

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC3072

STROBE FLASH APPLICATIONS

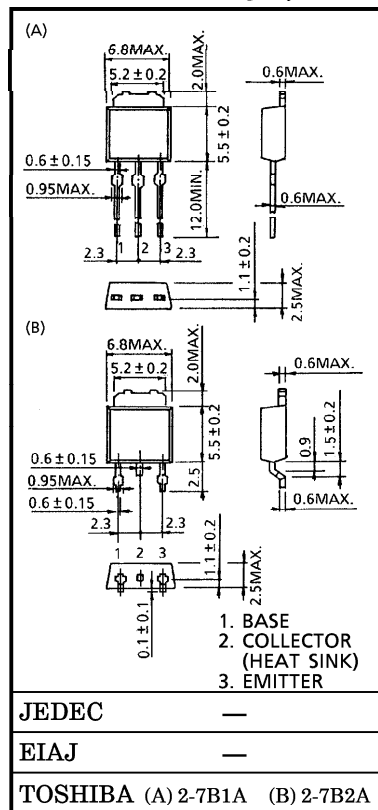
MEDIUM POWER AMPLIFIER APPLICATIONS

- High DC Current Gain :  $h_{FE} = 140 \sim 450$   
 $(V_{CE} = 2\text{ V}, I_C = 0.5\text{ A})$   
 $h_{FE} = 70$  (Min.)  $(V_{CE} = 2\text{ V}, I_C = 4\text{ A})$
- Low Collector Saturation Voltage  
 $: V_{CE}(\text{sat}) = 1.0\text{ V (Max.)}$   $(I_C = 4\text{ A}, I_B = 0.1\text{ A})$
- High Power Dissipation  
 $: P_C = 10\text{ W}$   $(T_c = 25^\circ\text{C})$ ,  $P_C = 1.0\text{ W}$   $(T_a = 25^\circ\text{C})$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	50	V
Collector-Emitter Voltage		$V_{CES}$	40	V
		$V_{CEO}$	20	
Emitter-Base Voltage		$V_{EBO}$	8	V
Collector Current	DC	$I_C$	5	A
	Pulsed (Note 1)	$I_{CP}$	8	A
Base Current		$I_B$	0.5	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	$^\circ\text{C}$

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA (A) 2-7B1A (B) 2-7B2A	

Weight : 0.36 g

Note 1 : Pulse Test : Pulse Width = 10 ms (Max.) Duty Cycle = 30% (Max.)

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## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 40\text{ V}, I_E = 0$	—	—	100	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 8\text{ V}, I_C = 0$	—	—	100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	20	—	—	V
DC Current Gain	$h_{FE(1)}$ (Note 2)	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$	140	—	450	
	$h_{FE(2)}$	$V_{CE} = 2\text{ V}, I_C = 4\text{ A}$	70	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4\text{ A}, I_B = 0.1\text{ A}$	—	—	1.0	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = 2\text{ V}, I_C = 4\text{ A}$	—	—	1.5	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

Note 2 :  $h_{FE(1)}$  Classification    A : 140~240,    B : 200~330,    C : 300~450

