

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2638

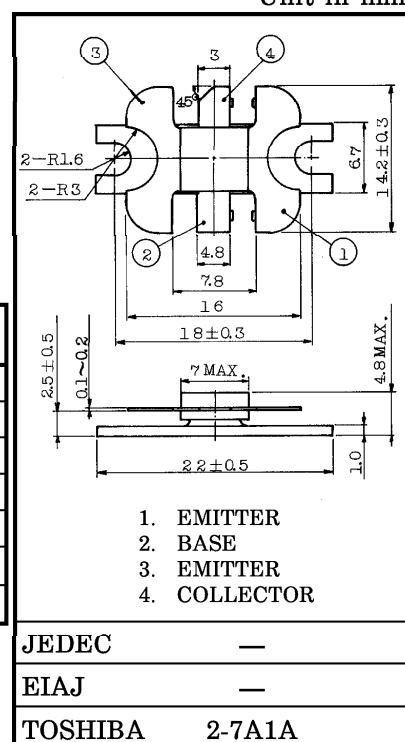
VHF BAND POWER AMPLIFIER APPLICATIONS

Unit in mm

- Output Power : $P_o = 6\text{W}$ (Min.)
($f = 175\text{MHz}$, $V_{CC} = 12.5\text{V}$, $P_i = 0.5\text{W}$)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	35	V
Collector-Emitter Voltage	V_{CEO}	17	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current	I_C	2	A
Collector Power Dissipation	P_C	15	W
Junction Temperature	T_j	175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-65 \sim 175$	$^\circ\text{C}$

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

Weight : 1.6g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 15\text{V}$, $I_E = 0$	—	—	0.1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1\text{mA}$, $I_E = 0$	35	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}$, $I_B = 0$	17	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}$, $I_C = 0$	3.5	—	—	V
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 1\text{A}$ *	10	—	—	
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$	—	—	25	pF
Output Power	P_o	(Fig.)	6	7	—	W
Power Gain	G_p	$V_{CC} = 12.5\text{V}$, $f = 175\text{MHz}$	10.8	11.5	—	dB
Collector Efficiency	η_C	$P_i = 0.5\text{W}$	60	72	—	%
Series Equivalent Input Impedance	Z_{in}	$V_{CC} = 12.5\text{V}$, $f = 175\text{MHz}$	—	3.5 +j4.0	—	Ω
Series Equivalent Output Impedance	Z_{out}	$P_o = 6\text{W}$	—	10 -j1.5	—	Ω

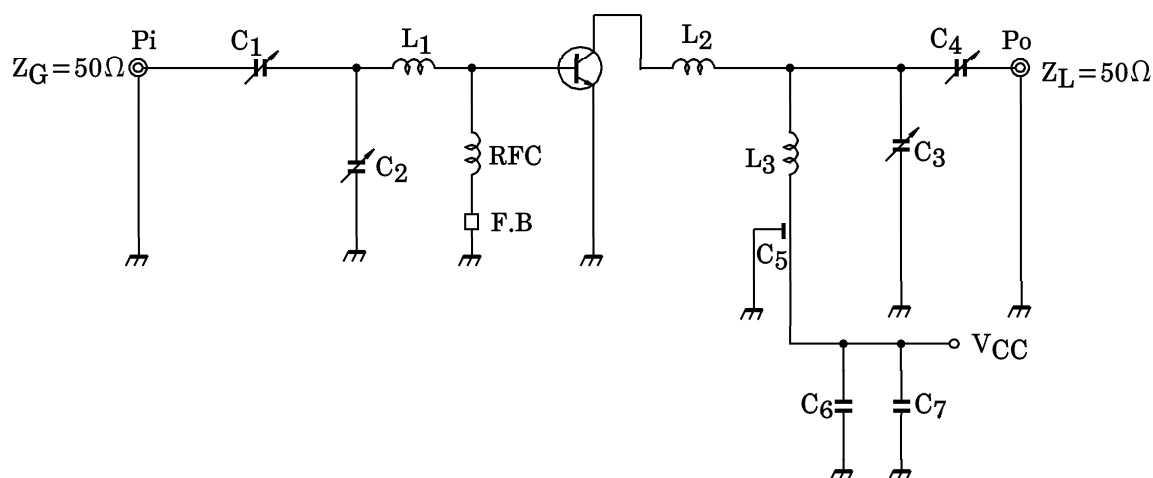
* Pulse Test : Pulse Width $\leq 100\mu\text{s}$, Duty Cycle $\leq 3\%$

CAUTION

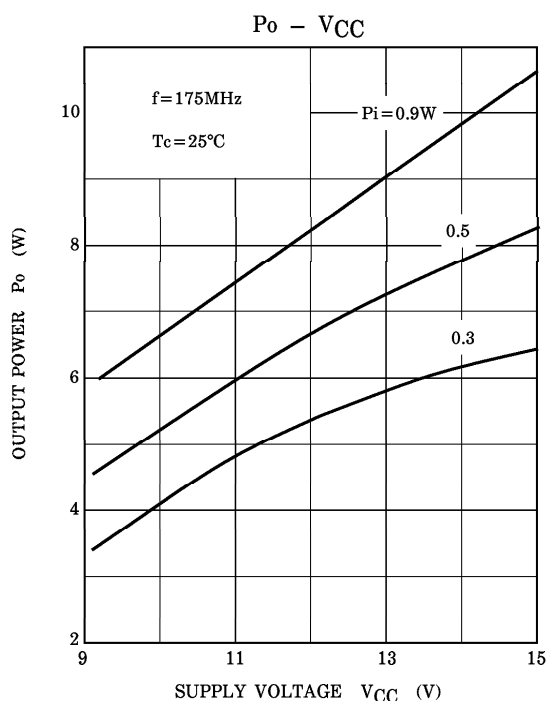
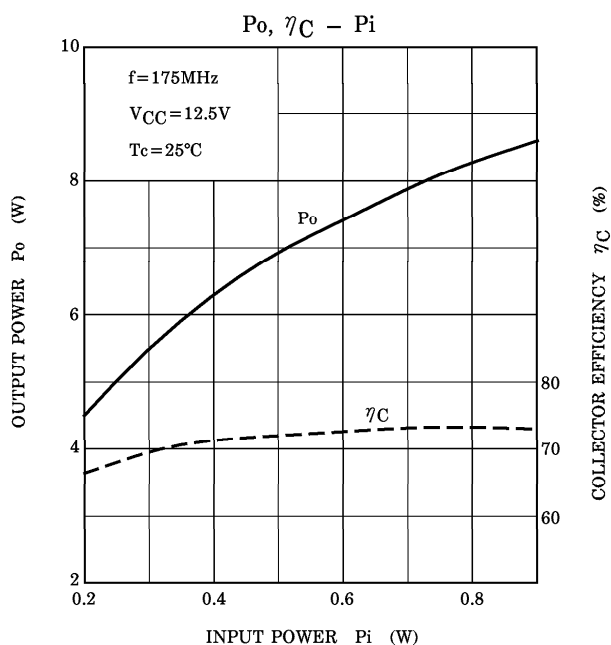
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Fig. P_o TEST CIRCUIT

- C₁, C₂, C₃, C₄ : 3.5~30pF
 C₅ : 0.01μF FEED THROUGH
 C₆ : 0.033μF CERAMIC CONDENSER
 C₇ : 10μF
 L₁, L₂ : φ1 SILVER PLATED COPPER WIRE, 12ID, 1T
 L₃ : φ1 SILVER PLATED COPPER WIRE, 12ID, 2T
 RFC : φ0.5 ENAMEL COATED COATED COPPER WIRE, 6ID, 10T
 FB : FERRITE BEADS



CAUTION

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

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