

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SC3783

HIGH SPEED AND HIGH VOLTAGE SWITCHING APPLICATIONS

SWITCHING REGULATOR APPLICATIONS

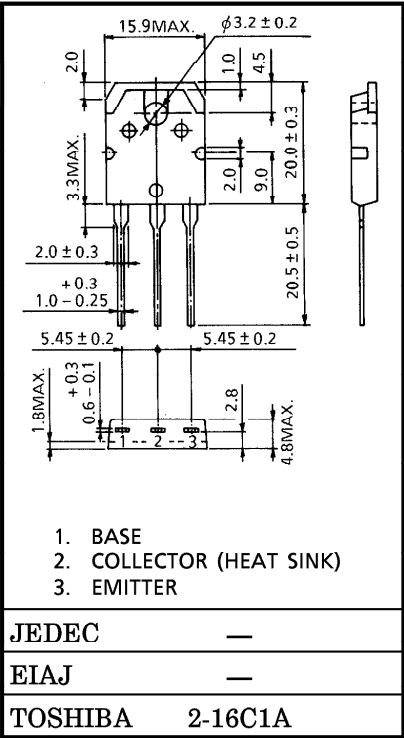
HIGH SPEED DC-DC CONVERTER APPLICATIONS

- 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 (Ta = 25°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 (Tc = 25°C)		P_C	100	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C

Unit in mm



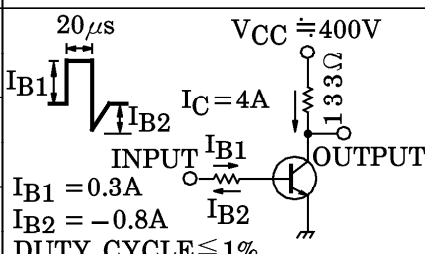
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ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 800\text{V}$, $I_E = 0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7\text{V}$, $I_C = 0$	—	—	1	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		$h_{FE} (1)$	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$	10	—	—	
		$h_{FE} (2)$	$V_{CE} = 5\text{V}$, $I_C = 3\text{A}$	10	—	—	
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 3\text{A}$, $I_B = 0.6\text{A}$	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE (sat)}$	$I_C = 3\text{A}$, $I_B = 0.6\text{A}$	—	—	1.5	V
Switching Time	Rise Time	t_r	 $20\mu\text{s}$ $V_{CC} = 400\text{V}$ I_{B1} I_{B2} $I_C = 4\text{A}$ 133Ω I_{B1} I_{B2} $I_C = 4\text{A}$ $I_{B1} = 0.3\text{A}$ $I_{B2} = -0.8\text{A}$ $DUTY\ CYCLE \leq 1\%$	—	—	1.0	μs
	Storage Time	t_{stg}		—	—	3.5	
	Fall Time	t_f		—	—	1.0	

