SILICON NPN EPITAXIAL PLANAR TYPE

2SC2102

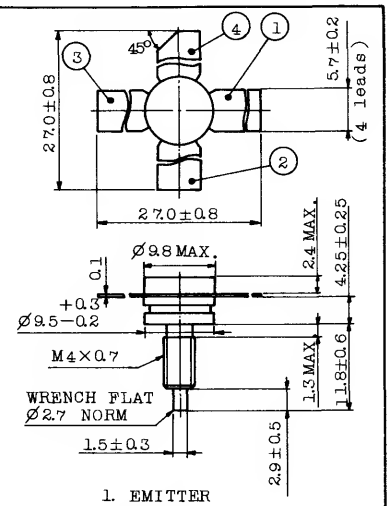
VHF BAND POWER AMPLIFIER APPLICATIONS.

FEATURES :

. Output Power : P_O=15W (Min.)
(f=175MHz, V_{CC}=12.5V, P_i=1.3W)

. 100% Tested for Load Mismatch Stress at All Phase Angles with 30;1 VSWR @ V_{CC}=15V, P_i=1.3W, f=175MHz

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-10G1A

Mounting Kit No. AC57
Weight : 3.3g

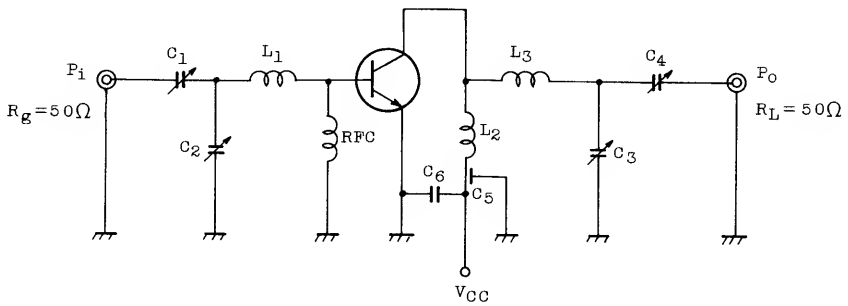
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	35	V
Collector-Emitter Voltage	V_{CEO}	18	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current	I_C	3.5	A
Collector Power Dissipation (Tc=25°C)	P_C	35	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	-	-	1.0	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10mA, I_E=0	35	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=25mA, I_B=0	18	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0	3.5	-	-	V
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=1A	10	-	-	
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	-	80	pF
Output Power	P_o	(Fig.)	15	18	-	W
Power Gain	G_{pe}	V_{CC}=12.5V, f=175MHz	10.6	11.4	-	dB
Collector Efficiency	η_c	P_i=1.3W	60	72	-	%
Series Equivalent Input Impedance	Z_{in}	V_{CC}=12.5V, f=175MHz, P_o=15W	-	0.8 +j0.1	-	Ω
Series Equivalent Output Impedance	Z_{OUT}		-	3.6 -j1.9	-	Ω

Fig. P_O TEST CIRCUIT



C_1 : 5 ~ 20pF

C_2,C_3,C_4 : 3.5 ~ 30pF

C_5 : 1000pF FEED THROUGH

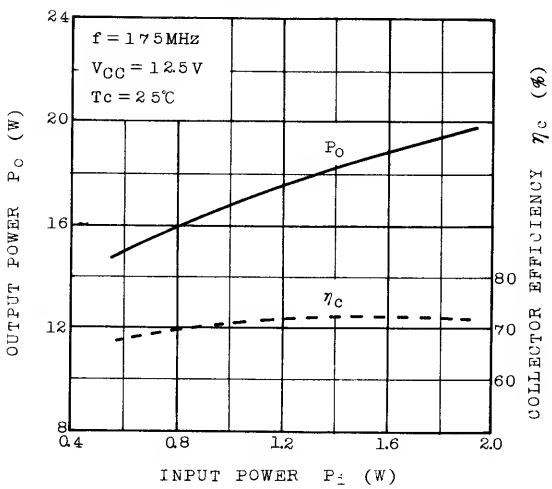
C_6 : 0.01μF CERAMIC CONDENSER

L_1,L_3 : φ1 SILVER PLATED COPPER WIRE, 6ID, 1T

L_2 : φ1 SILVER PLATED COPPER WIRE, 6ID, 2T

RFC : φ1 ENAMEL COATED COPPER WIRE, 6ID, 3T

P_O, η_C — P_i



P_O — V_{CC}