SILICON NPN EPITAXIAL PLANAR TYPE

2SC1764

2～30MHz SSB LINEAR POWER AMPLIFIER APPLICATIONS.
(28V SUPPLY VOLTAGE USE)

FEATURES:

Specified 28V, 28MHz Characteristics

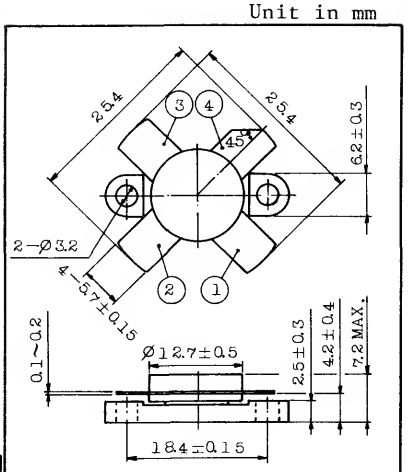
: Output Power : P_o=80W$_{PEP}$

: Minimum Gain : G_{pe}=14.5dB

: Efficiency : η_c=40%(Min.)

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

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-13B1A

Weight : 5.2g

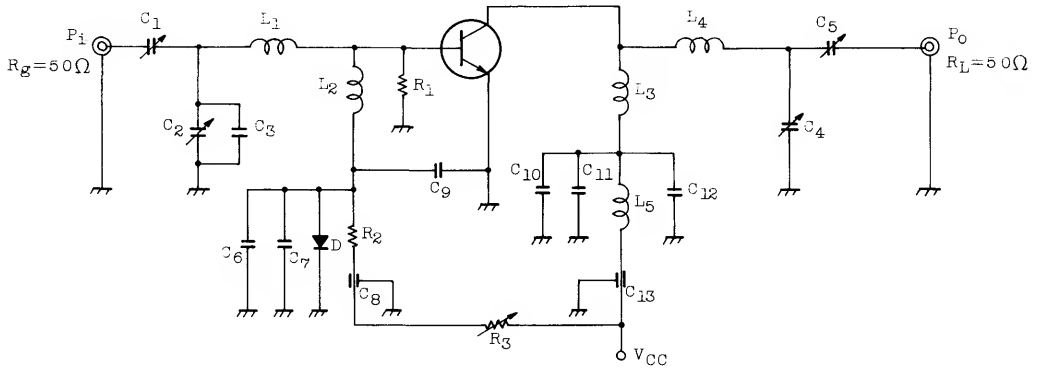
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	65	V
Collector-Emitter Voltage	V_{CEO}	35	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	12	A
Collector Power Dissipation (Tc=25°C)	P_C	140	W
Junction Temperature	T_j	175	°C
Storage Temperature Range	T_{stg}	-65～175	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=100mA, I_B=0	35	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	I_C=20mA, R_{EB}=10Ω	65	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0	4	-	-	V
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=10A	10	-	-	
Transition Frequency	f_T	V_{CE}=15V, I_C=0.2A	50	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=28V, I_E=0, f=1MHz	-	220	300	pF
Power Gain	G_{pe}	V_{CC}=28V, f=28MHz	14.5	-	-	dB
Input Power	P_i	2-Tone, Δf=1kHz	-	-	2.8	W$_{PEP}$
Collector Efficiency	η_c	I_{idle}=40mA, P_o=80W$_{PEP}$	40	-	-	%
Intermodulation Distortion	IMD	(Fig.)	-	-	-30	dB

Fig. P_i TEST CIRCUIT



C_1, C_4, C_5 : ~100pF
C_2 : ~ 50pF
C_3 : 100pF
C_6, C_{10} : 0.1μF
C_7, C_{12} : 22μF
C_8, C_{13} : 6000pF FEED THROUGH
C_9 : 0.1μF
C_{11} : 0.01μF
R_1 : 10Ω, 1W
R_2 : 500Ω, 2W
R_3 : ~200Ω

L_1 : φ1.0 SILVER PLATED COPPER WIRE, 12ID, 4T, 20 LENGTH
L_2 : 10μH
L_3 : φ1.6 SILVER PLATED COPPER WIRE, 12ID, 2T, 8 LENGTH
L_4 : φ1.6 SILVER PLATED COPPER WIRE, 20ID, 3.5T, 22 LENGTH
L_5 : 10μH
D : 1S1555