

TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

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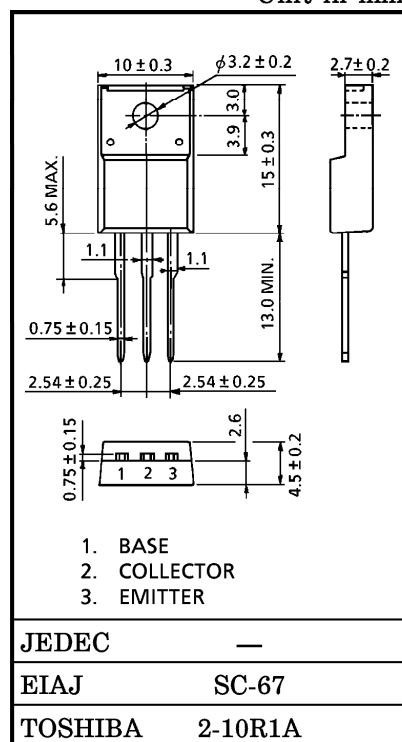
AUDIO FREQUENCY POWER AMPLIFIER APPLICATIONS

Unit in mm

- Low Collector Saturation Voltage : $V_{CE(sat)} = -1.7 \text{ V (Max.)}$
($I_C = -3 \text{ A}$, $I_B = -0.3 \text{ A}$)
- Collector Power Dissipation : $P_C = 25 \text{ W (} T_c = 25^\circ\text{C)}$

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

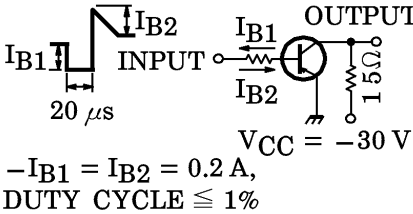
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-60	V
Collector-Emitter Voltage		V_{CEO}	-60	V
Emitter-Base Voltage		V_{EBO}	-7	V
Collector Current		I_C	-3	A
Base Current		I_B	-0.5	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	P_C	2.0	W
	$T_c = 25^\circ\text{C}$		25	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -60 \text{ V}, I_E = 0$	—	—	-100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -7 \text{ V}, I_C = 0$	—	—	-100	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -50 \text{ mA}, I_B = 0$	-60	—	—	V
DC Current Gain	$h_{FE(1)}$ (Note)		$V_{CE} = -5 \text{ V}, I_C = -0.5 \text{ A}$	60	—	200	
	$h_{FE(2)}$		$V_{CE} = -5 \text{ V}, I_C = -3 \text{ A}$	20	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -3 \text{ A}, I_B = -0.3 \text{ A}$	—	-0.5	-1.7	V
Base-Emitter Voltage		V_{BE}	$V_{CE} = -5 \text{ V}, I_C = -0.5 \text{ A}$	—	-0.7	-1.0	V
Transition Frequency		f_T	$V_{CE} = -5 \text{ V}, I_C = -0.5 \text{ A}$	—	9	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	150	—	pF
Switching Time	Turn-on Time	t_{on}	 $-I_{B1} = I_{B2} = 0.2 \text{ A}$, DUTY CYCLE $\leq 1\%$	—	0.4	—	μs
	Storage Time	t_{stg}		—	1.7	—	
	Fall Time	t_f		—	0.5	—	

(Note) : $h_{FE(1)}$ Classification O : 60~120, Y : 100~200

