

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

# 2SC5368

SWITCHING REGULATOR APPLICATIONS

HIGH VOLTAGE SWITCHING APPLICATIONS

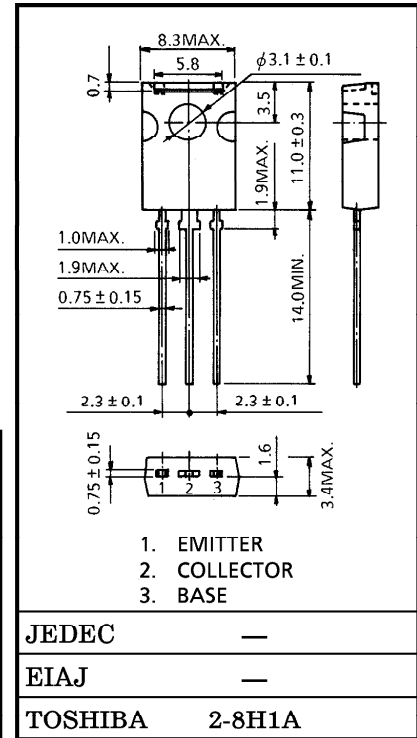
DC-DC CONVERTER APPLICATIONS

- High Speed :  $t_r = 0.5 \mu s$  (Max.),  $t_f = 0.3 \mu s$  (Max.)  
( $I_C = 0.8A$ )
- High Collector Breakdown Voltage :  $V_{CEO} = 450V$
- High DC Current Gain :  $h_{FE} = 20$  (Min.) ( $I_C = 0.3A$ )

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CB0}$	650	V
Collector-Emitter Voltage		$V_{CE0}$	450	V
Emitter-Base Voltage		$V_{EB0}$	7	V
Collector Current	DC	$I_C$	2	A
	Pulse	$I_{CP}$	4	
Base Current		$I_B$	0.5	A
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	1.5	W
	$T_c = 25^\circ C$		10	
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		$I_{CBO}$	$V_{CB} = 520V, I_E = 0$	—	—	20	$\mu A$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 7V, I_C = 0$	—	—	10	$\mu A$
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 1mA, I_E = 0$	650	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_E = 10mA, I_B = 0$	450	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 5V, I_C = 1mA$	13	—	—	—
		$h_{FE(2)}$	$V_{CE} = 5V, I_C = 0.2A$	20	—	65	—
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 0.8A, I_B = 0.1A$	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 0.8A, I_B = 0.1A$	—	—	1.3	V
Switching Time	Rise Time	$t_r$	<p> <math>20\mu s</math> <math>V_{CC} = 200V</math>  <math>I_{B1}</math> <math>I_{B2}</math> <math>I_C</math> <math>250\Omega</math>                      INPUT OUTPUT                 </p>	—	—	0.5	$\mu s$
	Storage Time	$t_{stg}$		—	—	2.0	
	Fall Time	$t_f$		$I_{B1} = 0.1A, I_{B2} = -0.2A$ $DUTY\ CYCLE \leq 1\%$	—	—	

