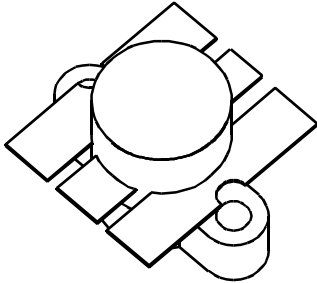




VTV150

15 Watts, 25 Volts
VHF Television - Band III

<p>GENERAL DESCRIPTION The VTV 150 is a COMMON EMITTER transistor capable of providing 15 Watts Peak Sync, Class A, RF Output Power over the band 175 - 225 MHz. It is designed for high efficiency, high linearity, Class A operation. Gold Metalization and Diffused Ballasting are used to provide high reliability and supreme ruggedness.</p>	<p>CASE OUTLINE 55HV, STYLE 2</p> 																		
<p>ABSOLUTE MAXIMUM RATINGS</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Maximum Power Dissipation @ 25°C</td> <td style="text-align: right;">97 Watts</td> </tr> <tr> <td colspan="2">Maximum Voltage and Current</td> </tr> <tr> <td>BVces Collector to Emitter Voltage</td> <td style="text-align: right;">45 Volts</td> </tr> <tr> <td>BVceo Collector to Emitter Voltage</td> <td style="text-align: right;">25 Volts</td> </tr> <tr> <td>BVebo Emitter to Base Voltage</td> <td style="text-align: right;">4.0 Volts</td> </tr> <tr> <td>Ic Collector Current</td> <td style="text-align: right;">8.0 Amps</td> </tr> <tr> <td colspan="2">Maximum Temperatures</td> </tr> <tr> <td>Storage Temperature</td> <td style="text-align: right;">- 65 to + 150°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+ 200°C</td> </tr> </table>	Maximum Power Dissipation @ 25°C	97 Watts	Maximum Voltage and Current		BVces Collector to Emitter Voltage	45 Volts	BVceo Collector to Emitter Voltage	25 Volts	BVebo Emitter to Base Voltage	4.0 Volts	Ic Collector Current	8.0 Amps	Maximum Temperatures		Storage Temperature	- 65 to + 150°C	Operating Junction Temperature	+ 200°C	
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ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out - Pk Sync ¹	F = 175-225 MHz	15	20		Watts
Pin	Power Input	Vcc = 25 Volts		1.9		Watts
Pg	Power Gain	Ic = 2.4 Amps	8.0	9.0		dB
η	Efficiency			33		%
IMD¹	Intermodulation Distortion	Pref = 15 Watts		-52		dB
VSWR₁	Load Mismatch Tolerance	F = 225 MHz			3:1	

LVceo	Collector to Emitter Breakdown	Ic = 25 mA	28			Volts
BVces	Collector to Base Breakdown	Ic = 100mA	45			Volts
BVebo	Emitter to Base Breakdown	Ie = 10mA	4.0			Volts
h_{FE}	Current Gain	Vce = 5 V, I _c = 1 mA	10			
Cob	Output Capacitance	Vcb = 25 V, F = 1 MHz		68		pF
θjc	Thermal Resistance	Tc = 25°C		1.6	1.8	°C/W

Note 1: European test method, Vision = - 8dB, Sideband = - 16dB, Sound = -7 dB

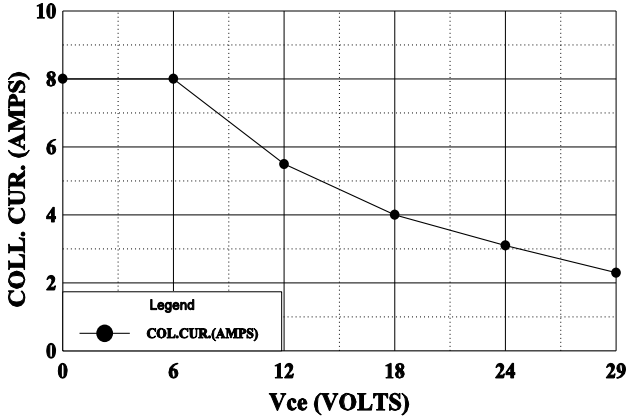
Issue October 1997

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GHZ Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

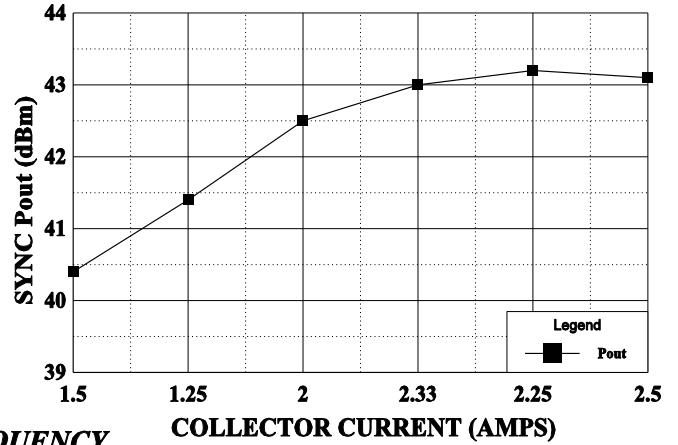
DC SAFE OPERATING AREA

Pin = 1.9 Watt Pk, Vcc = 25 Volts



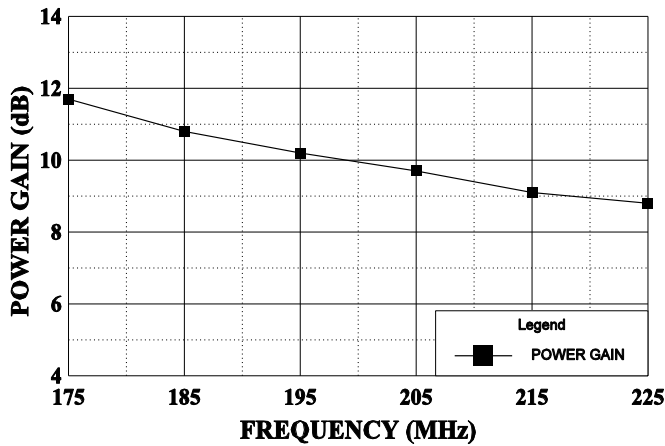
SYNC OUTPUT vs COLLECTOR CURRENT

Vcc - 25V, Frequency 225 MHz



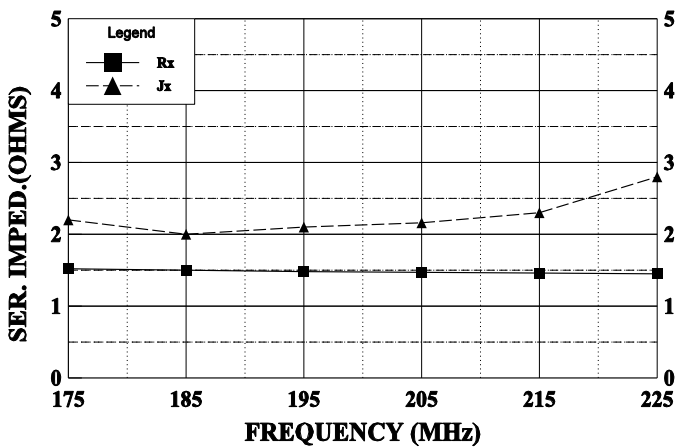
POWER GAIN vs FREQUENCY

Vcc 25V, Pin = 1.9 W



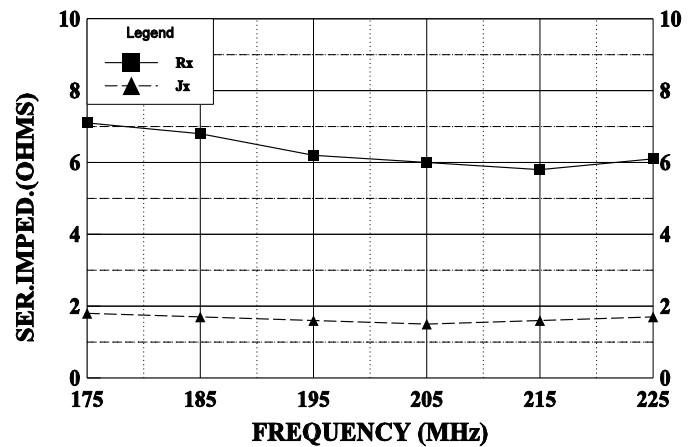
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 25V, Pin = 1.9W

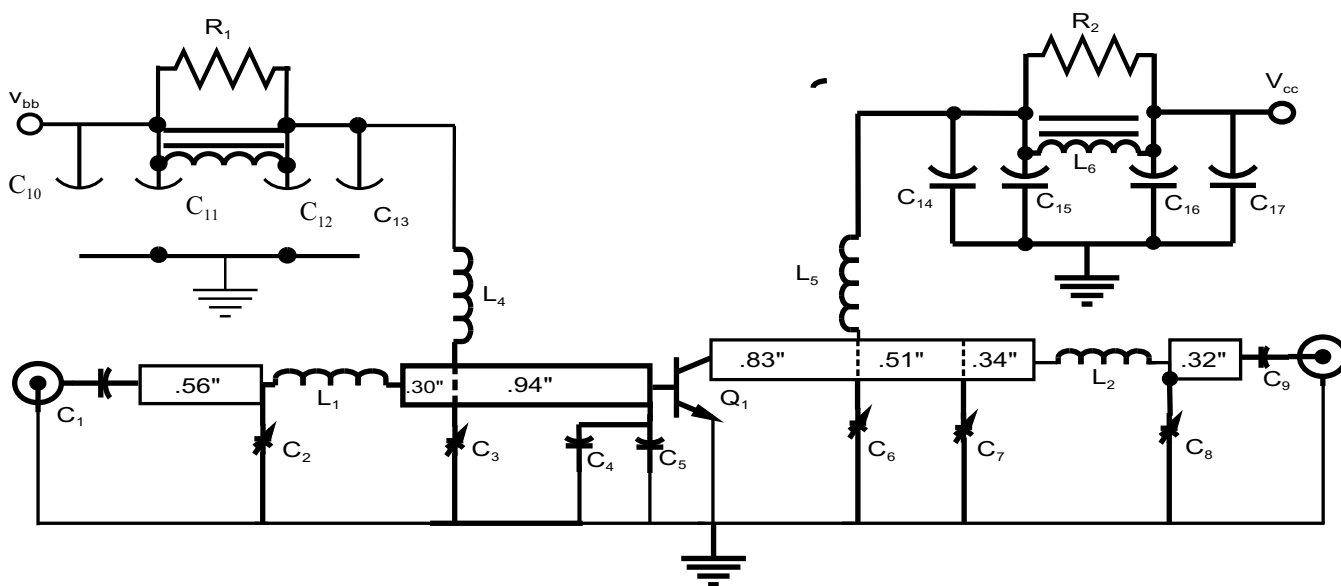


SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 25V, Pin = 1.9W



VTV-150 RF Test Circuit (Tunable 175-225 MHz)
Recommended Bias: $V_{CE}=25\text{ V}$, $I_C=2.4\text{ A}$ (DC Bias not shown)



- C1, C9, C13, C14 470pF ceramic chip
- C2, C3, C8 5-70pF compressed mica
- C4 75pF ceramic chip
- C5 82pF ceramic chip
- C6 2-20pF air tuned
- C7 25-240pF compressed mica
- C10, C17 50 mF electrolytic
- C11, C16 1mF electrolytic
- C12, C15 1000pF ceramic chip

- L1 Cu strap, 1.20" X .12" X .03"
- L2 Cu strap, 1.05" X .12" X .04"
- L3, L6 10 turns #22 wire on F627-8Q1
- L4 4.7 m H
- L5 7 turns #22 wire (0.15" outer diameter)
- R₁, R₂ 15 W 1/2- Watt carbon

BOARD MATERIAL is 1/16" Teflon glass,
2 oz. Cu microstriplines are 50W nominal.