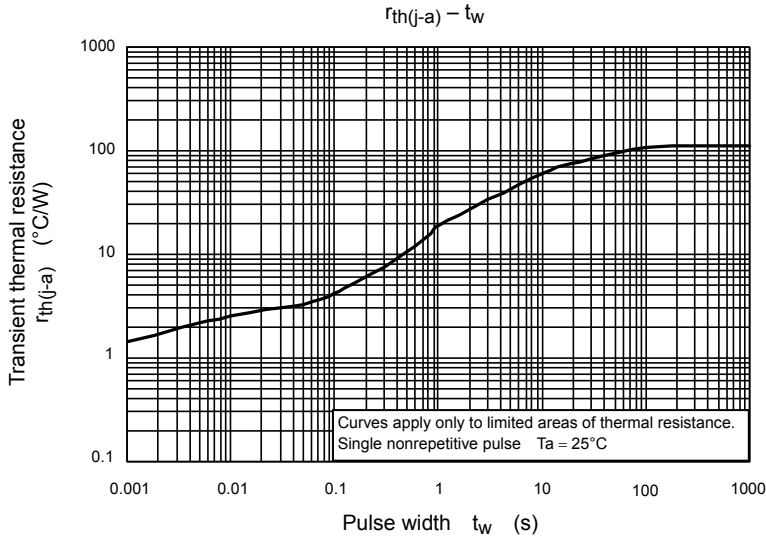
Note 3: A line under a Lot No. identifies the indication of product Labels.

[[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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