

TOSHIBA TRANSISTOR SILOCON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC2458[Ⓐ]

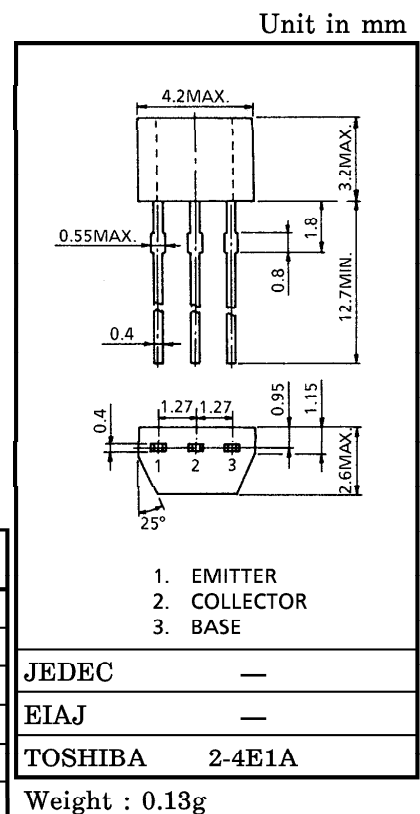
AUDIO AMPLIFIER APPLICATIONS

LOW NOISE AUDIO AMPLIFIER APPLICATIONS

- High Current Capability : $I_C = 150\text{mA}$ (Max.)
- High DC Current Gain : $h_{FE} = 70 \sim 700$
- Excellent h_{FE} Linearity
: $h_{FE}(I_C = 0.1\text{mA}) / h_{FE}(I_C = 2\text{mA}) = 0.95$ (Typ.)
- Low Noise : $NF(2) = 0.2\text{dB}$ (Typ.), 3dB (Max.)
- Complementary to 2SA1048[Ⓐ].
- Small Package.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Base Current	I_B	50	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim 125$	$^\circ\text{C}$

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 50\text{V}$, $I_E = 0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}$, $I_C = 0$	—	—	0.1	μA
DC Current Gain	h_{FE} (Note)	$V_{CE} = 6\text{V}$, $I_C = 2\text{mA}$	70	—	700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$	—	0.1	0.25	V
Transition Frequency	f_T	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$	80	—	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$	—	2.0	3.5	pF
Noise Figure	NF (1)	$V_{CE} = 6\text{V}$, $I_C = 0.1\text{mA}$, $f = 100\text{Hz}$, $R_G = 10\text{k}\Omega$	—	0.5	6	dB
	NF (2)	$V_{CE} = 6\text{V}$, $I_C = 0.1\text{mA}$, $f = 1\text{kHz}$, $R_G = 10\text{k}\Omega$	—	0.2	3	

Note : h_{FE} Classification O : 70~140, Y : 120~240, GR : 200~400, BL : 350~700

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