

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07474 D T-33-09

SILICON NPN EPITAXIAL PLANAR TYPE

2SC2098

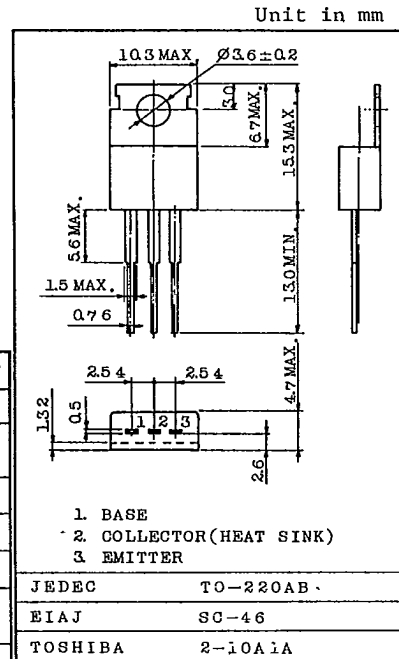
CITIZEN BAND AND HAM BAND UP TO 50MHZ RF
POWER AMPLIFIER APPLICATIONS.
(LOW SUPPLY VOLTAGE USE)

FEATURES:

- Recommended for 12W(PEP) SSB Citizen Band Transceiver Applications.
- High Power Gain : $G_{pe}=11.8\text{dB(Typ.)}$ @ $f=28\text{MHz}$
- Designed to Withstand Load Mismatch at All Phase Angles with Infinite VSWR at 17 Volts.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	70	V
Collector-Emitter Voltage ($R_{EB}=10\Omega$)	V_{CER}	70	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	6	A
Emitter Current	I_E	-6	A
Collector Power Dissipation ($T_c=25^\circ\text{C}$)	P_C	20	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ\text{C}$



Weight : 1.9g

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

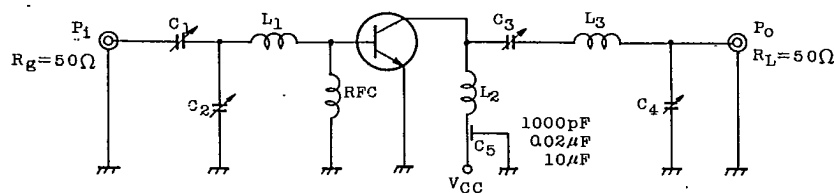
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0$	-	-	0.1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	70	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C=10\text{mA}, R_{EB}=10\Omega$	70	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	4	-	-	V
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=4\text{A}$	20	-	100	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4\text{A}, I_B=0.4\text{A}$	-	-	1.5	V
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	100	-	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	80	120	pF
Output Power	$P_o(1)$	$V_{CC}=12\text{V}, f=28\text{MHz}$ $P_i=1\text{W}, \eta_c \geq 60\%$ (Fig.)	13	15	-	W
	$P_o(2)$	$V_{CC}=12\text{V}, f=50\text{MHz}$ $P_i=3\text{W}, \eta_c \geq 60\%$ (Fig.)	-	16	-	W

TOSHIBA CORPORATION

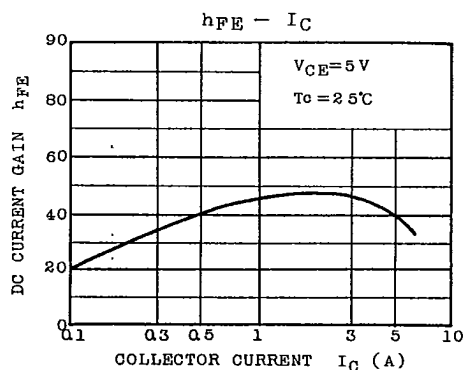
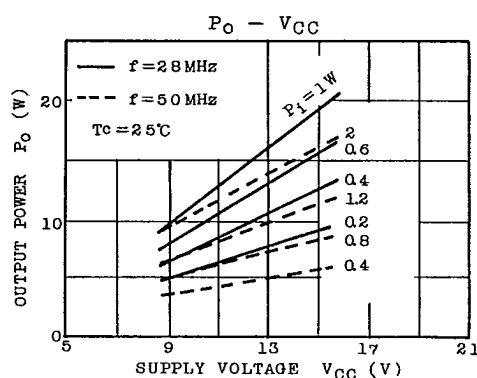
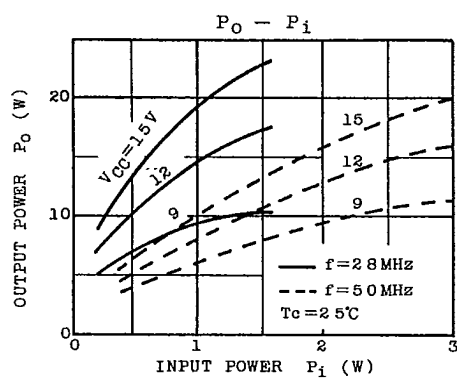
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56C 07475

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2SC2098Fig. P_O TEST CIRCUIT

	28MHz	50MHz
C_1 :	$\sim 100\text{pF}$	$\sim 50\text{pF}$
C_2, C_3 :	$\sim 150\text{pF}$	$\sim 100\text{pF}$
C_4 :	$\sim 300\text{pF}$	$\sim 200\text{pF}$
L_1 :	$\phi 0.8$ SILVER PLATED COPPER WIRE, 10ID, 8T	10ID, 5T
L_2 :	$\phi 0.8$ SILVER PLATED COPPER WIRE, 10ID, 5T	8ID, 5T
L_3 :	$\phi 0.8$ SILVER PLATED COPPER WIRE, 10ID, 8T	10ID, 7T



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