SILICON NPN EPITAXIAL PLANAR TYPE

2SC2509

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

FEATURES:

. Specified 12.5V, 28MHz Characteristics

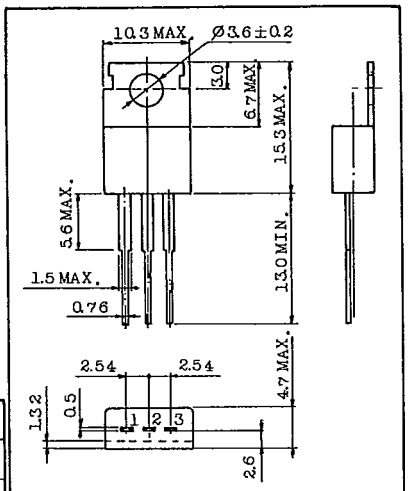
: Output Power : P_O=10WPEP

: Minimum Gain : G_{pe}=14dB

: Efficiency : η_c=35%(Min.)

: Intermodulation Distortion : IMD=-30dB(Max.)

Unit in mm



JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	2-10A1B

Weight : 1.9g

Mounting Kit No. AC75

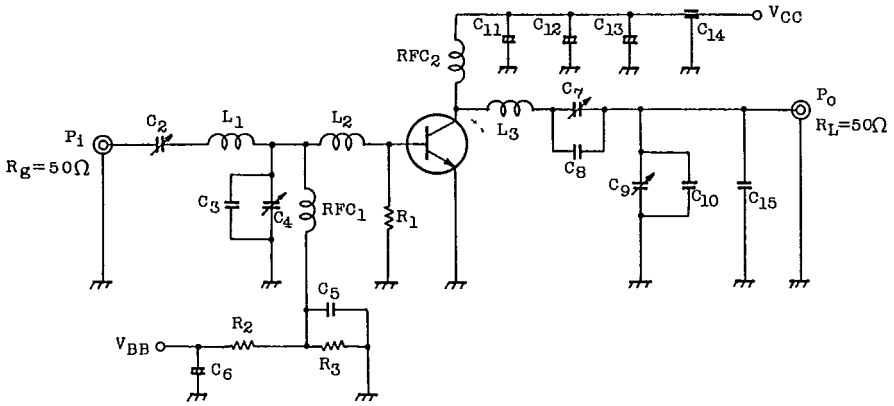
MAXIMUM RATINGS (Ta=25°C)

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

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	WPEP
Collector Efficiency	η_c	I_{idle}=30mA, P_O=10WPEP	35	-	-	%
Intermodulation Distortion	IMD	(Fig.)	-	-	-30	dB

Fig. P_i TEST CIRCUIT



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	: φ1 SILVER PLATED COPPER WIRE, 9ID, 2T
C_3	: 400pF	L_3	: φ1.5 ENAMEL COATED COPPER WIRE, 9ID, 5T
C_5,C_{13}	: 0.4μF	RFC_1	: φ0.8 ENAMEL COATED COPPER WIRE, 9ID, 20T
C_6	: 10.0μF 10WV	RFC_2	: φ1.5 ENAMEL COATED COPPER WIRE, 12IID, 15T
C_8	: 400pF	R_1	: 5.6Ω (1/2W)
C_{10}	: 200pF	R_2	: 5Ω (5W)
C_{11},C_{12}	: 22μF 35WV	R_3	: 1.5Ω (10W)
C_{14}	: 1000pF FEED THROUGH	C_{15}	: 100pF