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}=11.8dB(Typ.) @ f=28MHz

- Designed to Withstand Load Mismatch at All Phase
  Angles with Infinite VSWR at 17 Volts.

Unit in mm

1. BASE
2. COLLECTOR(HEAT SINK)
3. EMITTER

JEDEC	TO−220AB
EIAJ	SC−46
TOSHIBA	2−10A1A

Weight : 1.9g

MAXIMUM RATINGS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	70	V
Collector-Emitter Voltage (R_{EB}=10Ω)	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 (Tc=25 °C)	P_C	20	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55～150	°C
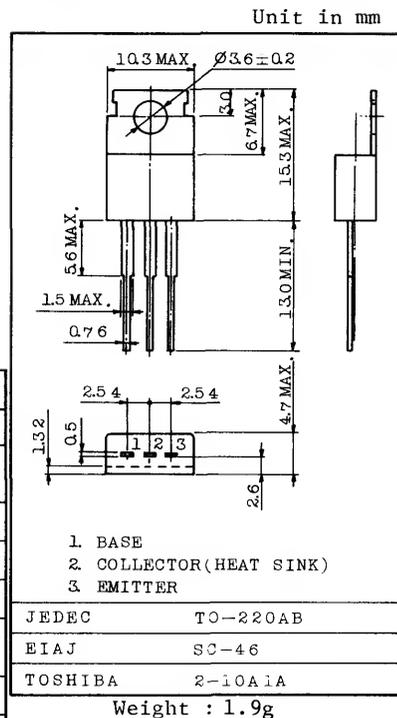
ELECTRICAL CHARACTERISTICS (Ta=25°C)

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

TOSHIBA CORPORATION

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Fig. P_O TEST CIRCUIT
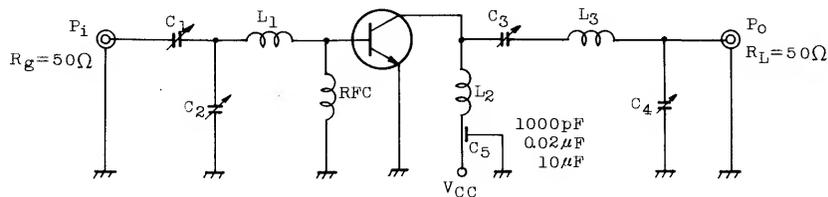
	28MHz	50MHz
C_1 :	~100pF	~50pF
C_2, C_3 :	~150pF	~100pF
C_4 :	~300pF	~200pF

L_1 : ϕ0.8 SILVER PLATED COPPER WIRE, 10ID, 8T   10ID, 5T

L_2 : ϕ0.8 SILVER PLATED COPPER WIRE, 10ID, 5T   8ID, 5T

L_3 : ϕ0.8 SILVER PLATED COPPER WIRE, 10ID, 8T   10ID, 7T

$P_O - P_i$

$P_O - V_{CC}$

$h_{FE} - I_C$