

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

## 2SC3405

SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING  
APPLICATIONS

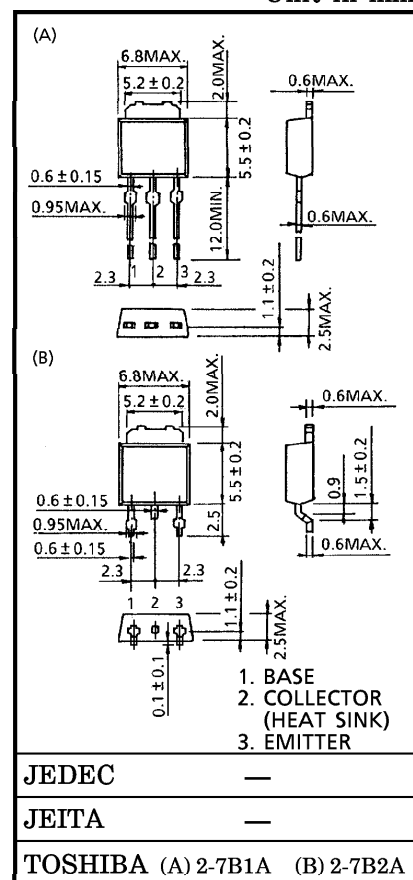
HIGH SPEED DC-DC CONVERTER APPLICATIONS

- Excellent Switching Times ( $I_C = 0.3\text{ A}$ )  
:  $t_r = 1.0\text{ }\mu\text{s}$  (Max.),  $t_f = 1.0\text{ }\mu\text{s}$  (Max.)
- High Collector Breakdown Voltage :  $V_{CEO} = 800\text{ V}$

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

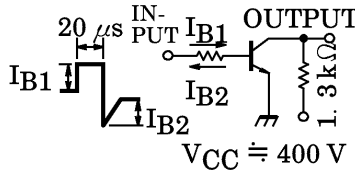
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	900	V
Collector-Emitter Voltage	$V_{CEO}$	800	V
Emitter-Base Voltage	$V_{EBO}$	8	V
Collector Current	DC	$I_C$	A
	Pulse	$I_{CP}$	
Base Current	$I_B$	0.2	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	W
	$T_c = 25^\circ\text{C}$	20	
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55\sim 150$	$^\circ\text{C}$

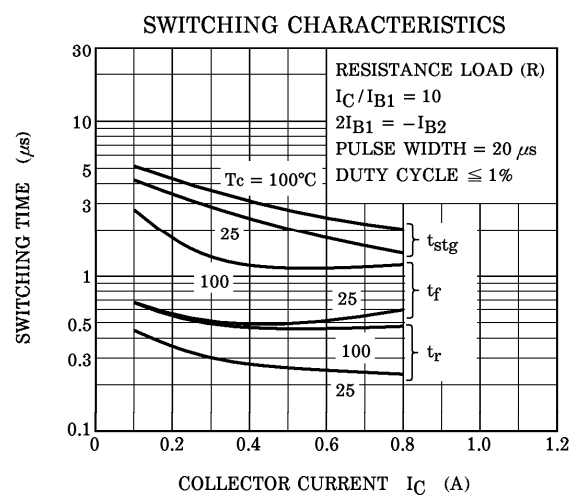
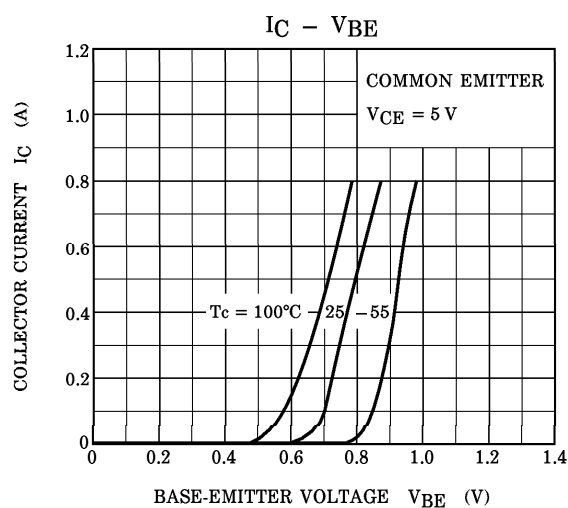
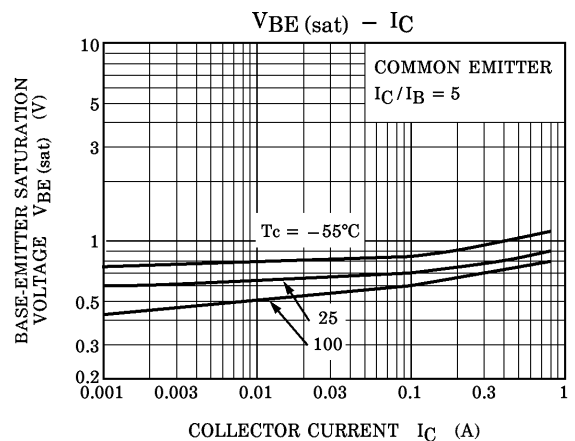
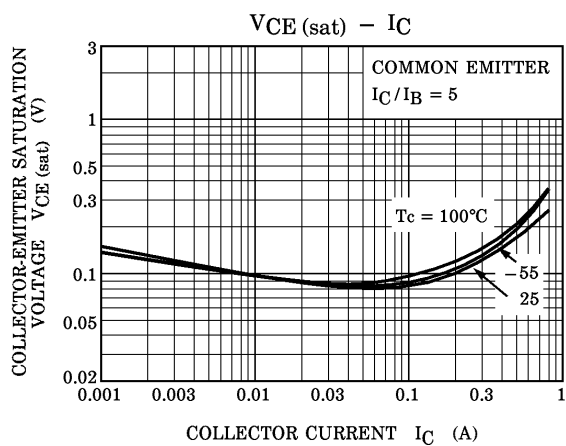
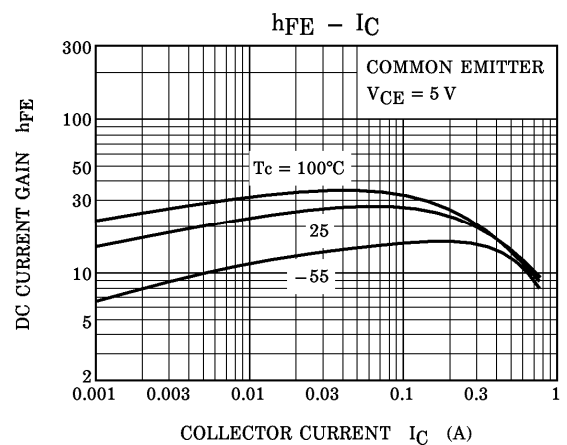
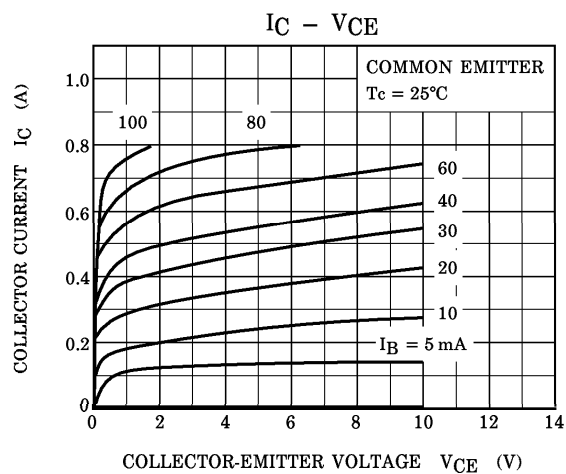
Unit in mm

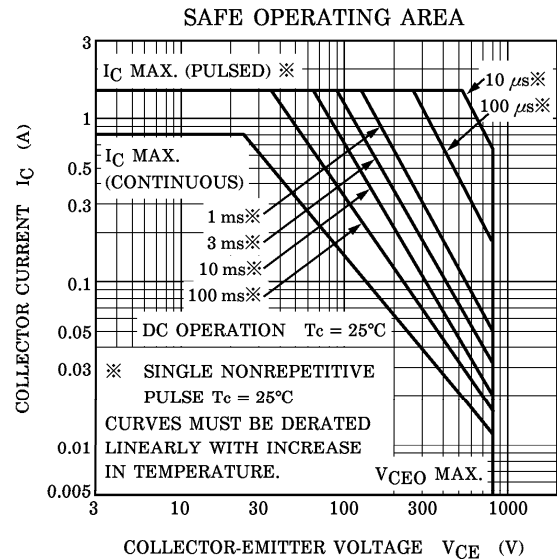
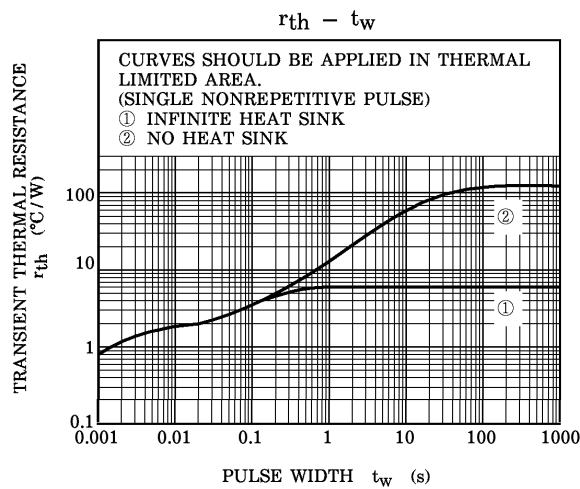


Weight : 0.36 g (Typ.)

ELECTRICAL CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ )

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 800\text{ V}, I_E = 0$	—	—	100	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 8\text{ V}, I_C = 0$	—	—	1	$\text{mA}$
Collector-Base Breakdown Voltage		$V_{(BR) CBO}$	$I_C = 1\text{ mA}, I_E = 0$	900	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	800	—	—	V
DC Current Gain		$h_{FE} (1)$	$V_{CE} = 5\text{ V}, I_C = 1\text{ mA}$	6	—	—	
		$h_{FE} (2)$	$V_{CE} = 5\text{ V}, I_C = 0.3\text{ A}$	10	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 0.3\text{ A}, I_B = 0.06\text{ A}$	—	—	0.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 0.3\text{ A}, I_B = 0.06\text{ A}$	—	—	1.2	V
Switching Time	Rise Time	$t_r$	 <p><math>I_{B1} = -I_{B2} = 0.06\text{ A}</math>, DUTY CYCLE <math>\leq 1\%</math></p>	—	—	1.0	$\mu\text{s}$
	Storage Time	$t_{stg}$		—	—	4.0	
	Fall Time	$t_f$		—	—	1.0	





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