

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# 2SA1213

POWER AMPLIFIER APPLICATIONS

POWER SWITCHING APPLICATIONS

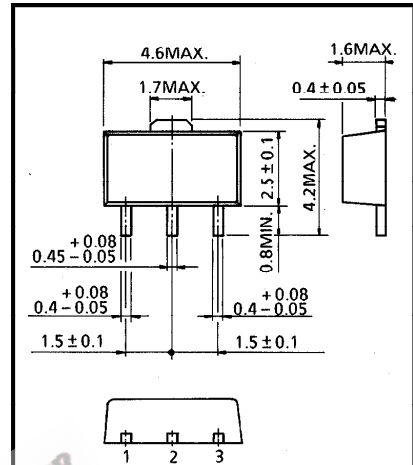
- Low Saturation Voltage :  $V_{CE(sat)} = -0.5V$  (Max.)  
( $I_C = -1A$ )
- High Speed Switching Time:  $t_{stg} = 1.0\mu s$  (Typ.)
- $P_C = 1 \sim 2W$  (Mounted on Ceramic Substrate)
- Small Flat Package
- Complementary to 2SC2873

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

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	$I_B$	-0.4	A
Collector Power Dissipation	$P_C$	500	mW
Collector Power Dissipation	$P_C^*$	1000	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

\* : Mounted on ceramic substrate (250mm<sup>2</sup>×0.8t)

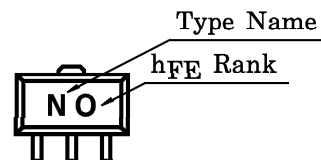
Unit in mm



PW-MINI	1. BASE 2. COLLECTOR (HEAT SINK) 3. EMITTER
JEDEC	—
EIAJ	SC-62
TOSHIBA	2-5K1A

Weight : 0.05g

Marking



961001EAA2

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -50V, I_E = 0$	—	—	-0.1	$\mu A$	
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$	—	—	-0.1	$\mu A$	
Collector-Emitter Breakdown Voltage	$V_{(BR) CEO}$	$I_C = -10mA, I_B = 0$	-50	—	—	V	
DC Current Gain	$h_{FE(1)}$ (Note)	$V_{CE} = -2V, I_C = -0.5A$	70	—	240		
	$h_{FE(2)}$	$V_{CE} = -2V, I_C = -2.0A$	20	—	—		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -1A, I_B = -0.05A$	—	—	-0.5	V	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1A, I_B = -0.05A$	—	—	-1.2	V	
Transition Frequency	$f_T$	$V_{CE} = -2V, I_C = -0.5A$	—	120	—	MHz	
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	40	—	pF	
Switching Time	Turn-on Time	$t_{on}$			—	0.1	$\mu s$
	Storage Time	$t_{stg}$			—	1.0	
	Fall Time	$t_f$			—	0.1	

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

