

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON POWER)

2SD1409A

IGNITER APPLICATIONS

HIGH VOLTAGE SWITCHING APPLICATIONS

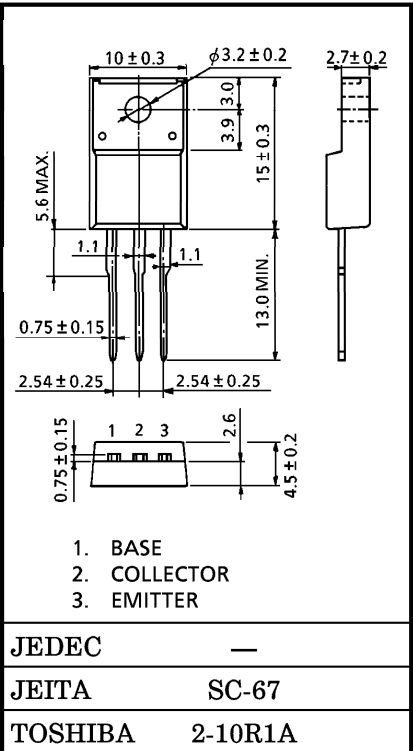
- High DC Current Gain :  $h_{FE} = 600$  (Min.)  
( $V_{CE} = 2\text{ V}$ ,  $I_C = 2\text{ A}$ )
- Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

MAXIMUM RATINGS ( $T_c = 25^\circ\text{C}$ )

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	600	V
Collector-Emitter Voltage		$V_{CEO}$	400	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current		$I_C$	6	A
Base Current		$I_B$	1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	2.0	W
	$T_c = 25^\circ\text{C}$		25	
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	$-55\sim 150$	$^\circ\text{C}$

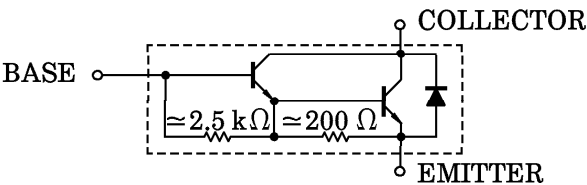
INDUSTRIAL APPLICATIONS

Unit in mm

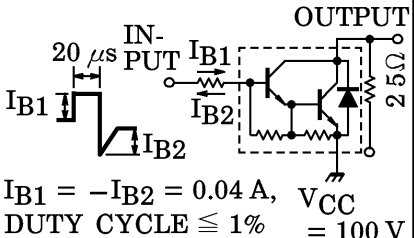


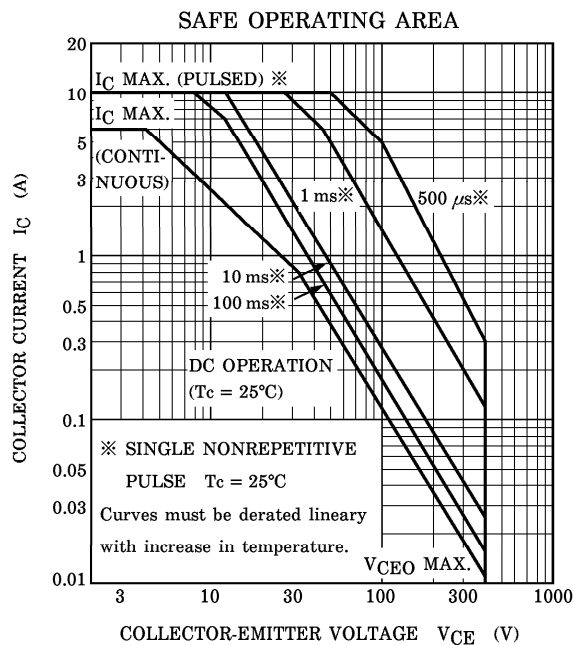
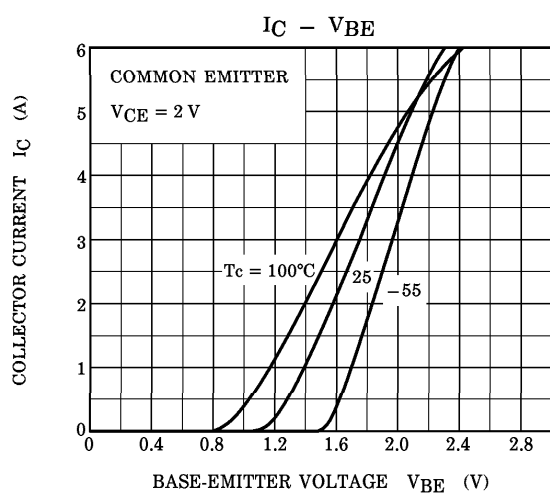
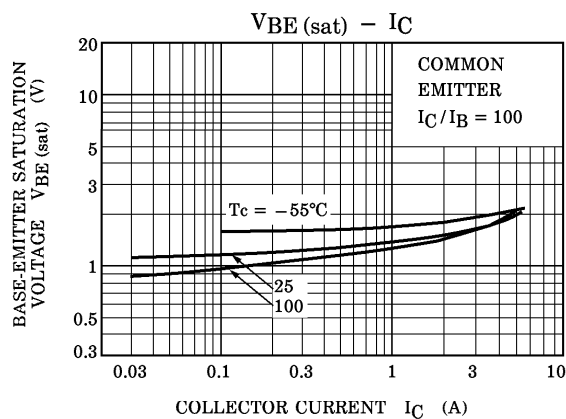
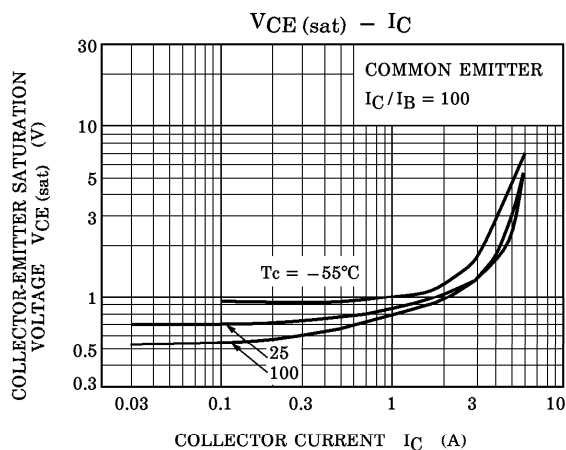
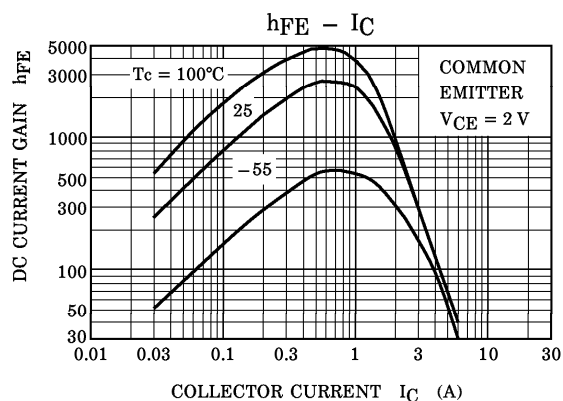
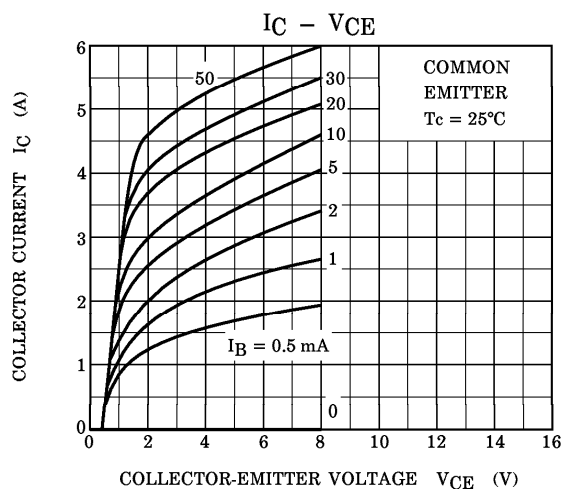
Weight : 1.7 g (Typ.)

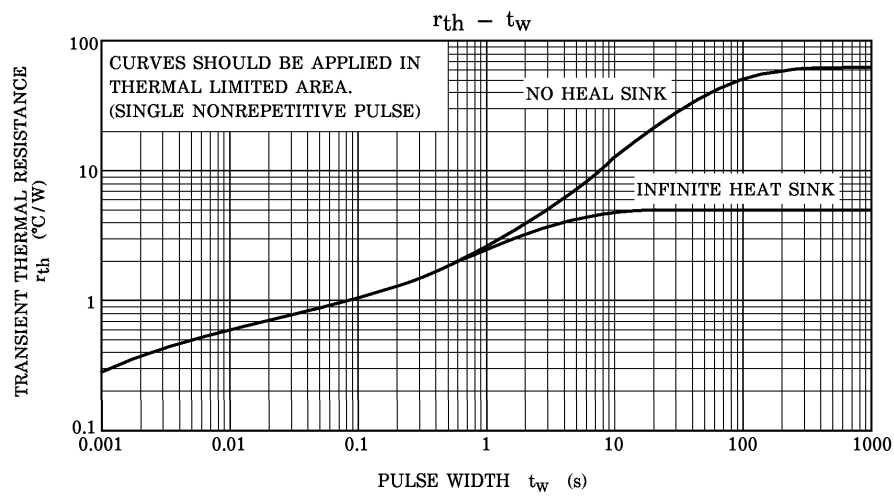
EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V <sub>CB</sub> = 600 V, I <sub>E</sub> = 0	—	—	0.5	mA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0	—	—	3	mA
Collector-Emitter Breakdown Voltage		V (BR) CEO	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	400	—	—	V
DC Current Gain		h <sub>FE</sub> (1)	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 2 A	600	—	—	
		h <sub>FE</sub> (2)	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 4 A	100	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = 4 A, I <sub>B</sub> = 0.04 A	—	—	2.0	V
Base-Emitter Saturation Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = 4 A, I <sub>B</sub> = 0.04 A	—	—	2.5	V
Emitter-Collector Forward Voltage		V <sub>ECF</sub>	I <sub>E</sub> = 4 A, I <sub>B</sub> = 0	—	—	3.0	V
Collector Output Capacitance		C <sub>ob</sub>	V <sub>CB</sub> = 50 V, I <sub>E</sub> = 0, f = 1 MHz	—	35	—	pF
Switching Time	Turn-on Time	t <sub>on</sub>	 I <sub>B1</sub> = -I <sub>B2</sub> = 0.04 A, V <sub>CC</sub> = 100 V DUTY CYCLE ≤ 1%	—	1	—	μs
	Storage Time	t <sub>stg</sub>		—	8	—	
	Fall Time	t <sub>f</sub>		—	5	—	





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