

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

# 2SC3783

HIGH SPEED AND HIGH VOLTAGE SWITCHING APPLICATIONS

SWITCHING REGULATOR APPLICATIONS

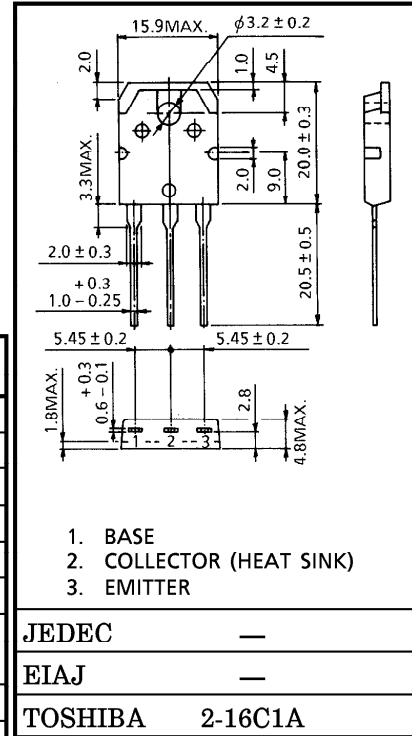
HIGH SPEED DC-DC CONVERTER APPLICATIONS

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

MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	900	V
Collector-Emitter Voltage	$V_{CEO}$	800	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	DC	$I_C$	5 A
	Pulse	$I_{CP}$	7 A
Base Current	$I_B$	3	A
Collector Power Dissipation ( $T_c = 25^\circ C$ )	$P_C$	100	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

Unit in mm



Weight : 4.7g (Typ.)

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V <sub>CB</sub> = 800V, I <sub>E</sub> = 0	—	—	100	μA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = 7V, I <sub>C</sub> = 0	—	—	1	mA
Collector-Base Breakdown Voltage		V (BR) CBO	I <sub>C</sub> = 1mA, I <sub>E</sub> = 0	900	—	—	V
Collector-Emitter Breakdown Voltage		V (BR) CEO	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	800	—	—	V
DC Current Gain		h <sub>FE</sub> (1)	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA	10	—	—	
		h <sub>FE</sub> (2)	V <sub>CE</sub> = 5V, I <sub>C</sub> = 3A	10	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = 3A, I <sub>B</sub> = 0.6A	—	—	1.0	V
Base-Emitter Saturation Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = 3A, I <sub>B</sub> = 0.6A	—	—	1.5	V
Switching Time	Rise Time	t <sub>r</sub>	<p> <math>20\mu s</math>  <math>V_{CC} = 400V</math>  <math>I_C = 4A</math>  <math>I_{B1} = 0.3A</math>  <math>I_{B2} = -0.8A</math>  <math>DUTY\ CYCLE \leq 1\%</math> </p>	—	—	1.0	μs
	Storage Time	t <sub>stg</sub>		—	—	3.5	
	Fall Time	t <sub>f</sub>		—	—	1.0	

