

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2652

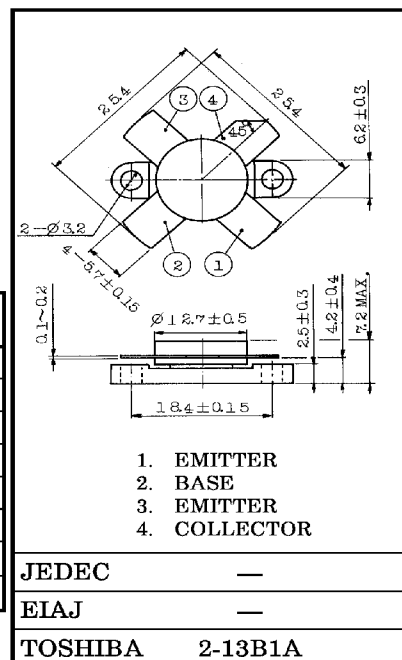
2~30MHz SSB LINEAR POWER AMPLIFIER APPLICATIONS
(50V SUPPLY VOLTAGE USE)

Unit in mm

- Specified 50V, 28MHz Characteristics
- Output Power : $P_o = 200W_{PEP}$
- Power Gain : $G_p = 13dB$ (Min.)
- Collector Efficiency : $\eta_C = 35\%$ (Min.)
- Intermodulation Distortion : $IMD = -30dB$ (Max.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	85	V
Collector-Emitter Voltage	V_{CES}	85	V
Collector-Emitter Voltage	V_{CEO}	55	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	A
Collector Power Dissipation	P_C	300	W
Junction Temperature	T_j	175	$^\circ C$
Storage Temperature Range	T_{stg}	$-65 \sim 175$	$^\circ C$

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

Weight : 5.2g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100mA, I_B = 0$	55	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 100mA, V_{BE} = 0$	85	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$	4	—	—	V
DC Current Gain	h_{FE}	$V_{CB} = 5V, I_C = 10A *$	10	—	150	
Collector Output Capacitance	C_{ob}	$V_{CB} = 50V, I_E = 0$ $f = 1MHz$	—	300	—	pF
Power Gain	G_p	$V_{CC} = 50V,$ $f_1 = 28.000MHz$ $f_2 = 28.001MHz$	13.0	15.2	—	dB
Input Power	P_i	$I_{idle} = 100mA$	—	6	10	W_{PEP}
Collector Efficiency	η_C		35	—	—	%
Intermodulation Distortion	IMD	$P_o = 200W_{PEP}$ (Fig.)	—	—	-30	dB
Series Equivalent Input Impedance	Z_{in}	$V_{CC} = 50V, f = 28MHz$	—	1.15 -j1.15	—	Ω
Series Equivalent Output Impedance	Z_{out}	$\Delta f = 1kHz, P_o = 200W_{PEP}$	—	5.4 -j2.0	—	Ω

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

CAUTION

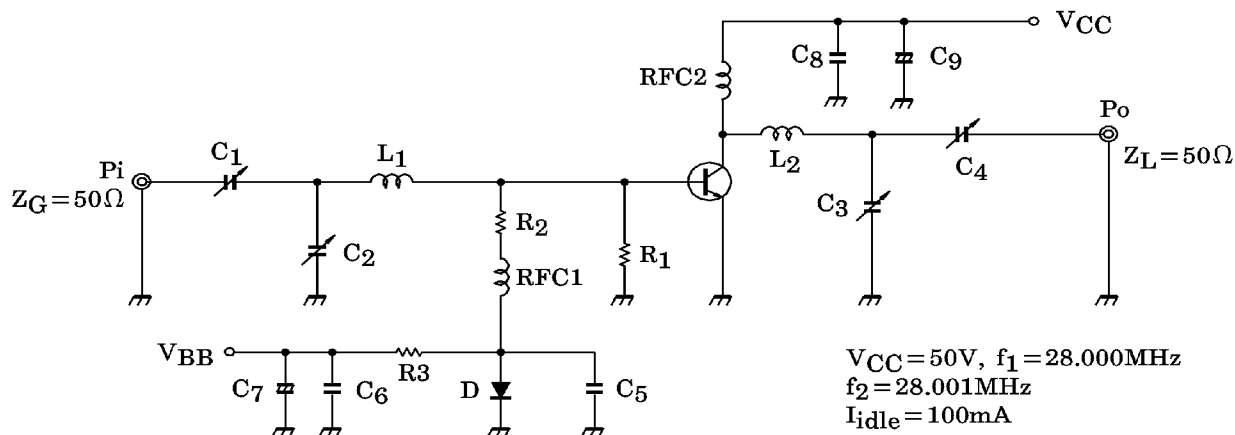
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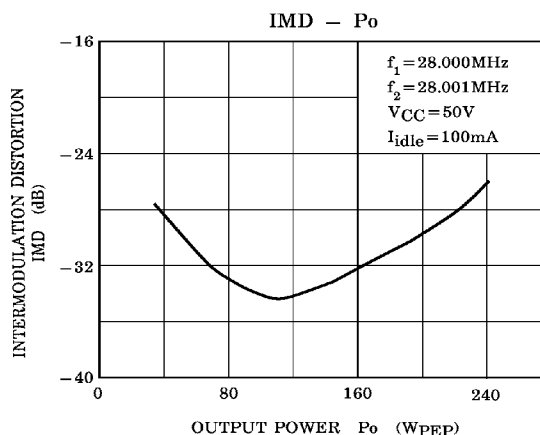
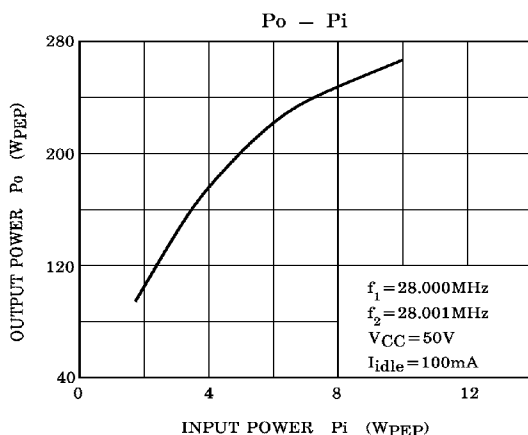
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Fig. Pi TEST CIRCUIT



C ₁ , C ₂	: 7~150pF	L ₁	: ϕ 0.8 ENAMEL COATED COPPER WIRE, 14ID, 4T, 4P
C ₃ , C ₄	: 7~150pF 2KWV	L ₂	: ϕ 1.2 ENAMEL COATED COPPER WIRE, 14ID, 3 1/2T, 3P
C ₅ , C ₆	: 0.022 μ F	RFC ₁	: ϕ 0.8 ENAMEL COATED COPPER WIRE, 10ID, 9T (Ferrite Core TDK K2)
C ₇	: 47 μ F 10WV	RFC ₂	: ϕ 0.8 ENAMEL COATED COPPER WIRE, 14ID, 20T
C ₈	: 0.044 μ F	R ₁	: 10 Ω (1W)
C ₉	: 100 μ F 50WV	R ₂	: 2 Ω (1/2W)
		R ₃	: 10 Ω (5W)
		D	: 1S1555



CAUTION

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

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