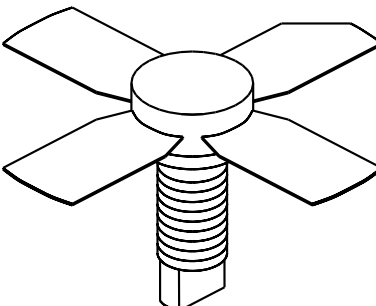


UTV010

1 Watt, 20 Volts, Class A
UHF Television - Band IV & V

| | |
|--|---|
| <p>GENERAL DESCRIPTION</p> <p>The UTV 010 is a COMMON EMITTER transistor capable of providing 1 Watt Peak, Class A, RF Output Power over the band 470 - 860 MHz. Gold Metalization and Diffused Ballasting are used to provide high reliability and supreme ruggedness.</p> | <p>CASE OUTLINE 55FT, STYLE 2</p>  |
| <p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C 15 Watts</p> <p>Maximum Voltage and Current</p> <p>BVces Collector to Emitter Voltage 45 Volts BVceo Collector to Emitter Voltage 20 Volts BVebo Emitter to Base Voltage 3.5 Volts Ic Collector Current 1.25 Amps</p> <p>Maximum Temperatures</p> <p>Storage Temperature - 65 to + 150°C Operating Junction Temperature + 200°C</p> | |

ELECTRICAL CHARACTERISTICS @ 25 °C

| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|-------------------------|----------------------------|-------------------|-----|------|------|-------|
| Pout | Power Out - Pk Sync | F = 470 - 860 MHz | | 1.0 | | Watts |
| Pin | Power Input | Vcc = 20 Volts | | | 0.09 | Watts |
| Pg | Power Gain | Ic = 440 mA | | 11.5 | | dB |
| IMD¹ | Intermodulation Distortion | Pref = 1.0 Watts | | -60 | | dB |
| VSWR₁ | Load Mismatch Tolerance | F = 860 MHz | | | 30:1 | |

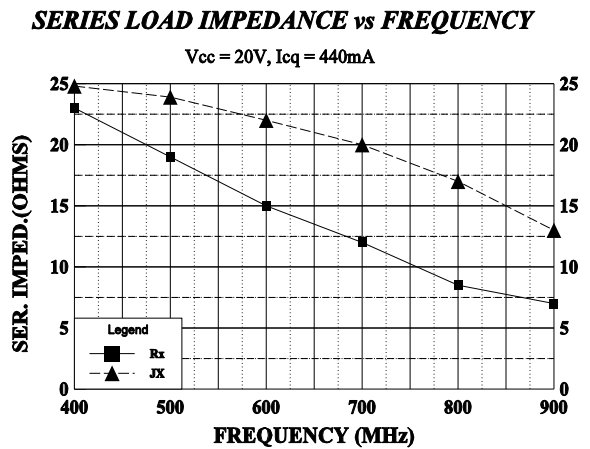
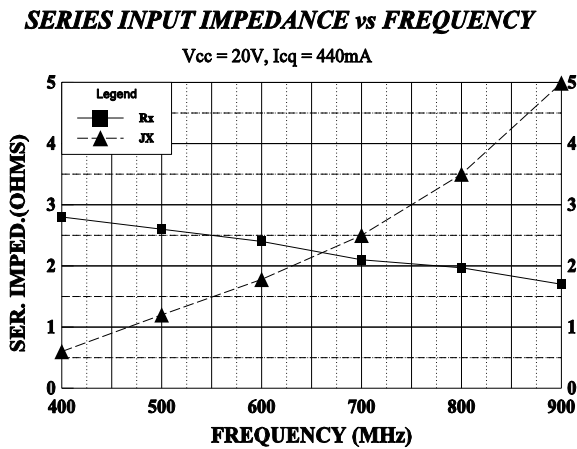
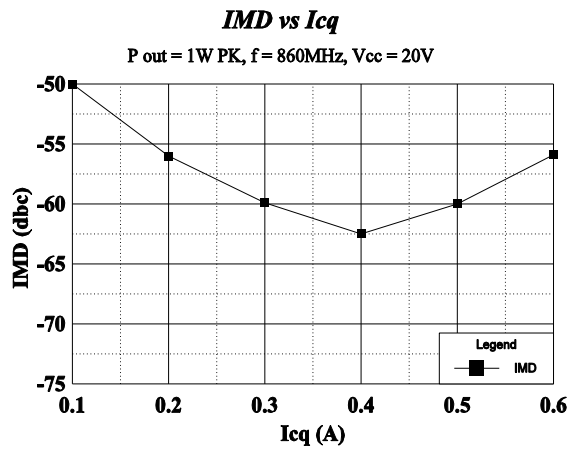
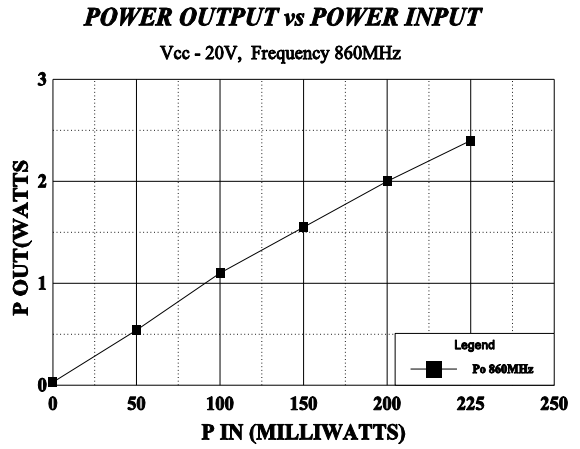
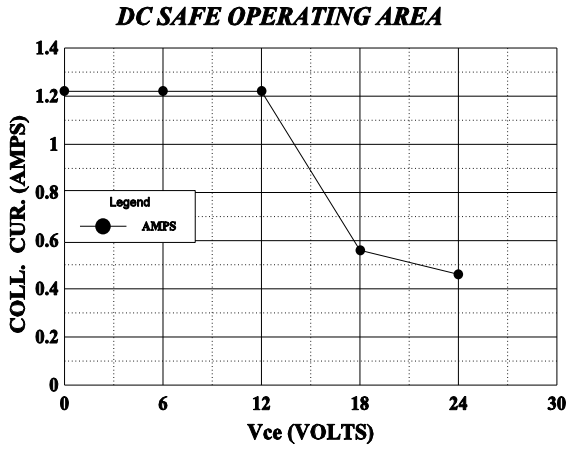
| | | | | | | |
|-----------------------|--------------------------------|-----------------------|-----|-----|----|-------|
| LVceo | Collector to Emitter Breakdown | Ic = 20 mA | 24 | | | Volts |
| BVces | Collector to Base Breakdown | Ic = 10 mA | 45 | | | Volts |
| BVebo | Emitter to Base Breakdown | Ie = 1 mA | 3.5 | | | Volts |
| h_{FE} | Current Gain | Vce = 5 V, 200 mA | 15 | | | |
| Cob | Output Capacitance | Vcb = 20 V, F = 1 MHz | | 7.0 | | pF |
| θjc | Thermal Resistance | Tc = 25°C | | | 12 | °C/W |

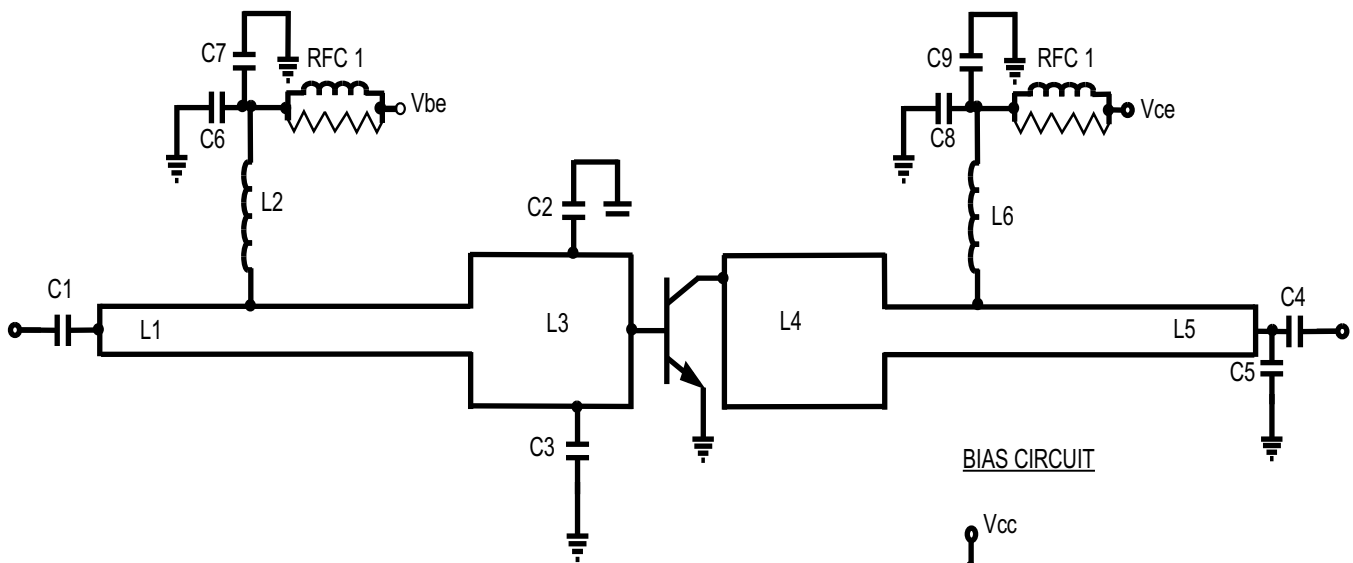
Note 1: F1=860 MHz, F2=863.5 MHz, F3=864.5 Mhz

European test method, Vision = - 8dB, Sideband= - 16dB, Sound = -7 dB

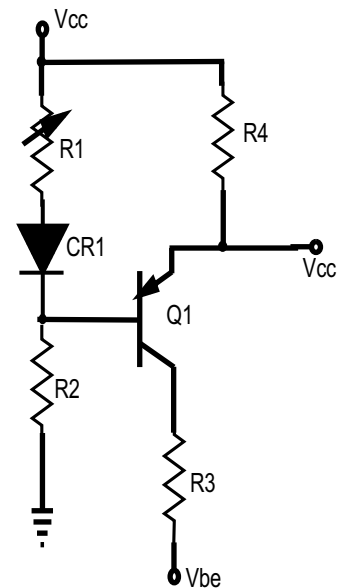
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BIAS CIRCUIT



C1,C4=100 ATC "B"
 C2,C3= 8.2 pf ATC
 C5= 2.0 pf
 C6,C8= 1mF TANT
 C7,C9= 1mF 50V
 L2=3.3mH molded Ind.
 L6= 100W Stripline
 RFC1=5 Turns, 24Awg on 125ml Toroid
 RFC2 in parallel with 15 1/2 Resistor
 L5,L1= 50W Stripline 2" long
 L4,L3= 34W Stripline 300 mils long

R1= 500 ohm Pot
 R2= 4.7 Kohm 1/4 W
 R3= 47 ohm 1/4 W
 R4= 1 ohm 3 Watt, 1%
 CR1= IN 4148
 Q1= MJE 172