

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

## 2SC4681

STROBE FLASH APPLICATIONS

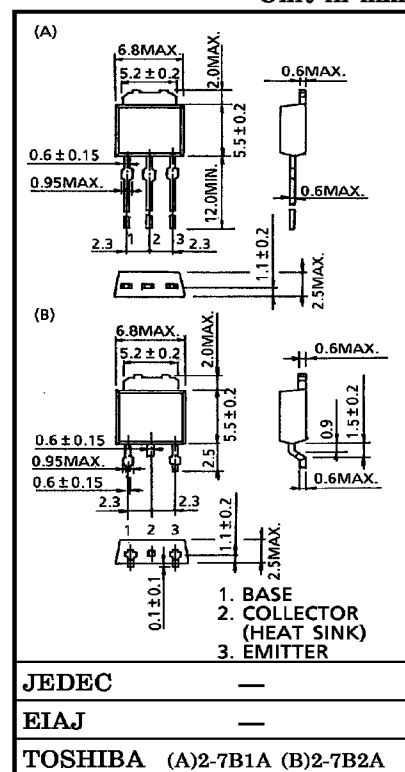
MEDIUM POWER AMPLIFIER APPLICATIONS

- 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  
:  $V_{CE(sat)} = 0.5\text{ V}$  (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		$V_{CBO}$	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 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		$T_{stg}$	$-55 \sim 150$	$^\circ\text{C}$

Unit in mm



(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	$V_{CE(sat)}$	$I_C = 3\text{ A}$ , $I_B = 60\text{ mA}$	—	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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