

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

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2SC2782A

VHF BAND POWER AMPLIFIER APPLICATIONS

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

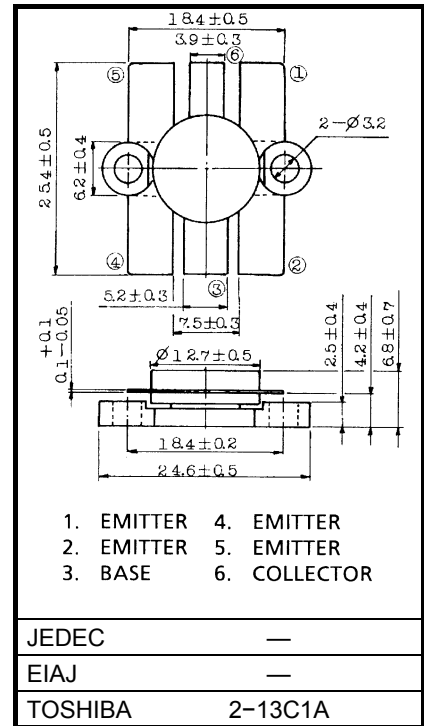
ABSOLUTE MAXIMUM RATINGS ($T_c = 25^\circ C$)

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	$^\circ C$

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

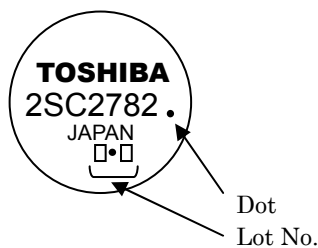
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit in mm



Weight: 5.5g

MARKING



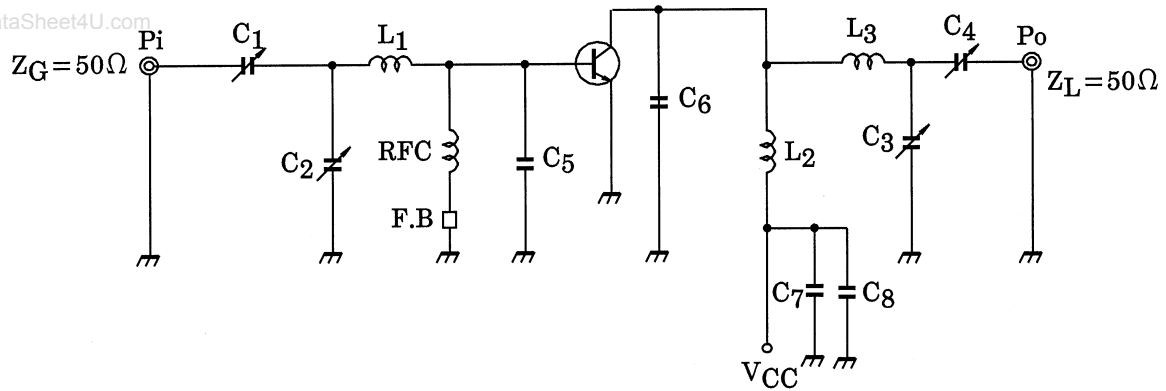
ELECTRICAL CHARACTERISTICS (T_c = 25°C)

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.)	80	90	—	W
Power Gain	G _p	V _{CC} = 12.5V, f = 175MHz P _i = 18W	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

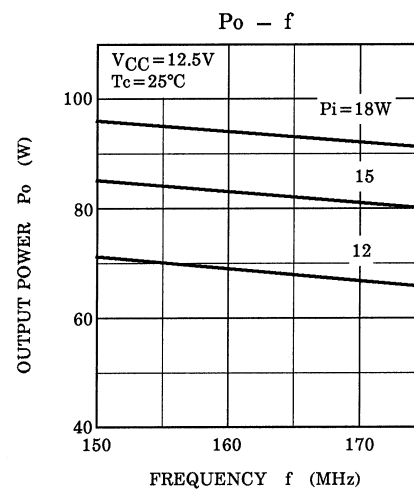
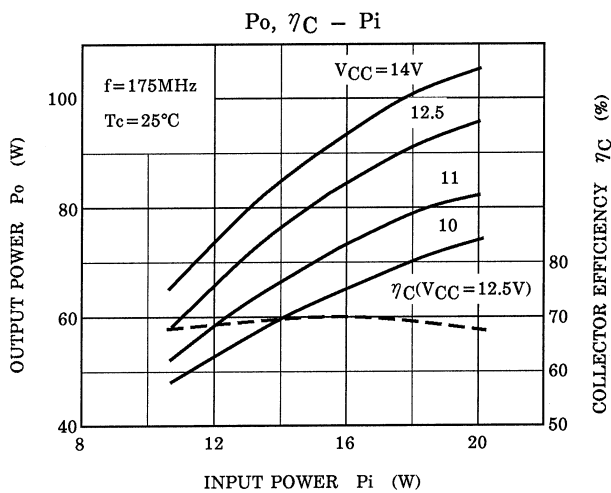
* Pulse Test: Pulse Width ≤ 100μs, Duty Cycle ≤ 3%

Fig. Po TEST CIRCUIT

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- 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.

RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

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