

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07498 DT-33-13

SILICON NPN EPITAXIAL PLANAR TYPE

2SC2181

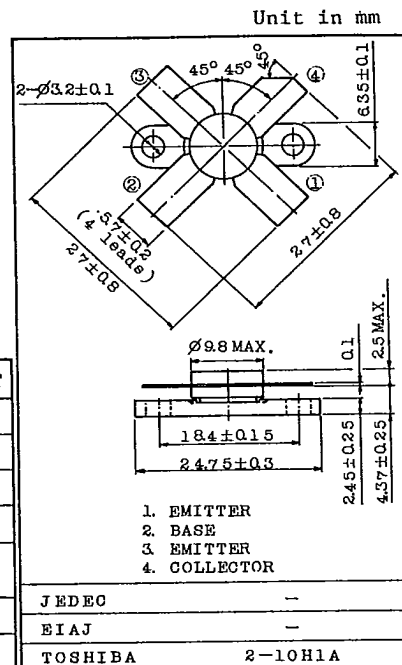
VHF BAND POWER AMPLIFIER APPLICATIONS.

FEATURES :

- Output Power : $P_o=40W$ (Min.)
($f=175MHz$, $V_{CC}=13.5V$, $P_i=10W$)
- 100% Tested for Load Mismatch Stress at All Phase Angles with 30:1 VSWR @ $V_{CC}=13.5V$, $P_i=10W$, $f=175MHz$

MAXIMUM RATINGS ($T_a=25^\circ C$)

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	10	A
Collector Power Dissipation ($T_c=25^\circ C$)	P_C	70	W
Junction Temperature	T_j	175	$^\circ C$
Storage Temperature Range	T_{stg}	-65 ~ 175	$^\circ C$



Weight : 4.0g

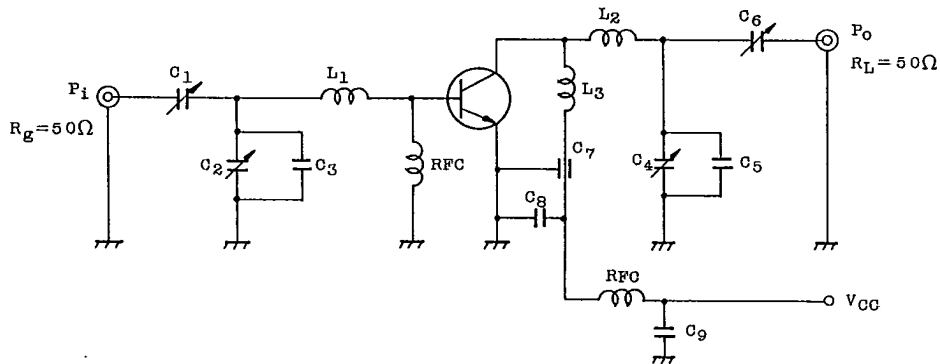
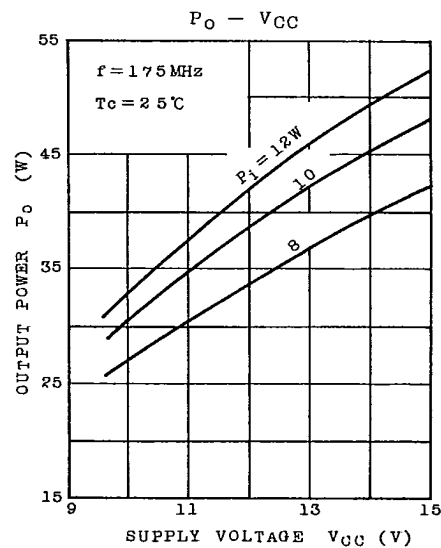
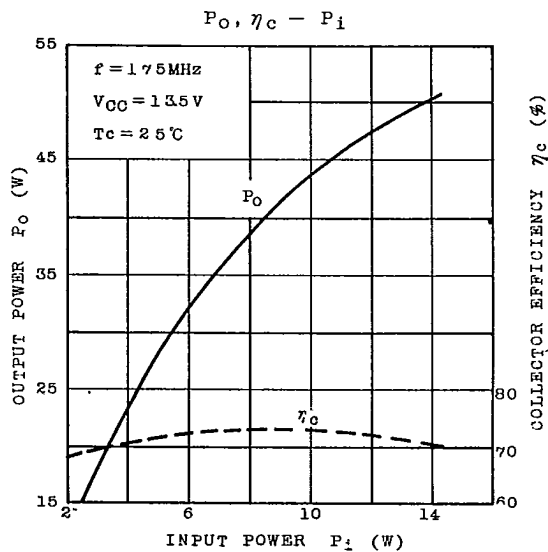
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=15V$, $I_E=0$	—	—	2	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=20mA$, $I_E=0$	35	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=50mA$, $I_B=0$	18	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA$, $I_C=0$	3.5	—	—	V
DC Current Gain	h_{FE}	$V_{CE}=5V$, $I_C=5A$	10	—	—	
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$, $I_E=0$, $f=1MHz$	—	—	160	pF
Output Power	P_o	(Fig.)	40	44	—	W
Power Gain	G_{pe}	$V_{CC}=13.5V$, $f=175MHz$, $P_i=10W$	6.0	6.4	—	dB
Collector Efficiency	η_c		60	73	—	%
Series Equivalent Input Impedance	Z_{in}	$V_{CC}=13.5V$, $f=175MHz$, $P_o=40W$	—	0.95 -j0.1	—	Ω
Series Equivalent Output Impedance	Z_{out}		—	2.6 -j0.15	—	Ω

TOSHIBA CORPORATION

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56C 07499 DT-33-13

2SC2181Fig. P_O TEST CIRCUIT C_1, C_2, C_4, C_6 : 3.5 ~ 30pF C_3, C_5 : 30pF CERAMIC CONDENSER C_7 : 1000pF FEED THROUGH C_8, C_9 : 0.01μF CERAMIC CONDENSER L_1 : φ1.2 SILVER PLATED COPPER WIRE,
10ID, 1/2T L_2 : φ1.2 SILVER PLATED COPPER WIRE,
10ID, 1T L_3 : φ1.2 SILVER PLATED COPPER WIRE,
10ID, 2TRFC : φ1.0 ENAMEL COATED COPPER WIRE,
8ID, 10T

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