

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# 2SA1241

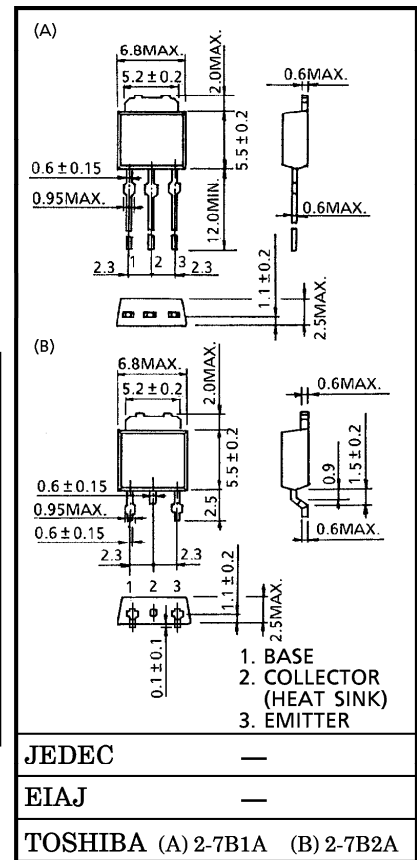
POWER AMPLIFIER APPLICATIONS  
POWER SWITCHING APPLICATIONS

Unit in mm

- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = -0.5\text{ V (Max.)}$  ( $I_C = -1\text{ A}$ )
- Excellent Switching Time :  $t_{stg} = 1.0\ \mu\text{s (Typ.)}$
- Complementary to 2SC3076

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

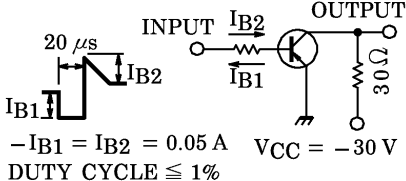
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	-50	V
Collector-Emitter Voltage		$V_{CEO}$	-50	V
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Current		$I_C$	-2	A
Base Current		$I_B$	-1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	1.0	W
	$T_c = 25^\circ\text{C}$		10	
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ\text{C}$



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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> = -50 V, I <sub>E</sub> = 0	—	—	-1.0	μA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = -5 V, I <sub>C</sub> = 0	—	—	-1.0	μA
Collector-Emitter Breakdown Voltage		V <sub>(BR)</sub> CEO	I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0	-50	—	—	V
DC Current Gain	h <sub>FE</sub> (1) (Note)		V <sub>CE</sub> = -2 V, I <sub>C</sub> = -0.5 A	70	—	240	
	h <sub>FE</sub> (2)		V <sub>CE</sub> = -2 V, I <sub>B</sub> = -1.5 A	40	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = -1 A, I <sub>B</sub> = -0.05 A	—	—	-0.5	V
Base-Emitter Saturation Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = -1 A, I <sub>B</sub> = -0.05 A	—	—	-1.2	V
Transition Frequency		f <sub>T</sub>	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -0.5 A	—	100	—	MHz
Collector Output Capacitance		C <sub>ob</sub>	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz	—	40	—	pF
Switching Time	Turn-on Time	t <sub>on</sub>	 <p> <math>20 \mu s</math>                      INPUT <math>I_{B2}</math> <math>I_{B1}</math> OUTPUT  <math>30 \Omega</math>  <math>-I_{B1} = I_{B2} = 0.05 A</math> <math>V_{CC} = -30 V</math>                      DUTY CYCLE <math>\leq 1\%</math> </p>	—	0.1	—	μs
	Storage Time	t <sub>stg</sub>		—	1.0	—	
	Fall Time	t <sub>f</sub>		—	—	0.1	

Note : h<sub>FE</sub>(1) Classification O : 70~140, Y : 120~240

