

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# 2SA1241

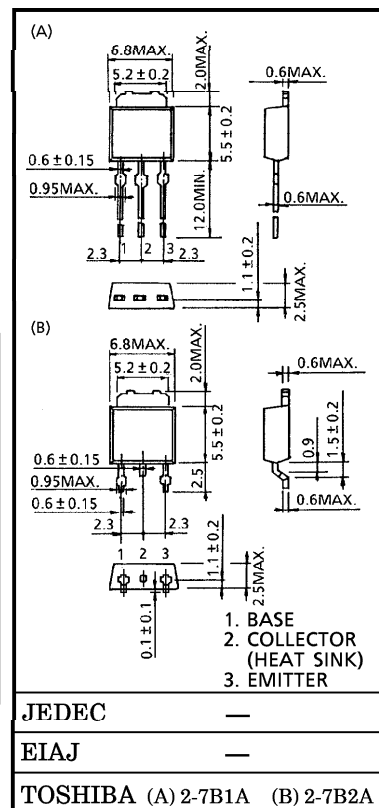
POWER AMPLIFIER APPLICATIONS  
POWER SWITCHING APPLICATIONS

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	$P_C$	1.0	W
Dissipation		10	
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ\text{C}$



Weight : 0.36 g

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-1.0	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-1.0	$\mu\text{A}$
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -10\text{ mA}, I_B = 0$	-50	—	—	V
DC Current Gain	$h_{FE(1)}$ (Note)		$V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$	70	—	240	
	$h_{FE(2)}$		$V_{CE} = -2\text{ V}, I_B = -1.5\text{ A}$	40	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -1\text{ A}, I_B = -0.05\text{ A}$	—	—	-0.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = -1\text{ A}, I_B = -0.05\text{ A}$	—	—	-1.2	V
Transition Frequency		$f_T$	$V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$	—	100	—	MHz
Collector Output Capacitance		$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$	—	40	—	pF
Switching Time	Turn-on Time	$t_{on}$	<p> <math>20\ \mu\text{s}</math> INPUT <math>I_{B2}</math> OUTPUT  <math>I_{B1}</math> <math>I_{B1}</math> <math>30\ \Omega</math>  <math>-I_{B1} = I_{B2} = 0.05\text{ A}</math> <math>V_{CC} = -30\text{ V}</math>                      DUTY CYCLE <math>\leq 1\%</math> </p>	—	0.1	—	$\mu\text{s}$
	Storage Time	$t_{stg}$		—	1.0	—	
	Fall Time	$t_f$		—	0.1	—	

Note :  $h_{FE(1)}$  Classification O : 70~140, Y : 120~240

