

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS) (DARLINGTON)

# 2SD1508

PULSE MOTOR DRIVE, HAMMER DIVE APPLICATIONS

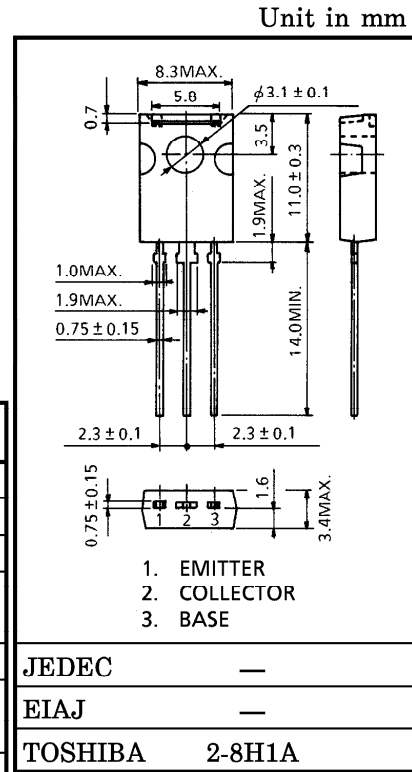
SWITCHING APPLICATIONS

POWER AMPLIFIER APPLICATIONS

- High DC Current Gain  
:  $h_{FE} = 4000$  (Min.)
- Low Saturation Voltage  
:  $V_{CE(sat)} = 1.5V$  (Max.)

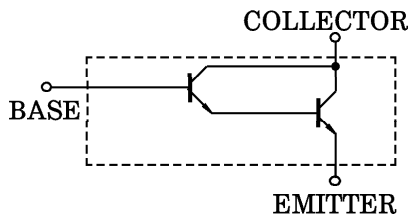
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	30	V
Collector-Emitter Voltage		$V_{CEO}$	30	V
Emitter-Base Voltage		$V_{EBO}$	10	V
Collector Current	DC	$I_C$	1.5	A
	Pulse	$I_{CP}$	3.0	
Base Current		$I_B$	50	mA
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	1.2	W
	$T_c = 25^\circ C$		10	
Junction Temperature		$T_j$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ C$



Weight : 0.72g (Typ.)

EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 30V, I_E = 0$	—	—	10	$\mu A$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 10V, I_C = 0$	—	—	10	$\mu A$
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 10mA, I_B = 0$	30	—	—	V
DC Current Gain		$h_{FE}$	$V_{CE} = 2V, I_C = 150mA$	4000	—	—	
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 1A, I_B = 1mA$	—	—	1.5	V
Base-Emitter Saturation Voltage		$V_{BE (sat)}$	$I_C = 1A, I_B = 1mA$	—	—	2.2	V
Switching Time	Turn-on Time	$t_{on}$	<p><math>I_{B1} = -I_{B2} = 1mA,</math> DUTY CYCLE <math>\leq 1\%</math></p> <p><math>V_{CC} \approx 15V</math></p>	—	0.18	—	$\mu s$
	Storage Time	$t_{stg}$		—	0.6	—	
	Fall Time	$t_f$		—	—	0.3	

