

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

# 2SC5548

SWITCHING REGULATOR APPLICATIONS

HIGH VOLTAGE SWITCHING APPLICATIONS

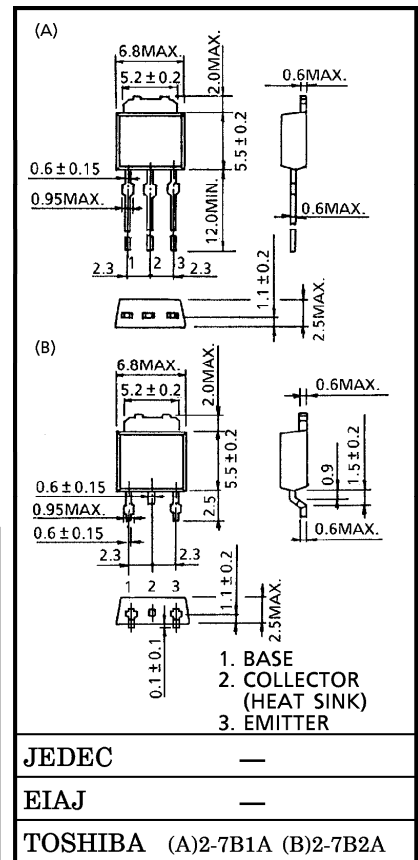
DC-DC CONVERTER APPLICATIONS

- High Speed Switching :  $t_r = 0.5 \mu s$  (Max.),  $t_f = 0.3 \mu s$  (Max.)  
( $I_C = 0.8 A$ )
- High Collector Breakdown Voltage :  $V_{CEO} = 370 V$
- High DC Current Gain :  $h_{FE} = 60$  (Min.) ( $I_C = 0.2 A$ )

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CB0}$	600	V
Collector-Emitter Voltage	$V_{CE0}$	370	V
Emitter-Base Voltage	$V_{EB0}$	7	V
Collector Current	DC	$I_C$	2
	Pulse	$I_{CP}$	4
Base Current	$I_B$	0.5	A
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	1.0
	$T_c = 25^\circ C$		15
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

Unit in mm



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 480\text{ V}, I_E = 0$	—	—	20	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 7\text{ V}, I_C = 0$	—	—	10	$\mu\text{A}$
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 1\text{ mA}, I_B = 0$	600	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	370	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 5\text{ V}, I_C = 1\text{ mA}$	50	—	120	
		$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 0.2\text{ A}$	60	—	120	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 0.8\text{ A}, I_B = 0.1\text{ A}$	—	—	1.0	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	Turn-on Time	$t_r$	<p> <math>V_{CC} = 200\text{ V}</math>  <math>I_C = 250\Omega</math>  <math>20\mu\text{s}</math>                      INPUT <math>I_{B1}</math> <math>I_{B21}</math> OUTPUT  <math>I_{B2}</math> </p>	—	—	0.5	$\mu\text{s}$
	Storage Time	$t_{stg}$		—	—	3.0	
	Fall Time	$t_f$		$I_{B1} = 0.1\text{ A}, I_{B2} = -0.2\text{ A}$ $\text{DUTY CYCLE} \leq 1\%$	—	—	

