TOSHIBA 2SC3006

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2 S C 3 0 0 6

UHF BAND POWER AMPLIFIER APPLICATIONS

Output Power : Po=3W (Min.)

 $(f=470MHz, V_{CC}=12.6V, Pi=0.4W)$

MAXIMUM RATINGS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	v_{CBO}	35	V
Collector-Emitter Voltage	v_{CEO}	17	V
Emitter-Base Voltage	$v_{ m EBO}$	3.5	V
Collector Current	$I_{\mathbf{C}}$	1	A
Collector Power Dissipation	PC	10	W
Junction Temperature	Tj	175	°C
Storage Temperature Range	$ m T_{stg}$	-65~175	°C

Unit in mm 2-R1.6 2-R3 (1)7.8 16 4.8 MAX 8±0.3 7 MAX **EMITTER** 1. BASE **EMITTER** 4. COLLECTOR **JEDEC EIAJ** TOSHIBA 2-7A1A

Weight: 1.9g

ELECTRICAL CHARACTERISTICS (Tc = 25°C)

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	$I_{E} = 0.2 \text{mA}, I_{C} = 0$	3.5	_	_	V
DC Current Gain		$V_{CE} = 5V$, $I_{C} = 0.5A$ *	10	_	_	_
Collector Output Capacitance		$V_{\mathrm{CB}} = 10 \mathrm{V}, \ \mathrm{I_E} = 0 \ \mathrm{f} = 1 \mathrm{MHz}$	_	10	_	pF
Output Power	Po	$V_{CC} = 12.6V$	3	_	_	W
Power Gain	$G_{ m p}$	f = 470 MHz, Pi = 0.4W	8.8	_	_	dB
Collector Efficiency	$\eta_{\mathbf{C}}$	(Fig.)	50	_	_	%

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

Beryllia Ceramics is used in this product. The dust or vapor can be dangerous to humans. Do not break, cut, crush or dissolve chemically. Dispose of this product properly according to law. Do not intermingle with normal industrial or domestic waste.

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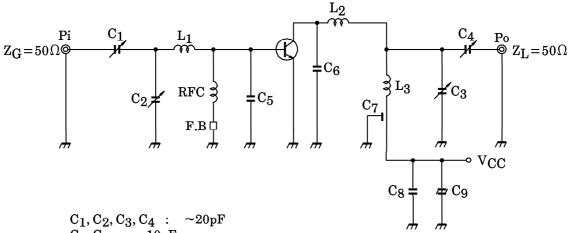
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TOSHIBA Semiconductor Reliability Handbook.

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Fig. Po TEST CIRCUIT

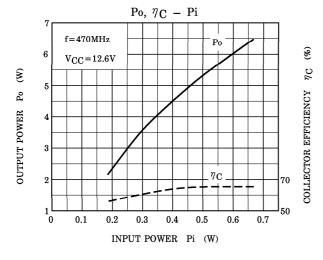


 $\begin{array}{cccc} {\rm C}_5, {\rm C}_6 & : & 10 {\rm pF} \\ {\rm C}_7 & : & 0.01 \mu {\rm F} \\ {\rm C}_8 & : & 0.02 \mu {\rm F} \\ {\rm C}_9 & : & 10 \mu {\rm F} \end{array}$

 $L_1, L_2 : 5 \times 20 \times 0.1$ mm COPPER PLATE

L₃ : ϕ 1 SILVER PLATED COPPER WIRE, 10ID, 2T RFC : ϕ 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.