KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR TECHNICAL DATA

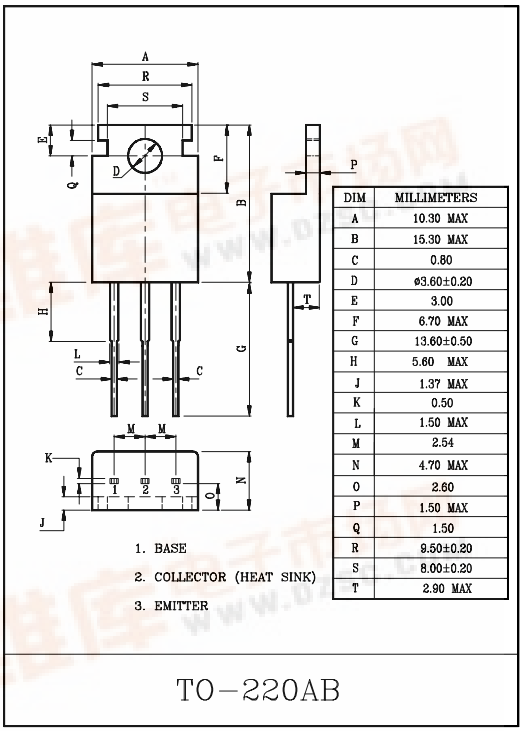
KTC2078

TRIPLE DIFFUSED NPN TRANSISTOR

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.



DIM	MILLIMETERS
A	10.30 MAX
B	15.30 MAX
C	0.80
D	ø3.60±0.20
E	3.00
F	6.70 MAX
G	13.60±0.50
H	5.60 MAX
J	1.37 MAX
K	0.50
L	1.50 MAX
M	2.54
N	4.70 MAX
O	2.60
P	1.50 MAX
Q	1.50
R	9.50±0.20
S	8.00±0.20
T	2.90 MAX

TO-220AB

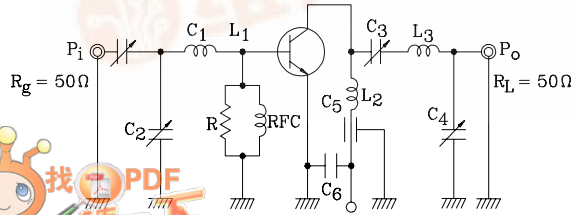
MAXIMUM RATINGS(Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage (R_{BE}=50Ω)	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 (Tc=25℃)	P_C	10	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

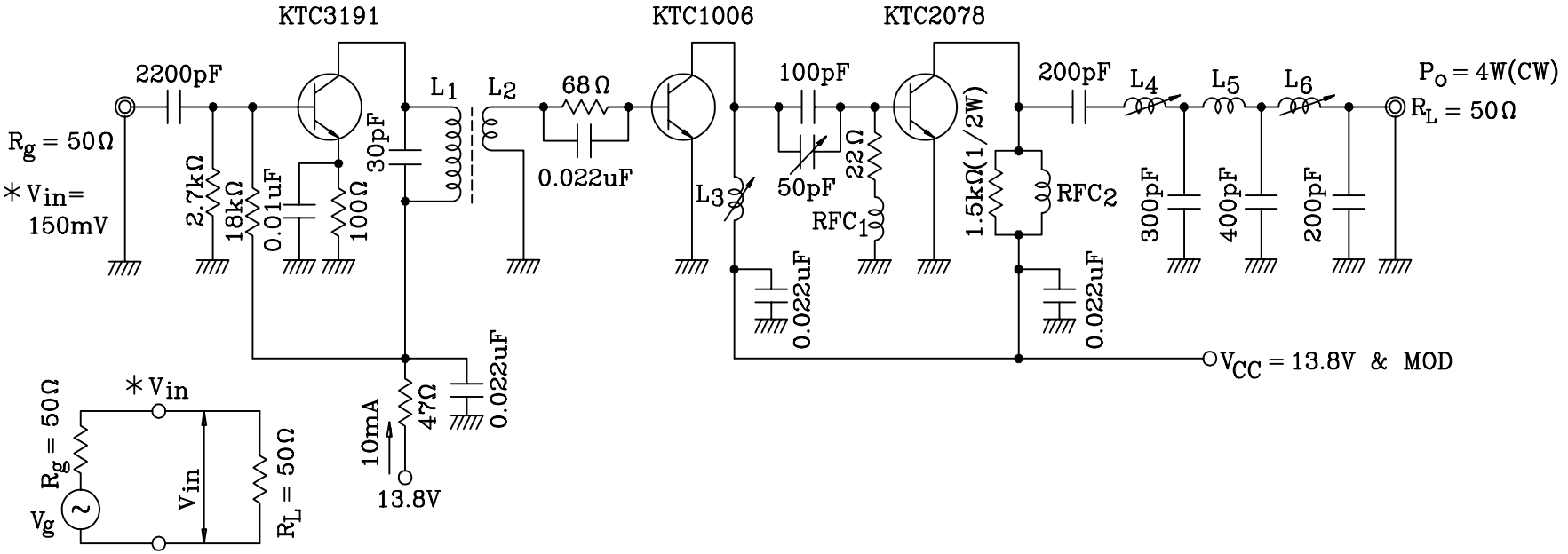
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=30V, I_E=0	-	-	10	μA
Breakdown Voltage	Collector-Emitter	$V_{(BR)CER}$	I_C=10mA, R_{BE}=50Ω	80	-	-	V
	Emitter-Base	$V_{(BR)EBO}$	I_E=1.0mA, I_C=0	4	-	-	V
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=0.5A	100	-	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=500mA	100	-	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	40	-	pF
Output Power (Fig.1)		P_o	V_{CC}=12V, P_i=0.3W, f=27MHz	4	-	-	W

Fig.1 P_o TEST CIRCUIT



C_1:~100pF, C_2,C_3:~150pF, C_4:~300pF, C_5:1000pF
C_6:0.01μF, R:250Ω
L_1:0.8mmϕ UEW,7T,8mm I.D L_2:0.8mmϕ UEW,5T,8mm I.D
L_3:0.8mmϕ UEW,10T,8mm I.D RFC:0.35mmϕ UEW,17T,5mm I.D

Fig.2 27MHz 4W OUTPUT AM TRANSCEIVER CIRCUIT



L_1 : 4mmø BOBBIN WITH FERRITE CORE, 0.08mmø UEW, 8 TURNS

L_2 : 4mmø BOBBIN WITH FERRITE CORE, 0.08mmø UEW, 2 TURNS

L_3, L_6 : 6.5mmø BOBBIN WITH FERRITE CORE, 0.6mmø Sn PLATED COPPER WIRE $6\frac{1}{2}$ TURNS

L_4 : 6.5mmø BOBBIN WITH FERRITE CORE, 0.6mmø Sn PLATED COPPER WIRE $8\frac{1}{2}$ TURNS

L_5 : 0.6mmø Sn PLATED COPPER WIRE, 6.5mm I.D, $8\frac{1}{2}$ TURNS

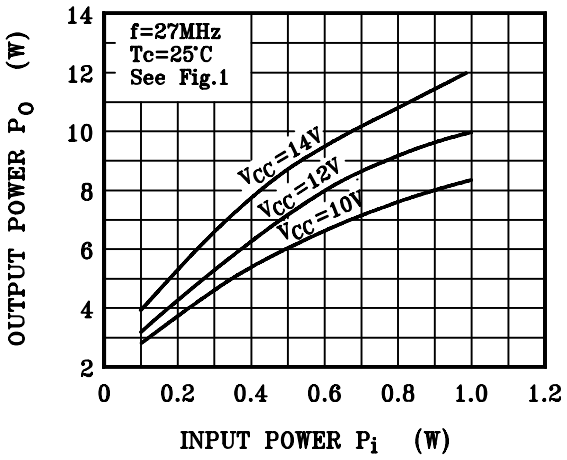
RFC_1 : 4.7uH,7BA-480k (TOKO)

RFC_2 : 0.2mmø UEW, 30 TURNS

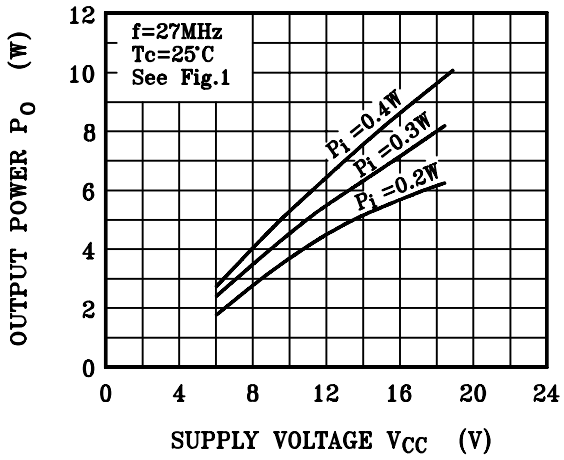
RESISTOR : 1/4W CARBON

CAPACITOR : CERAMIC

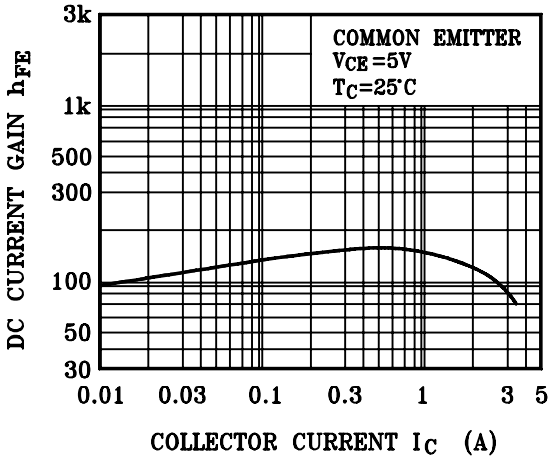
P_O – P_i



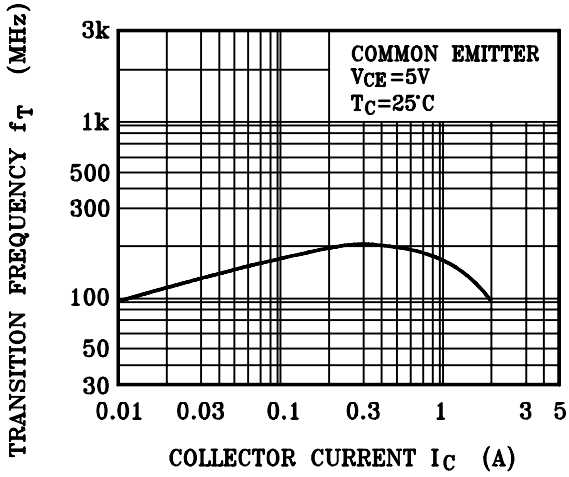
P_O – V_{CC}



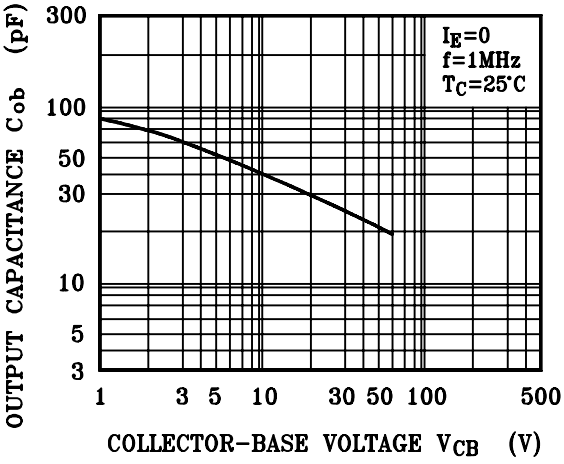
h_{FE} – I_C



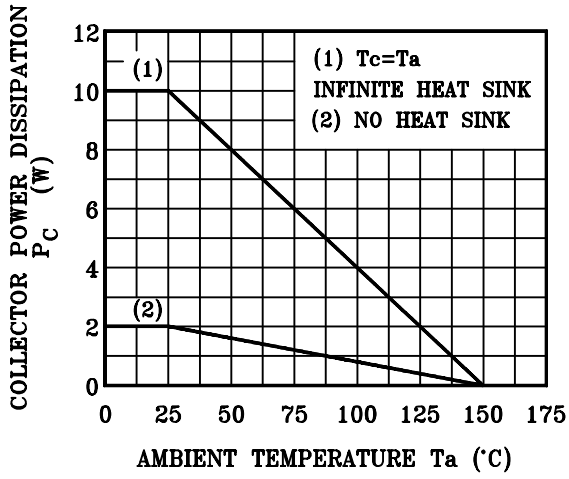
f_T – I_C



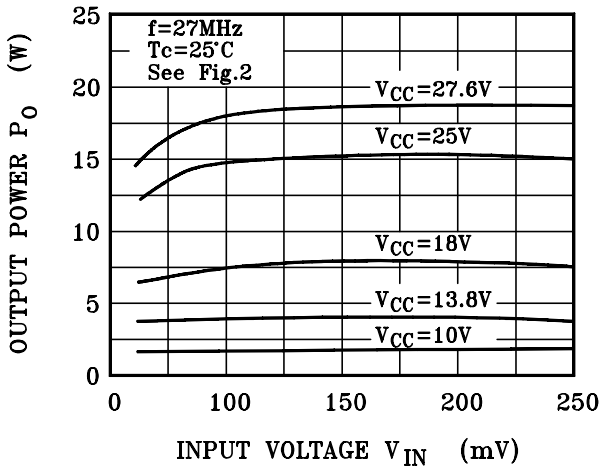
C_{ob} – V_{CB}



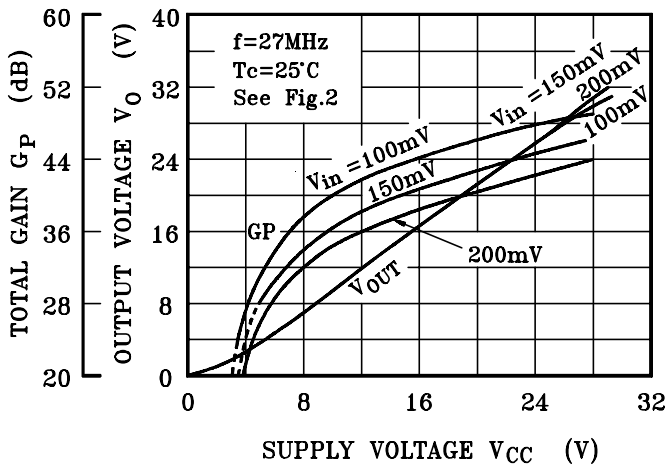
P_C – Ta



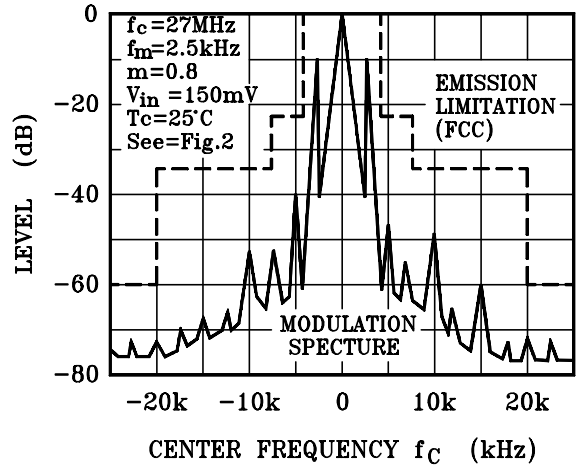
P_O – V_{IN}



V_O,G_P – V_{CC}



80% MODULATION SPECTRUM
EMISSION LIMITATION (FCC)



85% MODULATION SPECTRUM
EMISSION LIMITATION (FCC)