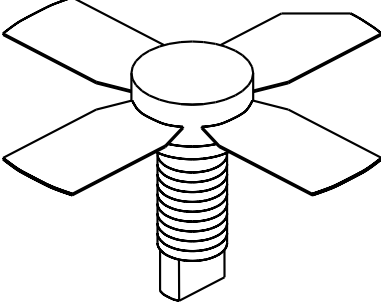


UTV010

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

<p>GENERAL DESCRIPTION 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	

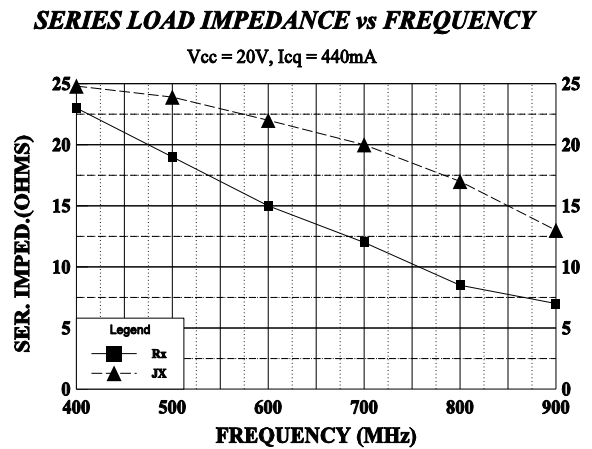
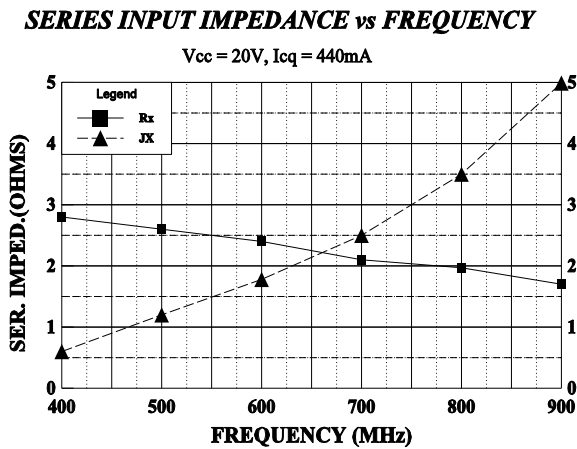
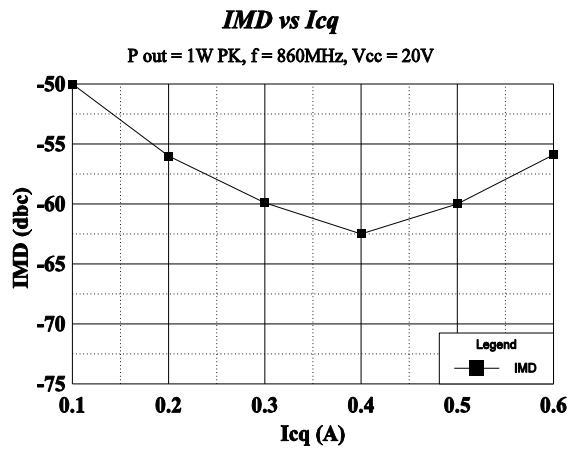
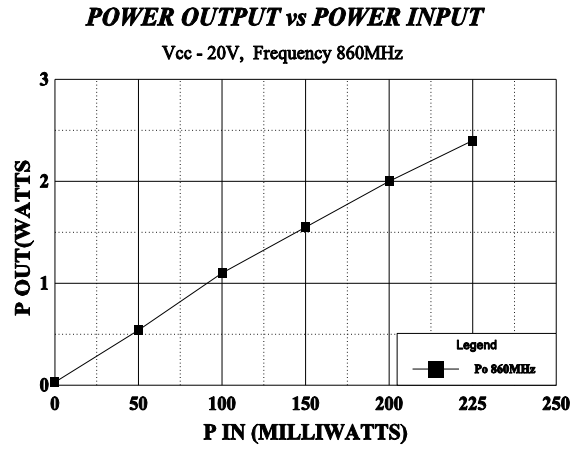
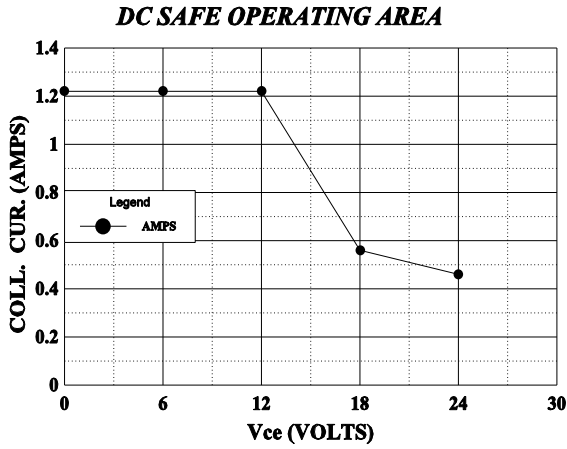
LVceo	Collector to Emitter Breakdown	Ic = 20 mA	24			Volts
BVces	Collector to Base Breakdown	Ic = 10 mA	45			Volts
BVebo	Emitter to Base Breakdown	Ie = 1 mA	3.5			Volts
h_{FE}	Current Gain	Vce = 5 V, 200 mA	15			
Cob	Output Capacitance	Vcb = 20 V, F = 1 MHz		7.0		pF
θjc	Thermal Resistance	Tc = 25°C	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

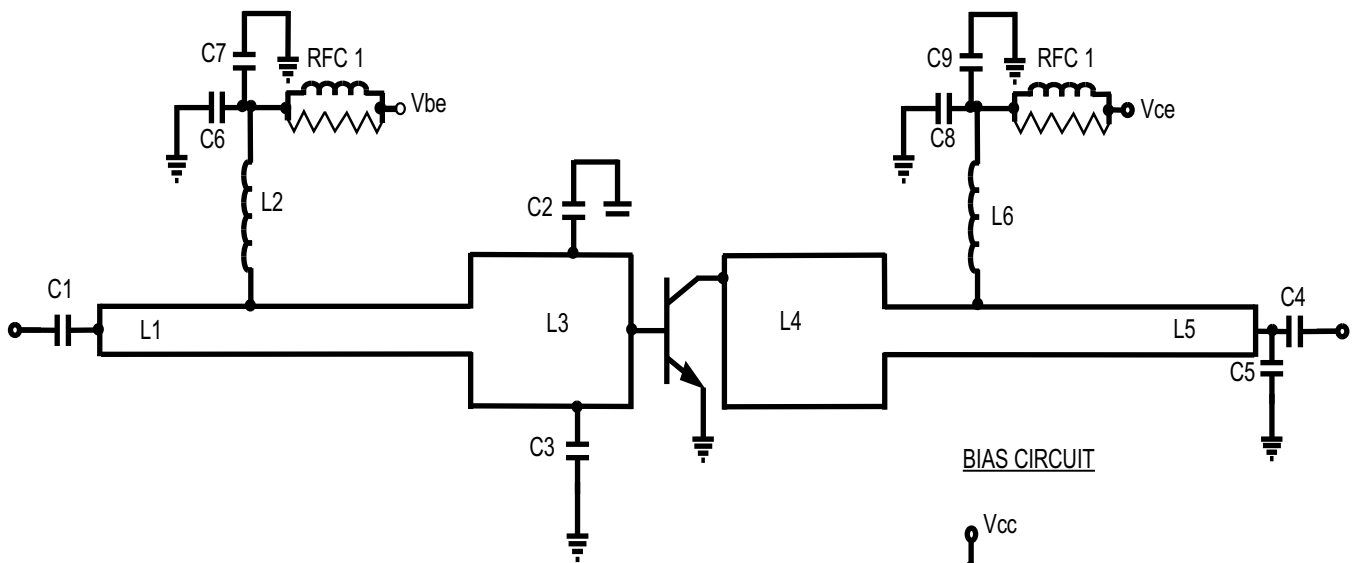
Note 1: F1=860 MHz, F2=863.5 MHz, F3=864.5 Mhz

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

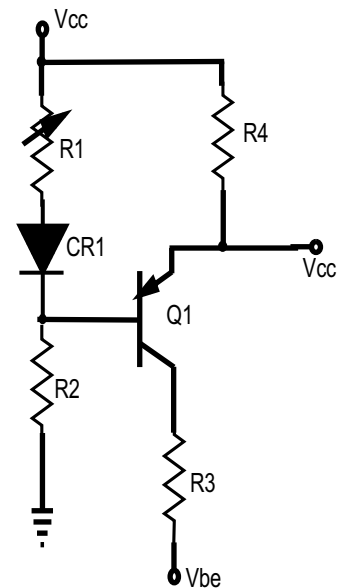
Initial Issue June, 1994

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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