

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3072

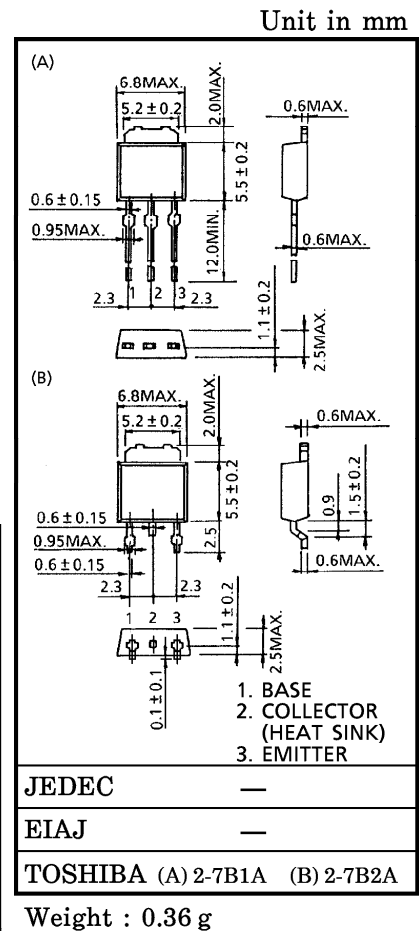
STROBE FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

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



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

