



# SEMICONDUCTOR

## TECHNICAL DATA

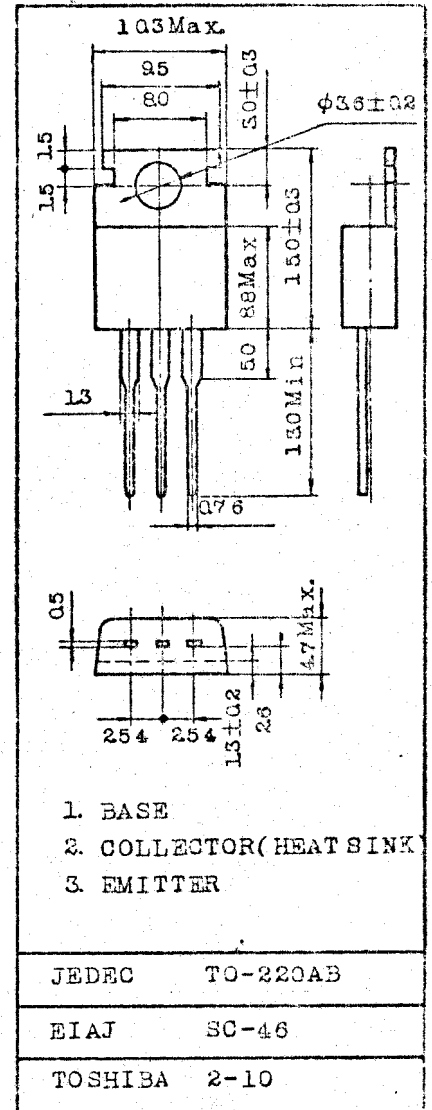
TOSHIBA TRANSISTOR

2SC2098

SILICON NPN EPITAXIAL PLANAR

- The 2SC2098 is designed for 25~50MHz RF power amplifier applications
- RF power output 13W MIN.  $f=28\text{MHz}$   $V_{CC}=12\text{V}$   
High power gain 11dB MIN.
- Recommended for 12W PEP SSB Citizen Band transceiver

Unit in mm



### MAXIMUM RATINGS (Ta=25°C)

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



# SEMICONDUCTOR

## TECHNICAL DATA

2SC2098

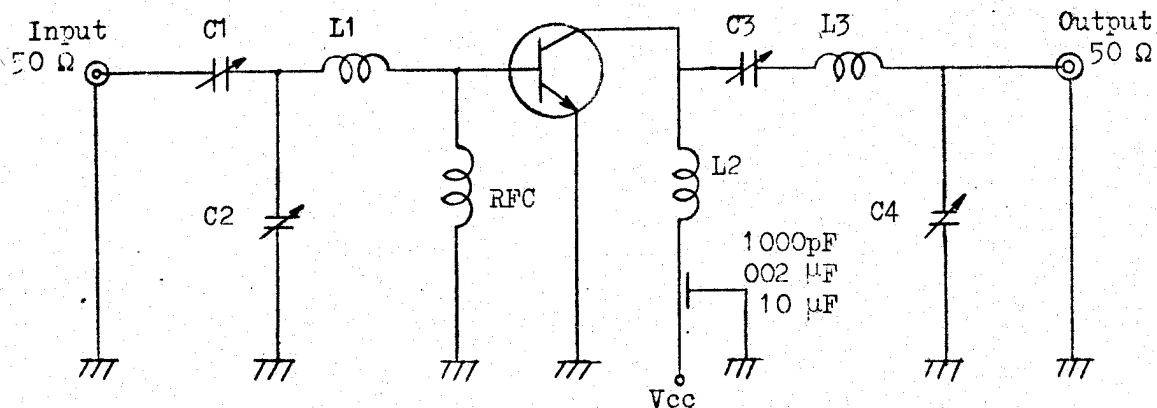
### ELECTRICAL CHARACTERISTICS

Ta=25°C

CHARACTERISTIC	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40V$ $I_E=0$	—	—	0.1	mA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10mA$ $I_E=0$	70	—	—	V
Collector to Emitter Breakdown Voltage (R <sub>EB</sub> =∞)	$V_{(BR)CER}$	$I_C=10mA$ $I_E=0$	70	—	—	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C=10mA$ $I_B=0$	4	—	—	V
DC Current Gain (Note1)	$h_{FE}$	$V_{CE}=5V$ $I_C=4A$	20	—	100	—
Output Capacitance	$C_{ob}$	$V_{CB}=10V$ $I_E=0$ $f=1MHz$	—	55	80	pF
Power Output (1) (Fig 1)	$P_o(1)$	$V_{CC}=12V$ $f=28MHz$ $P_i=1W$ $\eta_c \approx 60\%$	13	15	—	W
Power Output (2)	$P_o(2)$	$V_{CC}=12V$ $f=50MHz$ $P_i=3W$ $\eta_c \approx 60\%$	—	16	—	W

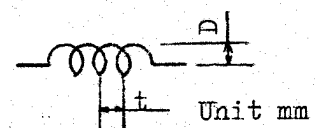
Note 1 : Pulse Width  $\leq 100\mu s$  Duty Cycle  $\leq 3\%$

Fig 1 Output Power Test Circuit (f=27 MHz)



- C1 : ~100pF Variable Capacitor
- C2 C3 : ~150pF Variable Capacitor
- C4 : ~300pF Variable Capacitor

- L1 L3 :  $\phi 08$  Silver Plated Copper Wire 8T D=10 t=2
- L2 : " " 5T D=10 t=2



Unit mm