

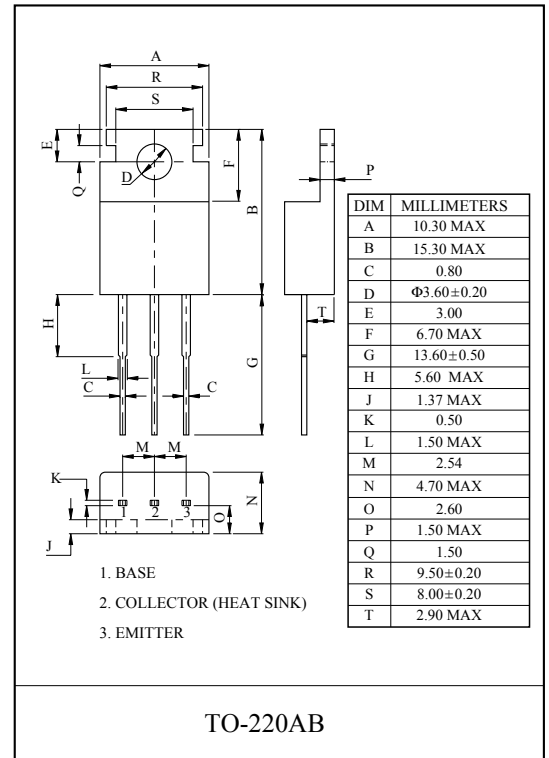
CB TRANSCEIVER TX FINAL AMPLIFIER APPLICATION.
HF TRANSCEIVER APPLICATION.

FEATURES

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

MAXIMUM RATING (Ta=25°C)

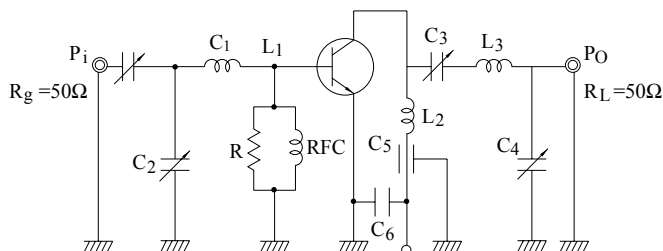
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--|-----------|-----------|------|
| Collector-Base Voltage | V_{CBO} | 80 | V |
| Collector-Emitter Voltage ($R_{BE}=50\Omega$) | V_{CER} | 80 | V |
| Emitter-Base Voltage | V_{EBO} | 4 | V |
| Collector Current | I_C | 4 | A |
| Emitter Current | I_E | -4 | A |
| Collector Power Dissipation ($T_c=25^\circ\text{C}$) | P_C | 10 | W |
| Junction Temperature | T_j | 150 | °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} | $V_{CB}=30V, I_E=0$ | - | - | 10 | μA |
| Breakdown Voltage | Collector-Emitter | $V_{(BR)CER}$ | 80 | - | - | V |
| | Emitter-Base | $V_{(BR)EBO}$ | 4 | - | - | V |
| DC Current Gain | h_{FE} | $V_{CE}=5V, I_C=0.5A$ | 100 | - | 200 | |
| 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 | $V_{CC}=12V, P_i=0.3W, f=27\text{MHz}$ | 4 | - | - | W |

Fig. 1 P_o TEST CIRCUIT



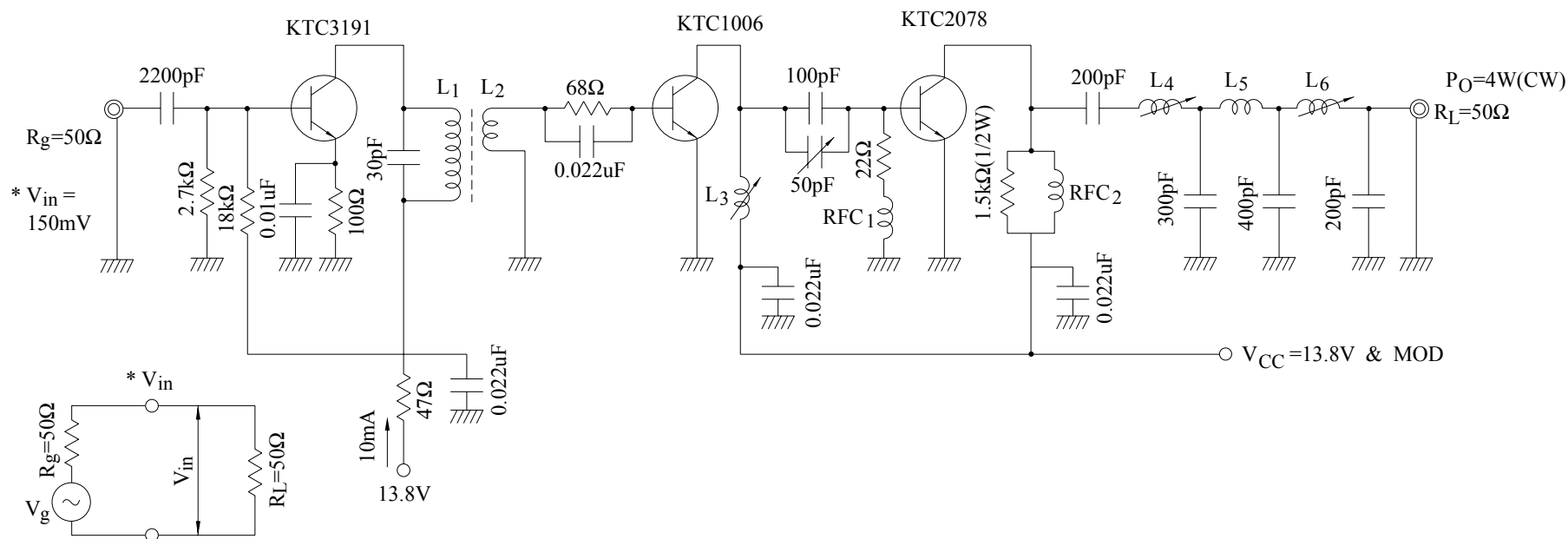
$C_1: \sim 100\text{pF}, C_2, C_3: \sim 150\text{pF}, C_4: \sim 300\text{pF}, C_5: 1000\text{pF}$

$C_6: 0.01\mu\text{F}, R: 250\Omega$

$L_1: 0.8\text{mm } \phi \text{ UEW, } 7\text{T, } 8\text{mm I.D. } L_2: 0.8\text{mm } \phi \text{ UEW, } 5\text{T, } 8\text{mm I.D.}$

$L_3: 0.8\text{mm } \phi \text{ UEW, } 10\text{T, } 8\text{mm I.D. } \text{RFC: } 0.35\text{mm } \phi \text{ UEW, } 17\text{T, } 5\text{mm I.D.}$

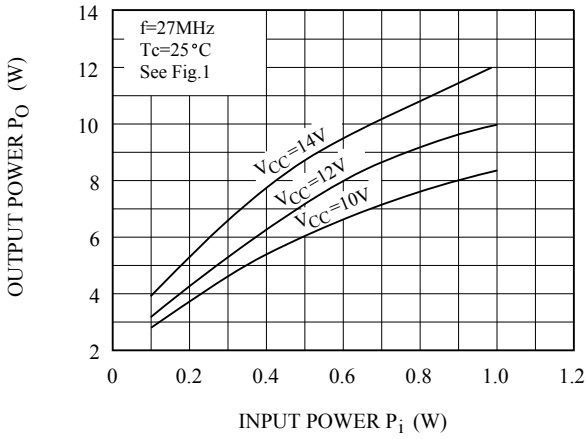
Fig.2 27MHz 4W OUTPUT AM TRANSCEIVER CIRCUIT



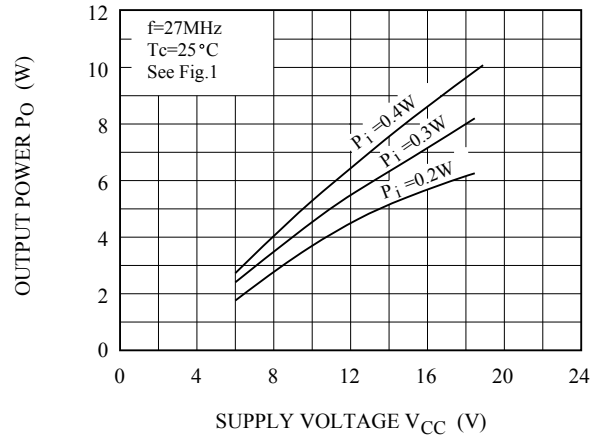
- L_1 : 4mm Φ BOBBIN WITH FERRITE CORE, 0.08mm Φ UEW, 8 TURNS
 L_2 : 4mm Φ BOBBIN WITH FERRITE CORE, 0.08mm Φ UEW, 2 TURNS
 L_3, L_6 : 6.5mm Φ BOBBIN WITH FERRITE CORE, 0.6mm Φ Sn PLATED COPPER WIRE $6\frac{1}{2}$ TURNS
 L_4 : 6.5mm Φ BOBBIN WITH FERRITE CORE, 0.6mm Φ Sn PLATED COPPER WIRE $8\frac{1}{2}$ TURNS
 L_5 : 0.6mm Φ Sn PLATED COPPER WIRE, 6.5mm I.D, $8\frac{1}{2}$ TURNS
 RFC₁ : 4.7 μ H, 7BA-480k (TOKO) RESISTOR : 1/4W CARBON
 RFC₂ : 0.2mm Φ UEW, 30 TURNS CAPACITOR : CERAMIC

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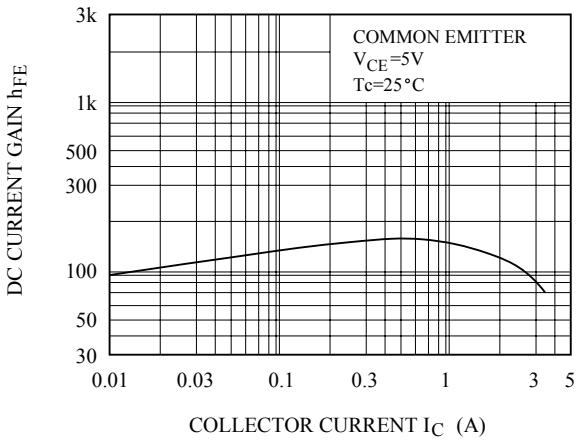
$P_O - P_i$



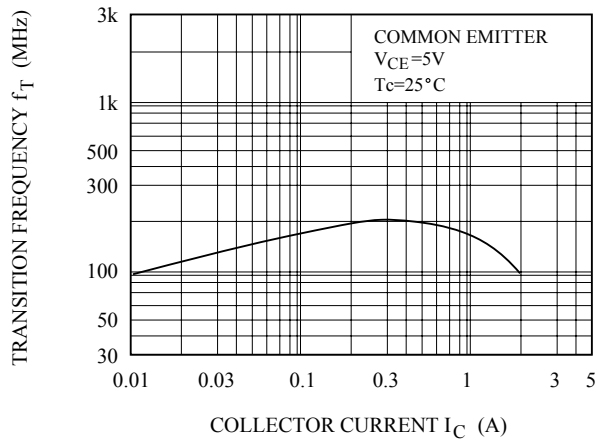
$P_O - V_{CC}$



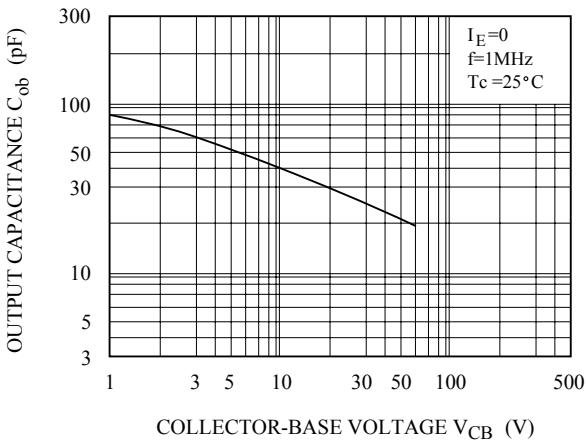
$h_{FE} - I_C$



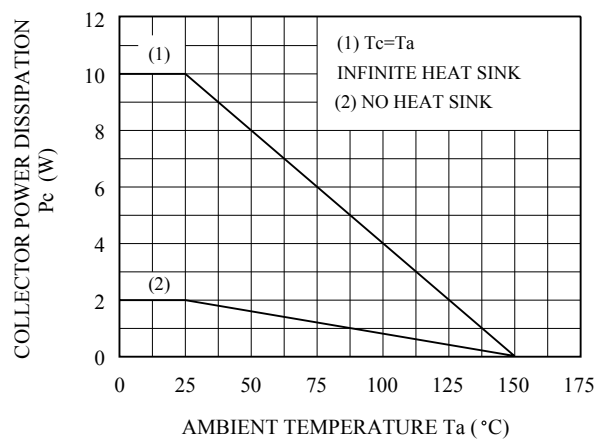
$f_T - I_C$



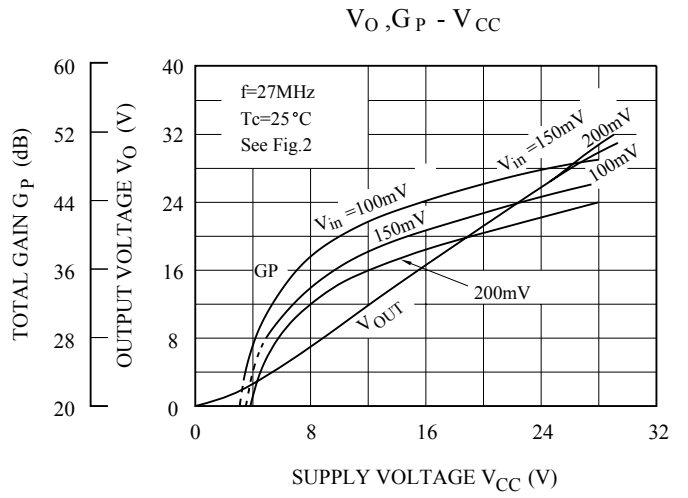
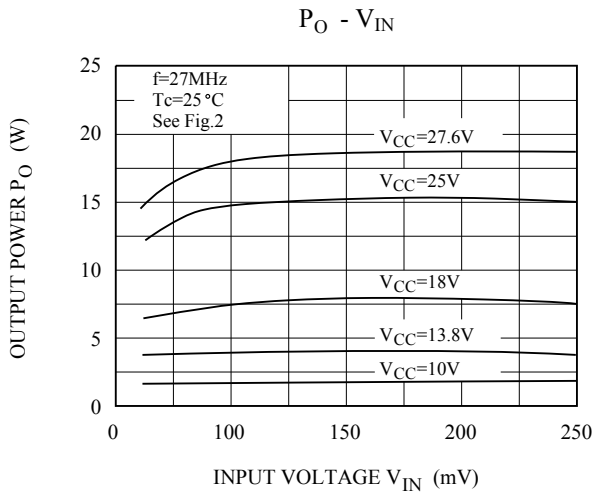
$C_{ob} - V_{CB}$



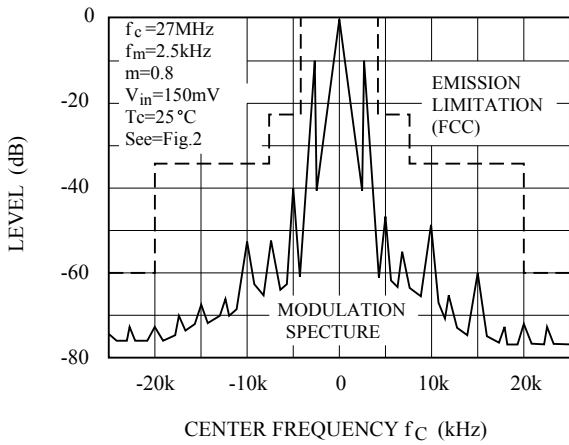
$P_c - T_a$



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80% MODULATION SPECTRUM
EMISSION LIMITATION (FCC)



85% MODULATION SPECTRUM
EMISSION LIMITATION (FCC)

