

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

# 2SD1508

PULSE MOTOR DRIVE, HAMMER DIVE APPLICATIONS

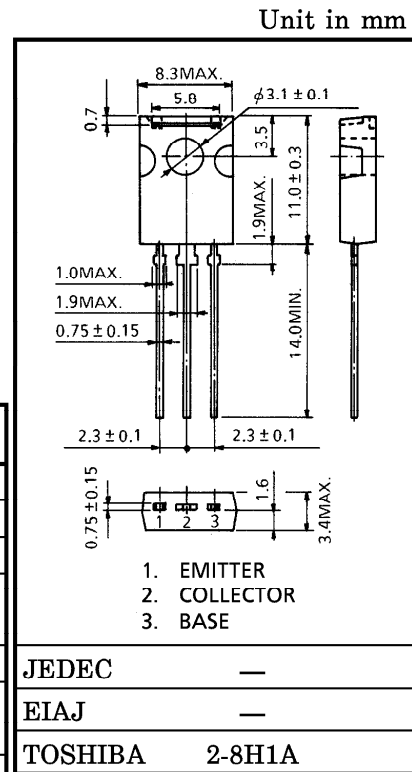
SWITCHING APPLICATIONS

POWER AMPLIFIER APPLICATIONS

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

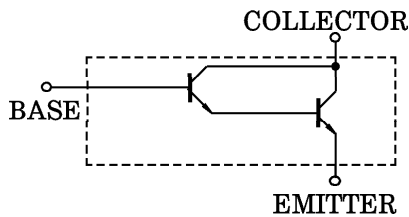
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

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.)

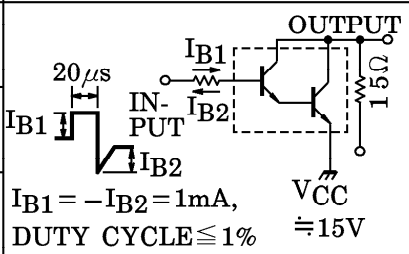
EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0	—	—	10	μA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = 10V, I <sub>C</sub> = 0	—	—	10	μA
Collector-Emitter Breakdown Voltage		V(BR) CEO	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	30	—	—	V
DC Current Gain		h <sub>FE</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 150mA	4000	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = 1A, I <sub>B</sub> = 1mA	—	—	1.5	V
Base-Emitter Saturation Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = 1A, I <sub>B</sub> = 1mA	—	—	2.2	V
Switching Time	Turn-on Time	t <sub>on</sub>	 <p> <math>I_{B1} = -I_{B2} = 1\text{mA}</math>,                      DUTY CYCLE <math>\leq 1\%</math>  <math>V_{CC} \cong 15\text{V}</math> </p>	—	0.18	—	μs
	Storage Time	t <sub>stg</sub>		—	0.6	—	
	Fall Time	t <sub>f</sub>		—	0.3	—	

