

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07470 DT-33-07

SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC2075

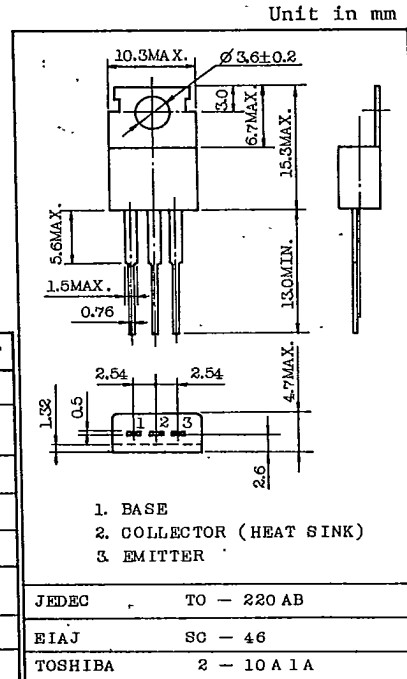
27MHz POWER AMPLIFIER APPLICATIONS.

FEATURES:

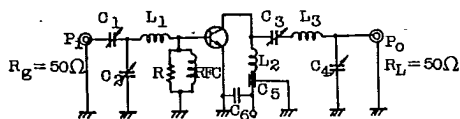
- Recommended for Output Stage Application of AM 4W Transmitter.
- High Power Gain.
- Wide Area of Safe Operation.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	80	V
Collector-Emitter Voltage $R_{BE}=50\Omega$	V_{CER}	80	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	4	A
Emitter Current	I_E	-4	A
Collector Power Dissipation ($T_c=25^\circ\text{C}$)	P_C	10	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$

Mounting Kit No. AC75
Weight : 1.9gELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=30V, I_E=0$	-	-	10	μA
Breakdown Voltage	Collector-Emitter	$I_C=10\text{mA}, R_{BE}=50\Omega$	80	-	-	V
	Emitter-Base	$I_E=1.0\text{mA}, I_C=0$	4.0	-	-	V
DC Current Gain	$h_{FE}(1)$	$V_{CE}=5V, I_C=0.5A$	25	-	-	
	$h_{FE}(2)$	$V_{CE}=2V, I_C=3A$	15	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=0.3A$	-	-	1.5	V
Transition Frequency	f_T	$V_{CE}=5V, I_C=500\text{mA}$	-	100	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1\text{MHz}$	-	40	-	pF
Output Power (Fig. 1)	P_o	$V_{CC}=12V, P_i=0.3W, f=27\text{MHz}$	3.5	-	-	W

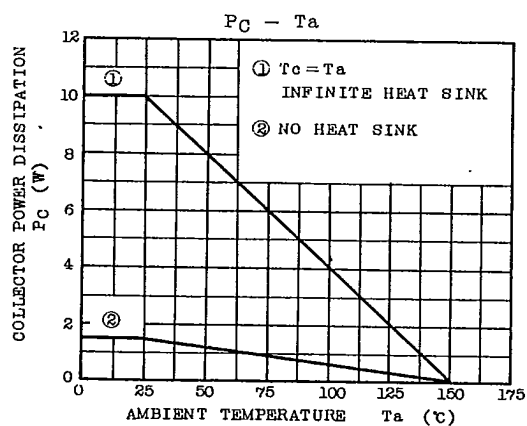
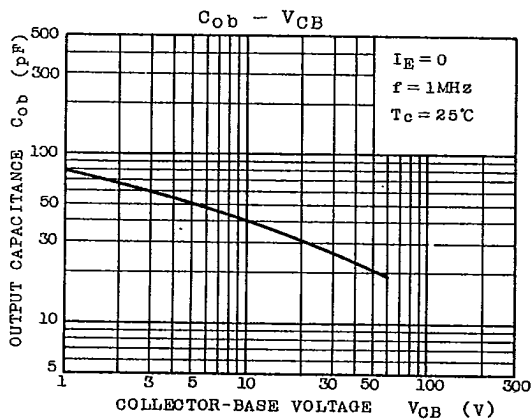
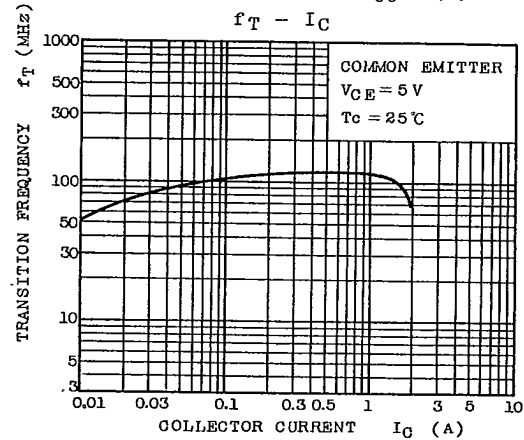
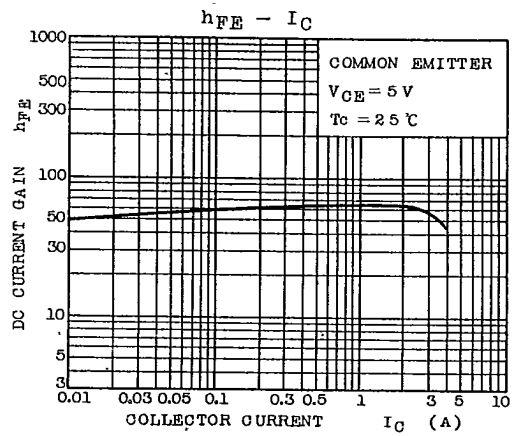
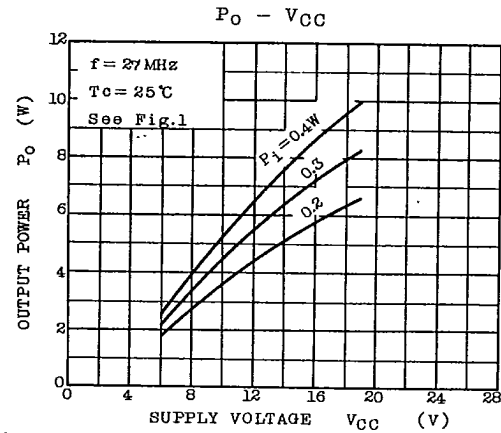
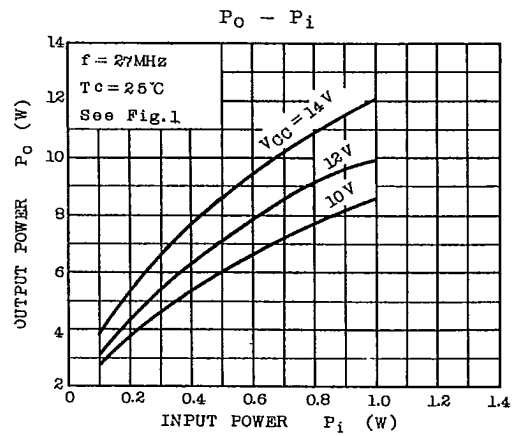
Fig. 1 P_o TEST CIRCUIT

$C_1: \sim 100\text{pF}$, $C_2, C_3: \sim 150\text{pF}$, $C_4: \sim 300\text{pF}$, $C_5: 1000\text{pF}$
 $C_6: 0.01\mu\text{F}$, $R: 250\Omega$
 $L_1: 0.8\text{mm}\varnothing \text{ UEW, } 7T, 8\text{mm I.D.}$ $L_2: 0.8\text{mm}\varnothing \text{ UEW, } 5T, 8\text{mm I.D.}$
 $L_3: 0.8\text{mm}\varnothing \text{ UEW, } 10T, 8\text{mm I.D.}$ $RFC: 0.35\text{mm}\varnothing \text{ UEW, } 17T, 5\text{mm I.D.}$

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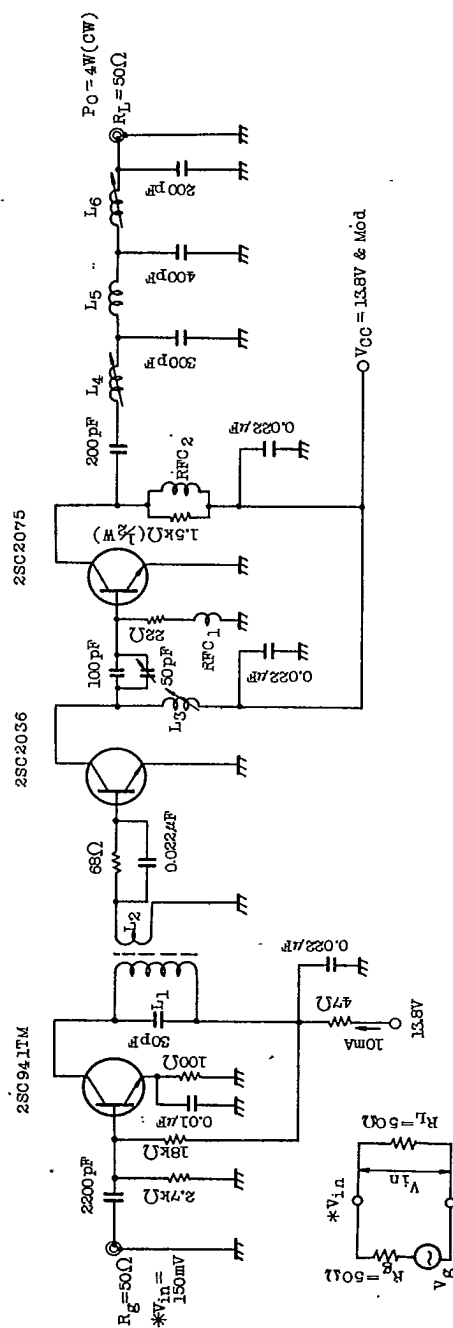
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Fig.2 27MHz 4W OUTPUT AM TRANSCEIVER CIRCUIT



- L_1 : 4mm $\varnothing$ BOBBIN WITH FERRITE CORE , 0.08mm $\varnothing$ UEW, 8 TURNS
 L_2 : 4mm $\varnothing$ BOBBIN WITH FERRITE CORE , 0.08mm $\varnothing$ UEW, 2 TURNS
 L_3, L_6 : 6.5mm $\varnothing$ BOBBIN WITH FERRITE CORE , 0.6mm $\varnothing$ Sn PLATED COPPER WIRE 6 $\frac{1}{2}$ TURNS
 L_4 : 6.5mm $\varnothing$ BOBBIN WITH FERRITE CORE , 0.6mm $\varnothing$ Sn PLATED COPPER WIRE 8 $\frac{1}{2}$ TURNS
 L_5 : 6.6mm $\varnothing$ Sn PLATED COPPER WIRE , 6.5mm I.D, 8 $\frac{1}{2}$ TURNS
 RFC₁ : 47 μ H, 7BA-480k (TOKO)
 RFC₂ : 0.2mm $\varnothing$ UEW, 30 TURNS

RESISTOR : 1/4 W CARBON

CAPACITOR : CERAMIC

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APPLICATION CIRCUIT CHARACTERISTIC

