

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2782

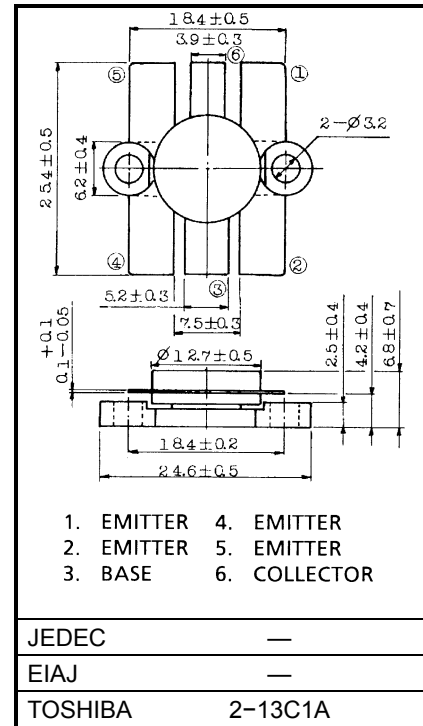
VHF BAND POWER AMPLIFIER APPLICATIONS

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	$^\circ C$



Weight: 5.5g

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ELECTRICAL CHARACTERISTICS (T_c = 25°C)

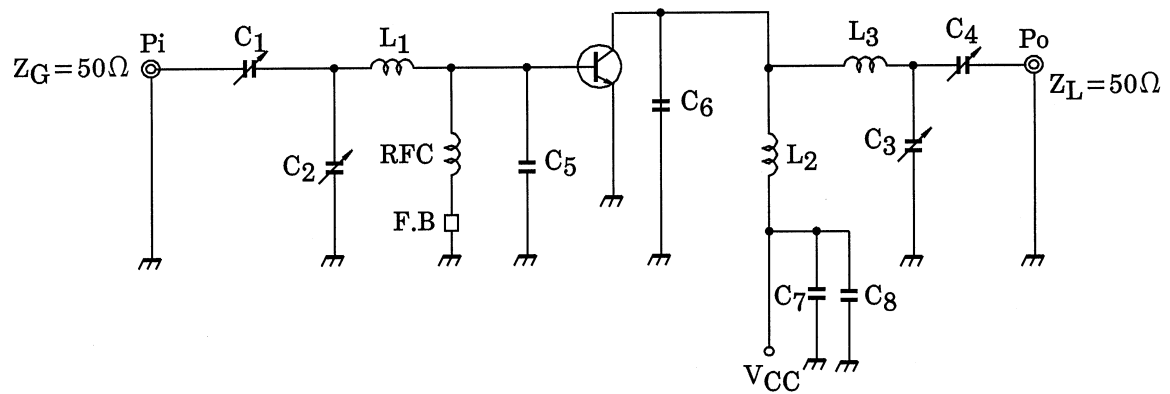
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Base Breakdown Voltage	V _(BR) CBO	I _C = 20mA, I _E = 0	36	—	—	V
Collector-Emitter Breakdown Voltage	V _(BR) CEO	I _C = 50mA, I _B = 0	16	—	—	V
Emitter-Base Breakdown Voltage	V _(BR) EBO	I _E = 1mA, I _C = 0	4	—	—	V
DC Current Gain	h _{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.) V _{CC} = 12.5V, f = 175MHz P _i = 18W	80	90	—	W
Power Gain	G _p		6.4	6.8	—	dB
Collector Efficiency	η _C		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 ≤ 100μs, Duty Cycle ≤ 3%

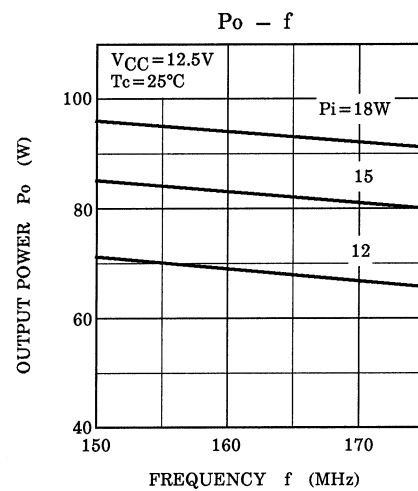
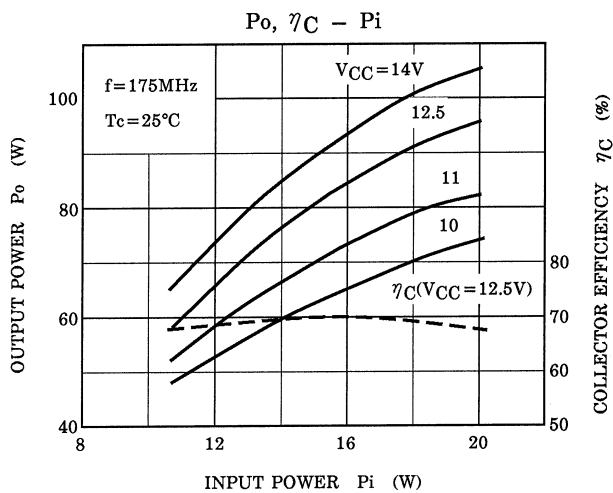
CAUTION

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.

Fig. Po TEST CIRCUIT



- $C_1 \sim C_4$: $\sim 20\text{pF}$
 C_5 : 156pF ($39\text{pF} \times 4$) CERAMIC CONDENSER
 C_6 : 132pF ($33\text{pF} \times 4$) CERAMIC CONDENSER
 C_7 : $0.01\mu\text{F}$ CERAMIC CONDENSER
 C_8 : $10\mu\text{F}$
 L_1, L_3 : $\phi 1.5\text{mm}$ SILVER PLATED COPPER WIRE, 10ID, 1T
 L_2 : $\phi 1.5\text{mm}$ SILVER PLATED COPPER WIRE, 10ID, 2T
RFC : $\phi 1\text{mm}$ ENAMEL COATED COPPER WIRE, 6ID, 10T
FB : FERRITE BEAD



CAUTION

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