

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

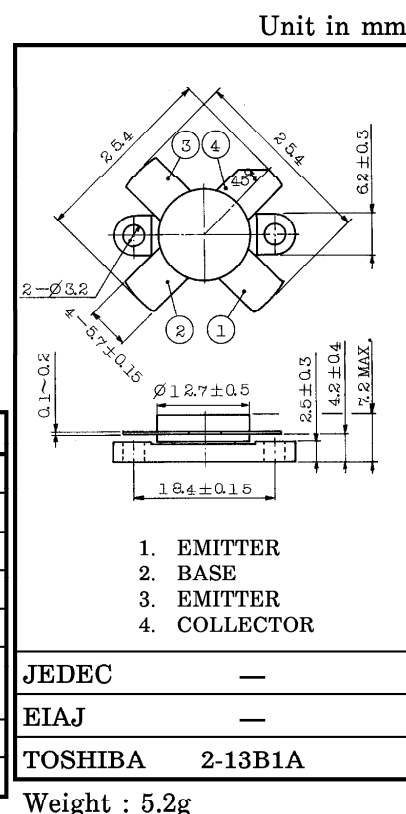
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2~30MHz SSB LINEAR POWER AMPLIFIER APPLICATIONS.
(LOW SUPPLY VOLTAGE USE)

- Specified 12.5V, 28MHz Characteristics
- Output Power : $P_o = 100W_{PEP}$
- Power Gain : $G_p = 13dB$
- Collector Efficiency : $\eta_C = 35\%$ (Min.)
- Intermodulation Distortion : $IMD = -24dB$ (Max.) (MIL Standard)

MAXIMUM RATINGS (T_c = 25°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	25	A
Collector Power Dissipation (T _c = 25°C)	P _C	250	W
Junction Temperature	T _j	175	°C
Storage Temperature Range	T _{stg}	−65~175	°C

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

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}	$V_{CB}=12.5V, I_E=0$ $f=1MHz$	—	700	—	pF
Power Gain	G_p	$V_{CC}=12.5V, f=28MHz$	13.0	15.2	—	dB
Input Power	P_i	2-Tone, $\Delta f=1kHz$	—	6	10	W_{PEP}
Collector Efficiency	η_C	$I_{idle}=100mA$	35	—	—	%
Intermodulation Distortion	IMD	$P_o=100W_{PEP}.$ (Fig.)	—	—	-24	dB
Series Equivalent Input Impedance	Z_{in}	$V_{CC}=12.5V, f=28MHz$	—	1.45 -j0.95	—	Ω
Series Equivalent Output Impedance	Z_{out}	$\Delta f=1kHz, P_o=100W_{PEP}$	—	1.45 -j1.0	—	Ω

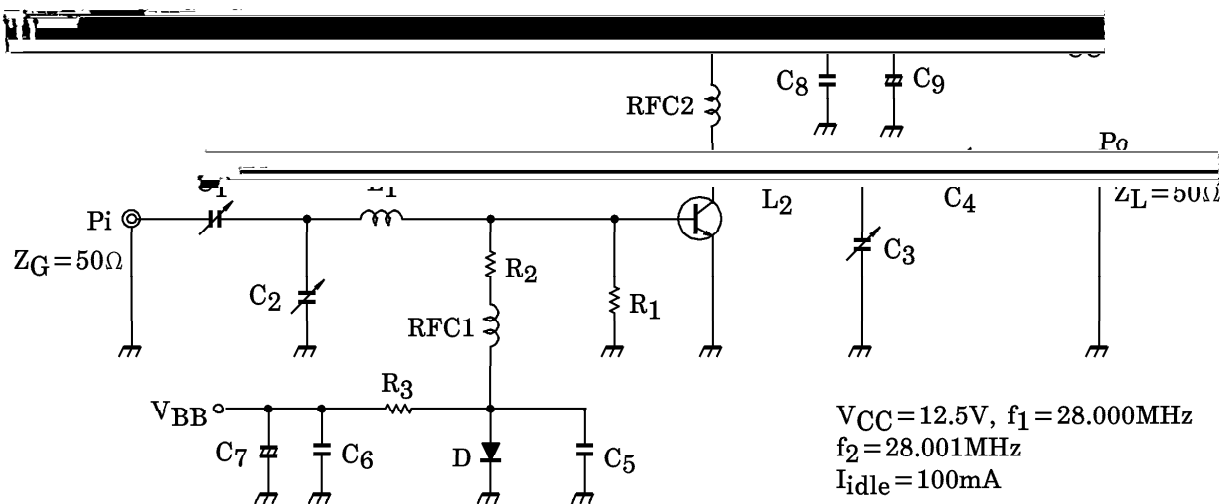
CAUTION

Beryllia Ceramics is used in this product. The dust or vapor can be dangerous to humans. Do not

intermingle with normal industrial or domestic waste.

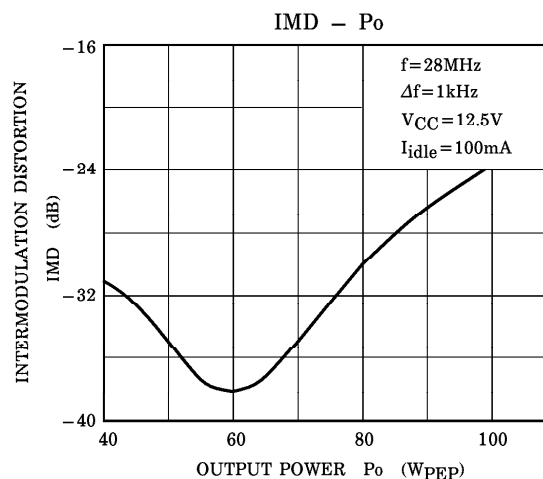
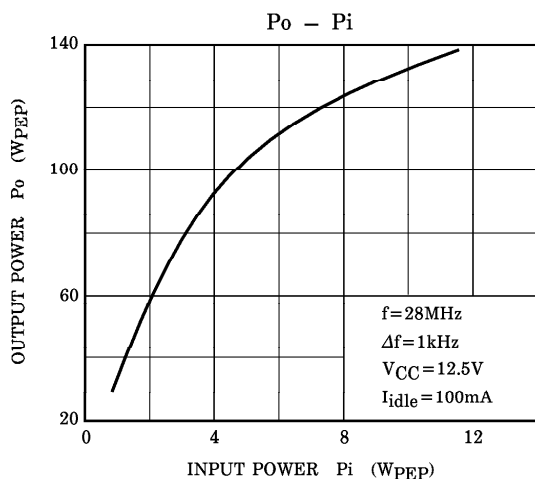
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C_1, C_2 : 7~150pF
 C_3, C_4 : 7~150pF 2KWV
 C_5, C_6 : 0.022 μ F
 C_7 : 47 μ F 10WV
 C_8 : 0.044 μ F
 C_9 : 100 μ F 50WV

L_1 : $\phi 0.8$ ENAMEL COATED COPPER WIRE, 14ID, 4T, 4P
 L_2 : $\phi 1.2$ ENAMEL COATED COPPER WIRE, 14ID, 3 1/2T, 3P
 $RFC1$: $\phi 0.8mm$ ENAMEL COATED COPPER WIRE, 10ID, 9T
 (Ferrite Core TDK K2)
 $RFC2$: $\phi 1.8mm$ ENAMEL COATED COPPER WIRE, 14ID, 20T
 R_1 : 10 Ω (1W)
 R_2 : 2 Ω (1/2W)
 R_3 : 10 Ω (5W)
 D : 1S1555



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