

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2290A

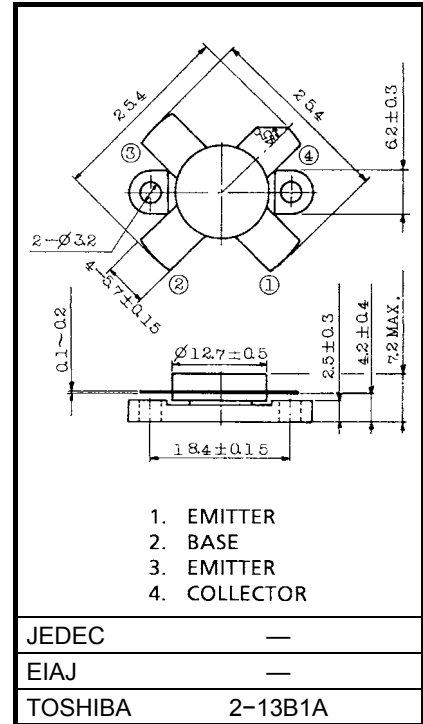
2~30MHz SSB LINEAR POWER AMPLIFIER APPLICATIONS
(LOW SUPPLY VOLTAGE USE)

Unit in mm

- Specified 12.5V, 28MHz Characteristics
- Output Power : $P_o = 60W_{PEP}$ (Min.)
- Power Gain : $G_p = 11.8dB$ (Min.)
- Collector Efficiency : $\eta_C = 35%$ (Min.)
- Intermodulation Distortion: $IMD = -30dB$ (Max.)

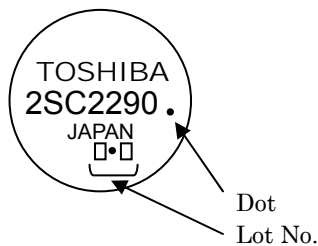
MAXIMUM RATINGS ($T_c = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CES}	45	V
Collector-Emitter Voltage	V_{CEO}	18	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	A
Collector Power Dissipation	P_C	175	W
Junction Temperature	T_j	175	$^\circ C$
Storage Temperature Range	T_{stg}	-65~175	$^\circ C$



Weight: 5.2g

MARKING



ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100mA, I_B = 0$	18	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 100mA, V_{EB} = 0$	45	—	—	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	—	150	—
Collector Output Capacitance	C_{ob}	$V_{CB} = 12.5V, I_E = 0$ $f = 1MHz$	—	—	500	pF
Power Gain	G_p	$V_{CC} = 12.5V, f_1 = 28.000MHz,$ $f_2 = 28.001MHz$ $I_{idle} = 50mA$ $P_o = 60W_{PEP}$ (Fig.)	11.8	13.8	—	dB
Input Power	P_i		—	2.5	4	W_{PEP}
Collector Efficiency	η_C		35	—	—	%
Intermodulation Distortion	IMD		—	—	-30	dB
Series Equivalent Input Impedance	Z_{in}		—	1.02 -j0.17	—	Ω
Series Equivalent Output Impedance	Z_{out}	—	0.86 -j0.21	—	Ω	

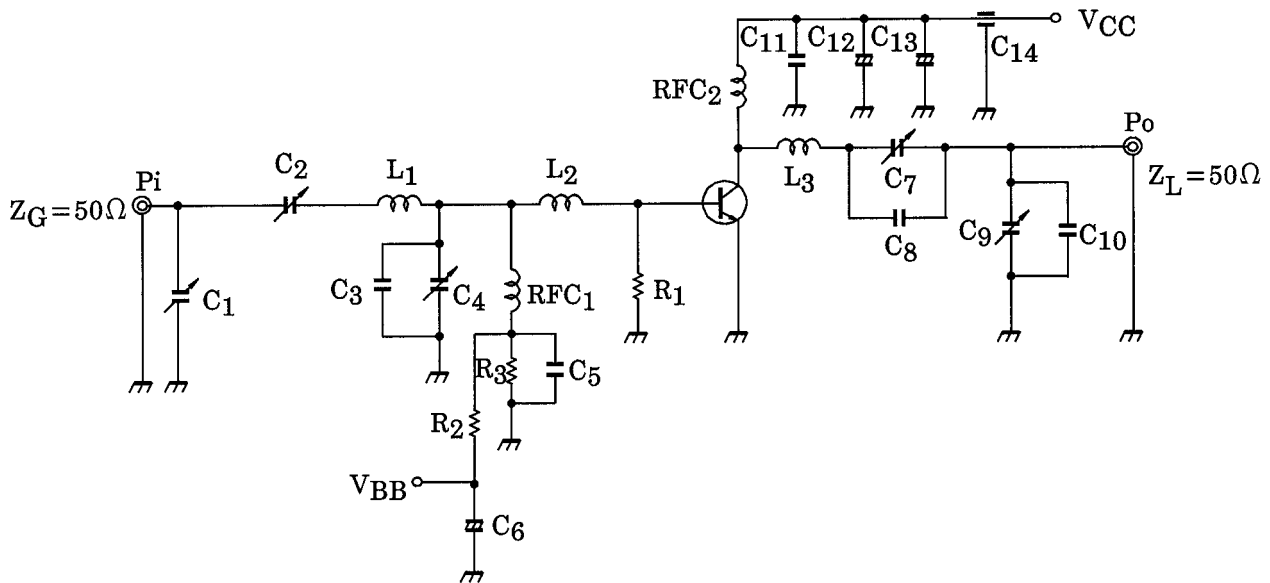
* Pulse Test: Pulse Width $\leq 100\mu s$, Duty Cycle $\leq 3\%$

RESTRICTIONS ON PRODUCT USE

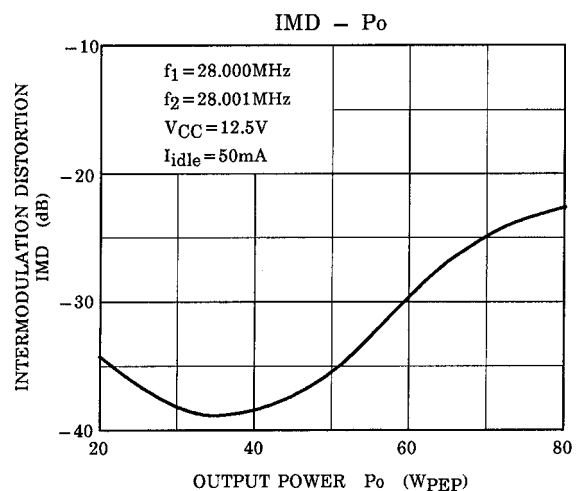
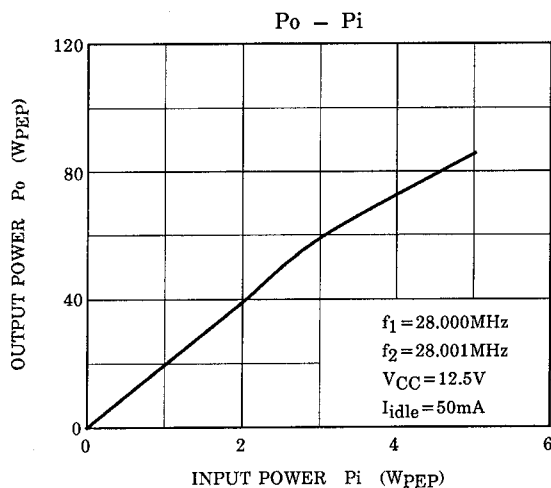
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Fig. Pi TEST CIRCUIT



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| C ₁ , C ₂ , C ₄ , C ₇ : 7~150pF | L ₁ : φ0.8 ENAMEL COATED COPPER WIRE, 9ID, 6T |
| C ₃ : 250pF | L ₂ : φ1 SILVER PLATED COPPER WIRE, 9ID, 2T |
| C ₅ : 0.4μF | L ₃ : φ1.5 ENAMEL COATED COPPER WIRE, 9ID, 5T |
| C ₆ : 100μF 10WV | RFC ₁ : φ0.8 ENAMEL COATED COPPER WIRE, 9ID, 20T |
| C ₈ : 150pF | RFC ₂ : φ1.5 ENAMEL COATED COPPER WIRE, 12ID, 15T |
| C ₉ : 10~200pF | R ₁ : 5.6Ω (1/2W) |
| C ₁₀ : 600pF | R ₂ : 5Ω (5W) |
| C ₁₁ : 0.4μF | R ₃ : 1.5Ω (10W) |
| C ₁₂ , C ₁₃ : 22μF 35WV | |
| C ₁₄ : 1000pF | |
- (FEED THROUGH)



CAUTION

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