

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE



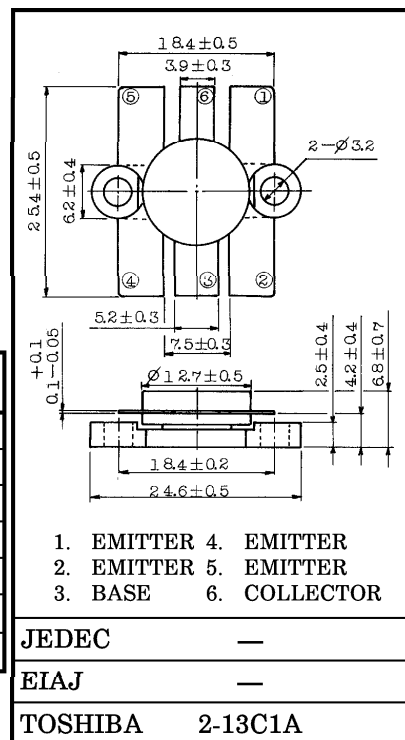
VHF BAND POWER AMPLIFIER APPLICATIONS

Unit in mm

- Output Power : $P_o = 80W$ (Min.)
($f = 175MHz$, $V_{CC} = 12.5V$, $P_i = 18W$)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	36	V
Collector-Emitter Voltage	V_{CEO}	16	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	A
Collector Power Dissipation	P_C	220	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 : 5.5g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 20mA, I_E = 0$	36	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0$	16	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$	4	—	—	V
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 10A$ *	10	—	—	
Collector Output Capacitance	C_{ob}	$V_{CB} = 12.5V, I_E = 0$ $f = 1MHz$	—	—	320	pF
Output Power	P_o	(Fig.)	80	90	—	W
Power Gain	G_p	$V_{CC} = 12.5V, f = 175MHz$	6.4	6.8	—	dB
Collector Efficiency	η_C	$P_i = 18W$	60	70	—	%
Series Equivalent Input Impedance	Z_{in}	$V_{CC} = 12.5V$ $f = 175MHz, P_o = 80W$	—	1.0 +j1.5	—	Ω
Series Equivalent Output Impedance	Z_{out}		—	1.2 +j1.8	—	Ω

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

CAUTION

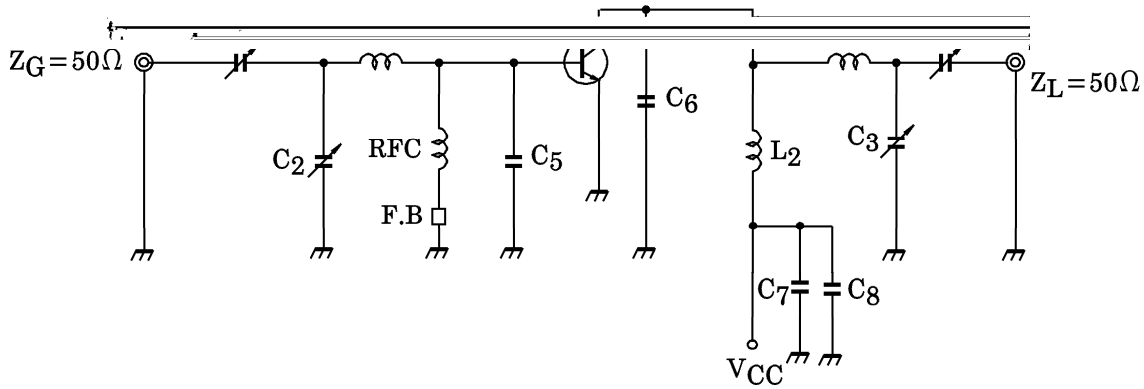
Beryllia Ceramics is used in this product. The dust or vapor can be dangerous to humans.

intermingle with normal industrial or domestic waste.

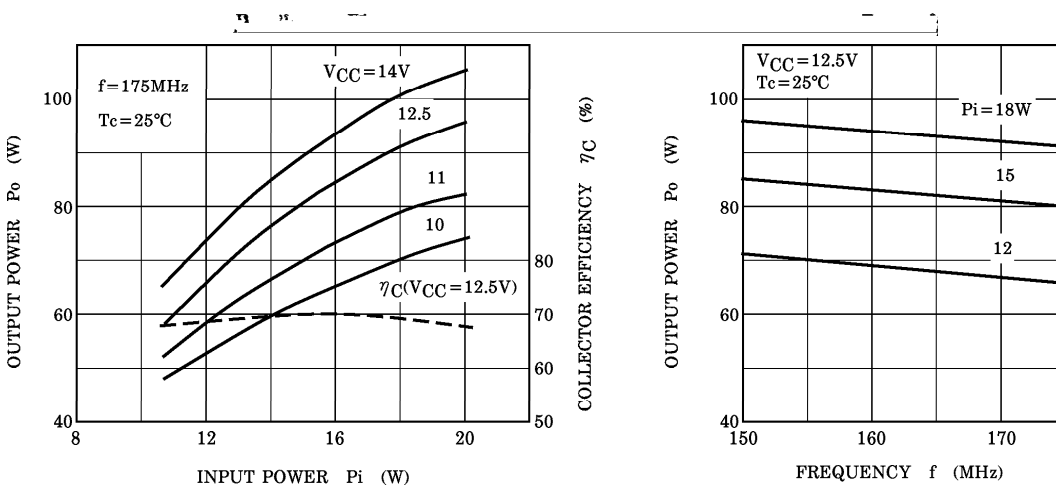
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Fig. Po TEST CIRCUIT



- C₁~C₄ : ~20pF
- C₅ : 156pF (39pF×4) CERAMIC CONDENSER
- C₆ : 132pF (33pF×4) CERAMIC CONDENSER
- C₇ : 0.01μF CERAMIC CONDENSER
- C₈ : 10μF
- L₁, L₃ : φ1.5mm SILVER PLATED COPPER WIRE, 10ID, 1T
- L₂ : φ1.5mm SILVER PLATED COPPER WIRE, 10ID, 2T
- RFC : φ1mm ENAMEL COATED COPPER WIRE, 6ID, 10T
- FB : FERRITE BEAD



CAUTION

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

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