

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC3006

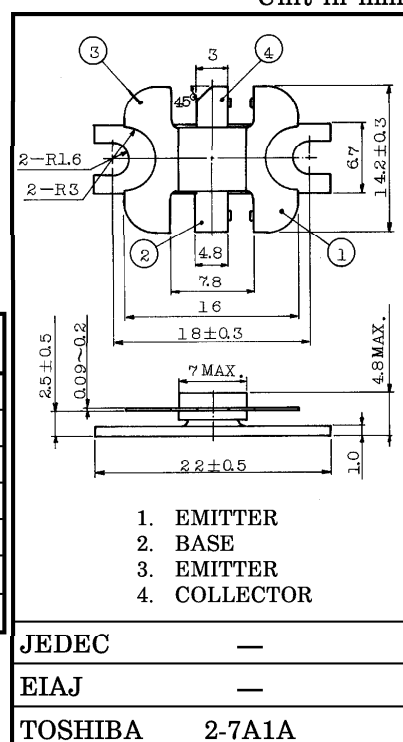
UHF BAND POWER AMPLIFIER APPLICATIONS

Unit in mm

- Output Power : $P_o = 3\text{W (Min.)}$
($f = 470\text{MHz}$, $V_{CC} = 12.6\text{V}$, $P_i = 0.4\text{W}$)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	35	V
Collector-Emitter Voltage	V_{CEO}	17	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current	I_C	1	A
Collector Power Dissipation	P_C	10	W
Junction Temperature	T_j	175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65~175	$^\circ\text{C}$

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

Weight : 1.9g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 15\text{V}$, $I_E = 0$	—	—	1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 2\text{mA}$, $I_E = 0$	35	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\text{mA}$, $I_B = 0$	17	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 0.2\text{mA}$, $I_C = 0$	3.5	—	—	V
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 0.5\text{A}$ *	10	—	—	—
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$	—	10	—	pF
Output Power	P_o	$V_{CC} = 12.6\text{V}$	3	—	—	W
Power Gain	G_p	$f = 470\text{MHz}$, $P_i = 0.4\text{W}$	8.8	—	—	dB
Collector Efficiency	η_C	(Fig.)	50	—	—	%

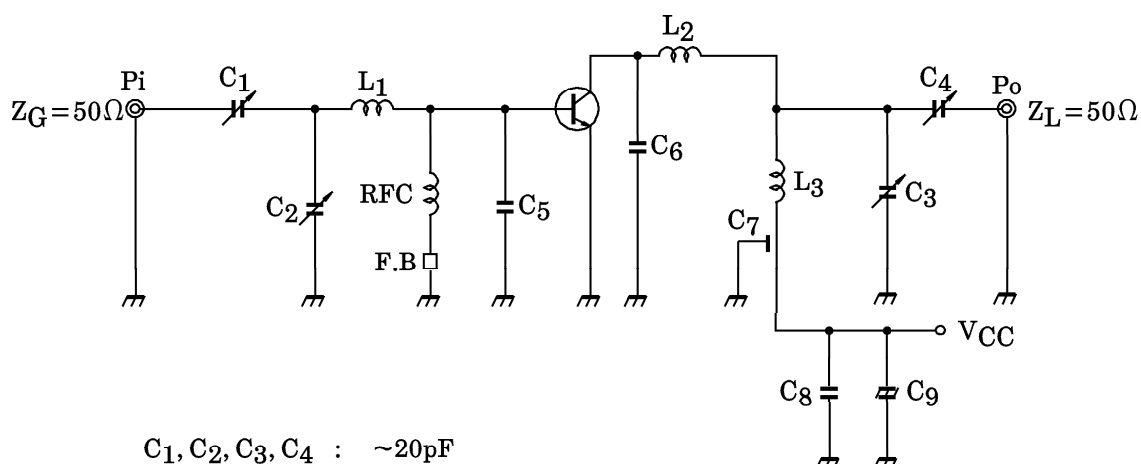
* Pulse Test : Pulse Width $\leq 100\mu\text{s}$, Duty Cycle $\leq 3\%$

CAUTION

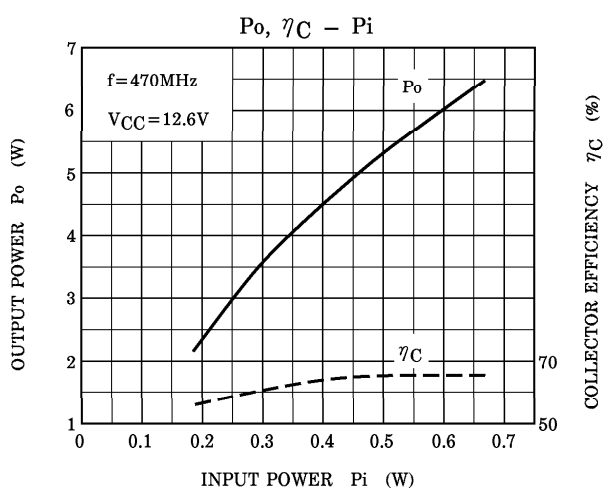
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Fig. P_o TEST CIRCUIT

- C_1, C_2, C_3, C_4 : $\sim 20\text{pF}$
 C_5, C_6 : 10pF
 C_7 : $0.01\mu\text{F}$
 C_8 : $0.02\mu\text{F}$
 C_9 : $10\mu\text{F}$
 L_1, L_2 : $5 \times 20 \times 0.1\text{mm}$ COPPER PLATE
 L_3 : $\phi 1$ SILVER PLATED COPPER WIRE, 10ID, 2T
 RFC : $\phi 0.5$ ENAMEL COATED COPPER WIRE, 7ID, 10T
 F.B : FERRITE BEADS

**CAUTION**

These are only typical curves and devices are not necessarily guaranteed at these curves.