SILICON NPN EPITAXIAL PLANAR TYPE

2SC2104

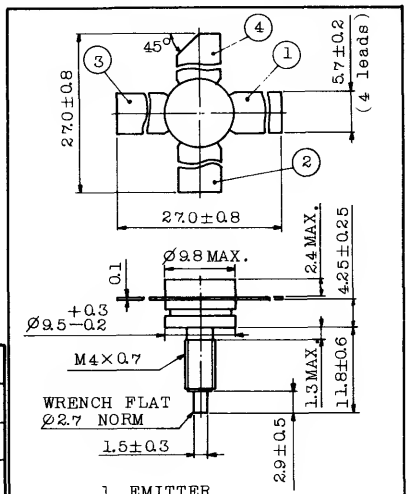
UHF BAND POWER AMPLIFIER APPLICATIONS.

FEATURES:

. Output Power : P_o=3W(Min.)
(f=470MHz, V_{CC}=12.6V, P_i=0.4W)

. 100% Tested for Load Mismatch Stress at All Phase Angles with 30:1 VSWR @ V_{CC}=15V, P_i=0.4W, f=470MHz

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-10G1A

Weight : 3.3g
Mounting Kit No. AC57

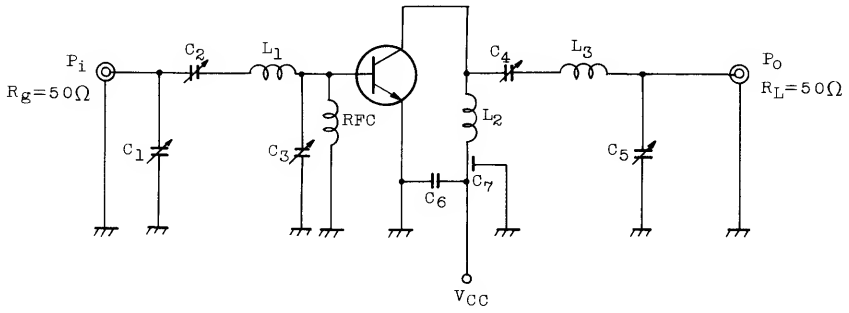
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	35	V
Collector-Emitter Voltage	V_{CEO}	17	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current	I_C	0.8	A
Collector Power Dissipation (Tc=25°C)	P_C	7.5	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 Cut-off Current	I_{CBO}	V_{CB}=15V, I_E=0	-	-	1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0	35	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=5mA, I_B=0	17	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=0.1mA, I_C=0	3.5	-	-	V
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=0.5A	10	-	-	
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	-	20	pF
Output Power	P_o	(Fig.) V_{CC}=12.6V, f=470MHz, P_i=0.4W	3	-	-	W
Power Gain	G_{pe}		8.7	-	-	dB
Collector Efficiency	η_c		50	-	-	%
Series Equivalent Input Impedance	Z_{IN}	V_{CC}=12.6V, f=470MHz, P_o=3W	-	1.5+j3	-	Ω
Series Equivalent Output Impedance	Z_{OUT}		-	17.5-j8.5	-	Ω

Fig. f=470MHz P_O TEST CIRCUIT



C_1, C_2, C_3 : ~10pF
C_4, C_5 : ~30pF
C_6 : 0.02μF
C_7 : 1000pF FEED THROUGH
L_1 : φ1.6 SILVER PLATED COPPER WIRE, 7ID, ½T
L_2 : φ1.2 SILVER PLATED COPPER WIRE, 10ID, 1½T
L_3 : φ1.6 SILVER PLATED COPPER WIRE, 10ID, ½T
RFC : φ0.7 ENAMEL COATED COPPER WIRE, 3ID, 5T