

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

2SC4681

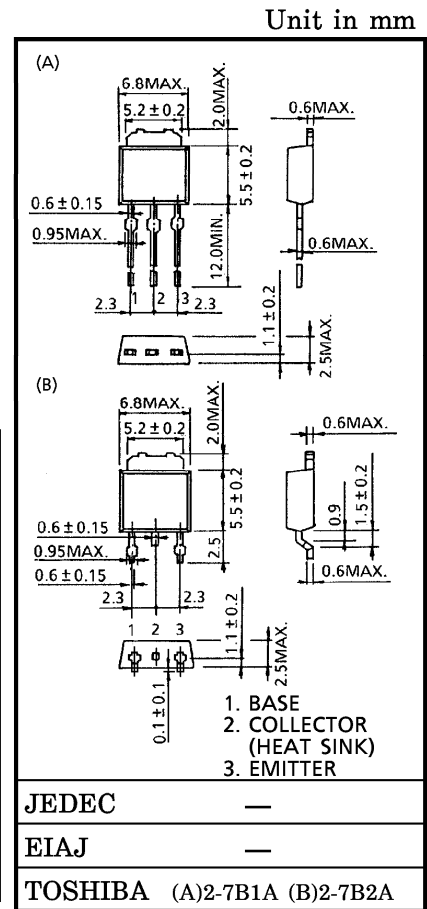
STROBE FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

- Excellent h_{FE} Linearity
 : $h_{FE}(1) = 200 \sim 600$ ($V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$)
 : $h_{FE}(2) = 140$ (Min.) ($V_{CE} = 2\text{ V}$, $I_C = 3\text{ A}$)
- Low Collector Saturation Voltage
 : $V_{CE}(\text{sat}) = 0.5\text{ V}$ (Max.) ($I_C = 3\text{ A}$, $I_B = 60\text{ mA}$)
- Surface Mount Package : Lead Vending Type 2-7B2A
- Complementary to 2SA1802

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	30	V
Collector-Emitter Voltage		V_{CES}	30	V
		V_{CEO}	10	
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	3	A
	Pulse (Note 1)	I_{CP}	6	
Base Current		I_B	0.5	A
Collector Power	$T_a = 25^\circ\text{C}$	P_C	1.0	W
Dissipation	$T_c = 25^\circ\text{C}$		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.)

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{ V}$, $I_E = 0$	—	—	100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 6\text{ V}$, $I_C = 0$	—	—	100	nA
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C = 10\text{ mA}$, $I_B = 0$	10	—	—	V
DC Current Gain	$h_{FE}(1)$	$V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$	200	—	600	
	$h_{FE}(2)$	$V_{CE} = 2\text{ V}$, $I_C = 3\text{ A}$	140	200	—	
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = 3\text{ A}$, $I_B = 60\text{ mA}$	—	0.33	0.5	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = 2\text{ V}$, $I_C = 3\text{ A}$	—	0.92	1.2	V
Transition Frequency	f_T	$V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$	—	150	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	—	27	—	pF

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