

SILICON NPN EPITAXIAL PLANAR TYPE

2SC2509

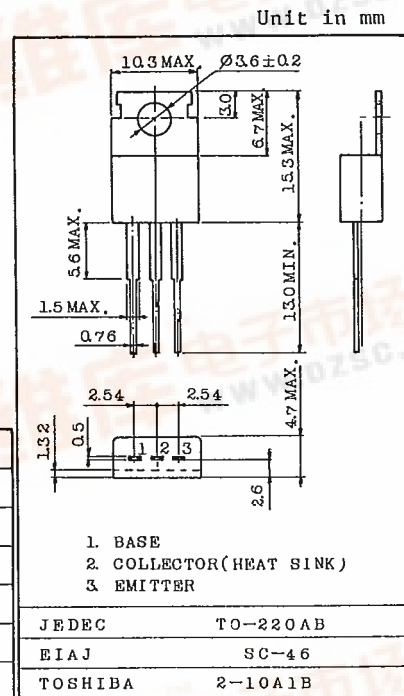
2~30MHz SSB LINEAR POWER AMPLIFIER APPLICATIONS.
(LOW SUPPLY VOLTAGE USE)

FEATURES:

- . Specified 12.5V, 28MHz Characteristics
- : Output Power : $P_o=10W_{PEP}$
- : Minimum Gain : $G_{pe}=14dB$
- : Efficiency : $\eta_c=35\%$ (Min.)
- : Intermodulation Distortion : $IMD=-30dB$ (Max.)

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CES}	40	V
Collector-Emitter Voltage	V _{CEO}	18	V
Emitter-Base Voltage	V _{EBO}	4	V
Collector Current	I _C	5	A
Collector Power Dissipation (Tc=25°C)	P _C	20	W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55 ~ 150	°C



Weight : 1.9g
Mounting Kit No. AC75

ELECTRICAL CHARACTERISTICS (Tc=25°C)

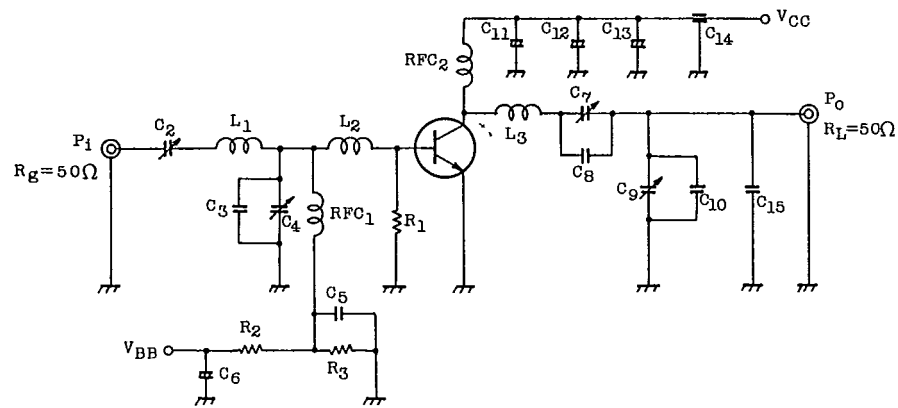
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage	V(BR)CEO	I _C =10mA, I _B =0	18	-	-	V
Collector-Emitter Breakdown Voltage	V(BR)CES	I _C =50mA, V _{BE} =0	40	-	-	V
Emitter-Base Breakdown Voltage	V(BR)EBO	I _E =1mA, I _C =0	4	-	-	V
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =1A	20	-	-	
Transition Frequency	f _T	V _{CE} =5V, I _C =1A	-	200	-	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =12.5V, I _E =0, f=1MHz	-	-	150	pF
Power Gain	G _{pe}	V _{CC} =12.5V, f=28MHz	14.0	-	-	dB
Input Power	P _i	2-Tone, Δf=1kHz	-	-	0.4	W _{PEP}
Collector Efficiency	η _c	Idle=30mA, P _o =10W _{PEP}	35	-	-	%
Intermodulation Distortion	IMD	(Fig.)	-	-	-30	dB

TOSHIBA CORPORATION



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Fig. P_i TEST CIRCUIT



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|--------------------------------------------------------------|---------------------------------------------------------------------|
| C ₂ , C ₄ , C ₇ : 7 ~ 150pF | L ₁ : ϕ 0.8 ENAMEL COATED COPPER WIRE, 9ID, 6T |
| C ₉ : 10 ~ 200pF | L ₂ : ϕ 1 SILVER PLATED COPPER WIRE, 9ID, 2T |
| C ₃ : 400pF | L ₃ : ϕ 1.5 ENAMEL COATED COPPER WIRE, 9ID, 5T |
| C ₅ , C ₁₃ : 0.4 μ F | RFC ₁ : ϕ 0.8 ENAMEL COATED COPPER WIRE, 9ID, 20T |
| C ₆ : 10.0 μ F 10WV | RFC ₂ : ϕ 1.5 ENAMEL COATED COPPER WIRE, 121ID, 15T |
| C ₈ : 400pF | R ₁ : 5.6 Ω (1/2W) |
| C ₁₀ : 200pF | R ₂ : 5 Ω (5W) |
| C ₁₁ , C ₁₂ : 22 μ F 35WV | R ₃ : 1.5 Ω (10W) |
| C ₁₄ : 1000pF | C ₁₅ : 100pF |
- FEED THROUGH

