

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC3006

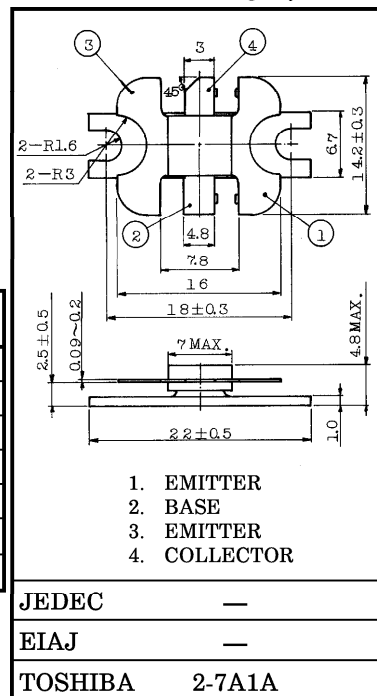
UHF BAND POWER AMPLIFIER APPLICATIONS

Unit in mm

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

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	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	$^\circ C$
Storage Temperature Range	T_{stg}	-65~175	$^\circ C$



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

Weight : 1.9g

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

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

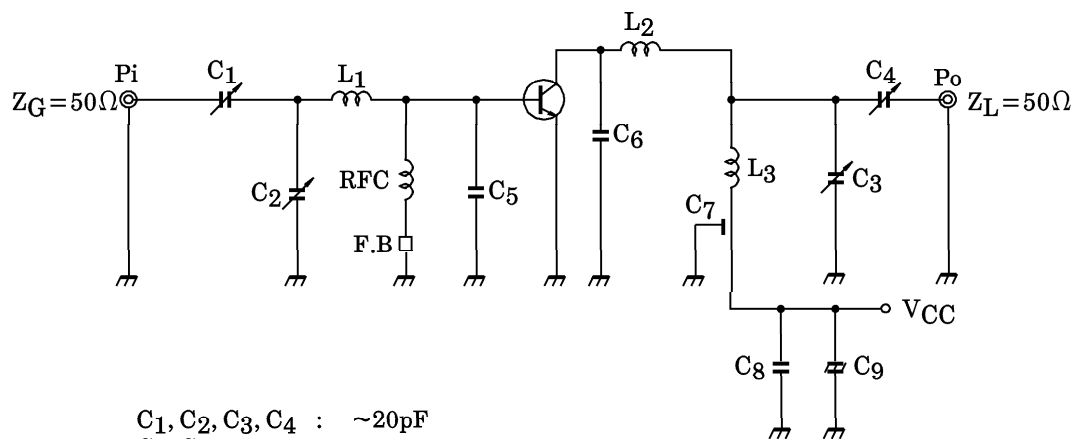
CAUTION

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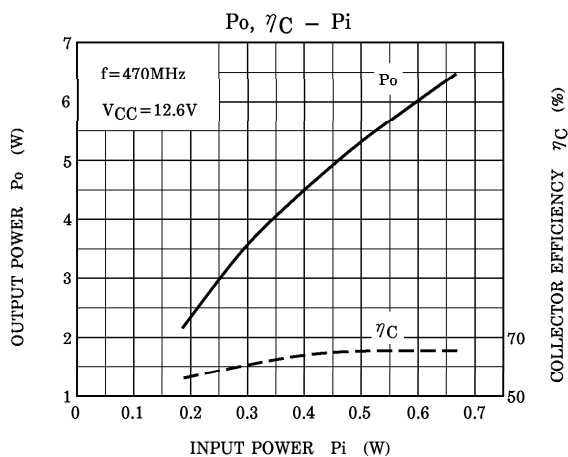
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Fig. P_o TEST CIRCUIT



- C₁, C₂, C₃, C₄ : ~20pF
- C₅, C₆ : 10pF
- C₇ : 0.01μF
- C₈ : 0.02μF
- C₉ : 10μF
- L₁, L₂ : 5×20×0.1mm COPPER PLATE
- L₃ : φ1 SILVER PLATED COPPER WIRE, 10ID, 2T
- RFC : φ0.5 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.