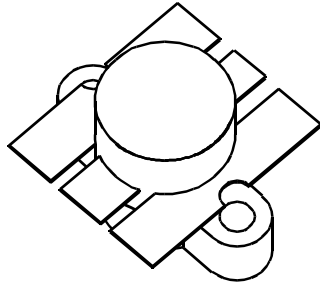


VTV075

7.5 Watts, 25 Volts, Class A
VHF Television - Band III

<p>GENERAL DESCRIPTION</p> <p>The VTV 075 is a COMMON EMITTER transistor capable of providing 7.5 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> <p>Maximum Power Dissipation @ 25°C 53 Watts</p> <p>Maximum Voltage and Current</p> <p>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 4.0 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 ¹	F = 175-225 MHz	7.5	10		Watts
Pin	Power Input	Vcc = 25 Volts				Watts
Pg	Power Gain	Ic = 1.2Amps	10	11.2		dB
η	Efficiency			33		%
IMD	Intermodulation Distortion	Pref = 7.5 Watts		- 52		dB
VSWR	Load Mismatch Tolerance	F = 225 MHz	5:1			

BVceo	Collector to Emitter Breakdown	Ic = 25mA	28			Volts
BVces	Collector to Base Breakdown	Ic = 50 mA	45			Volts
BVebo	Emitter to Base Breakdown	Ie = 10 mA	4.0			Volts
hFE	Current Gain	Vce = 5 V, 500 mA	10			
Cob	Output Capacitance	Vcb = 25 V, F = 1MHz		35		pF
θ_{jc}	Thermal Resistance	Tc = 25°C, IR Scan		3.0	3.3	°C/W

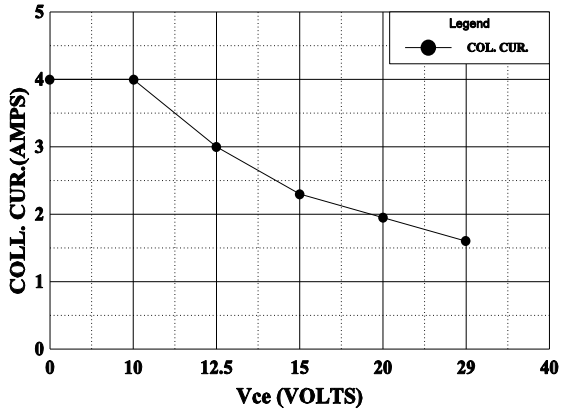
Note 1: European three tone test method: Vision carrier -8dB, sound carrier -7dB, sideband signal -16 dB, 0 dB corresponds to peak sync level.

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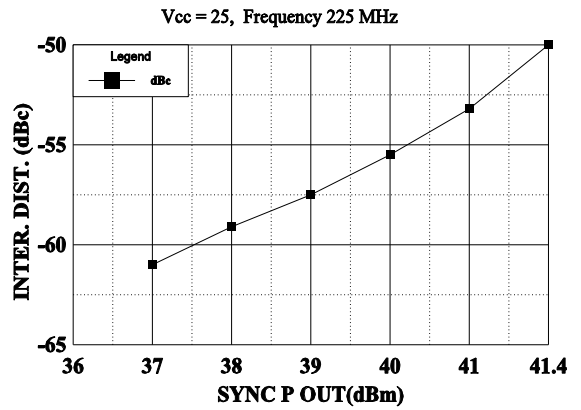
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GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

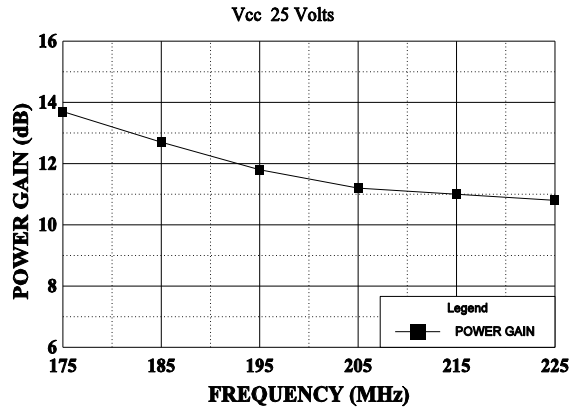
DC SAFE OPERATING AREA



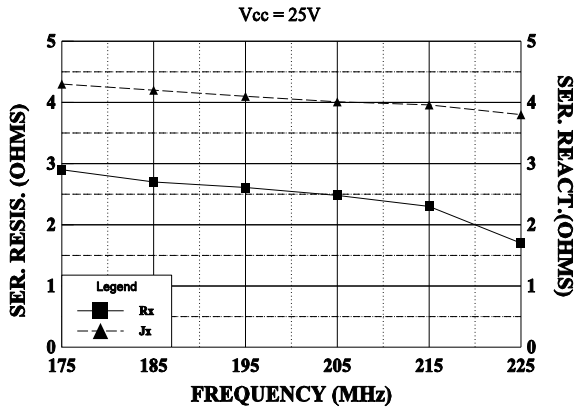
INTERMODULATION DISTORT. vs SYNC Pout



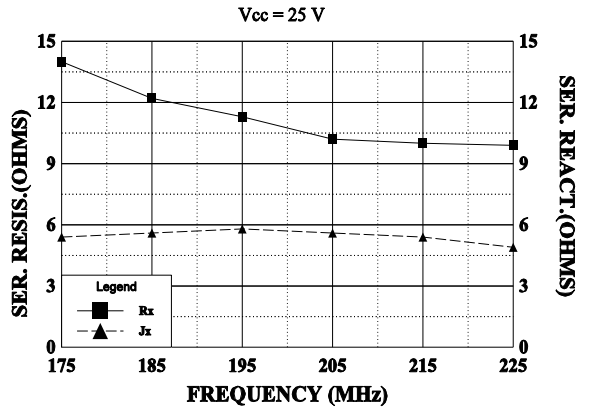
POWER GAIN vs FREQUENCY



SERIES INPUT IMPEDANCE vs FREQUENCY

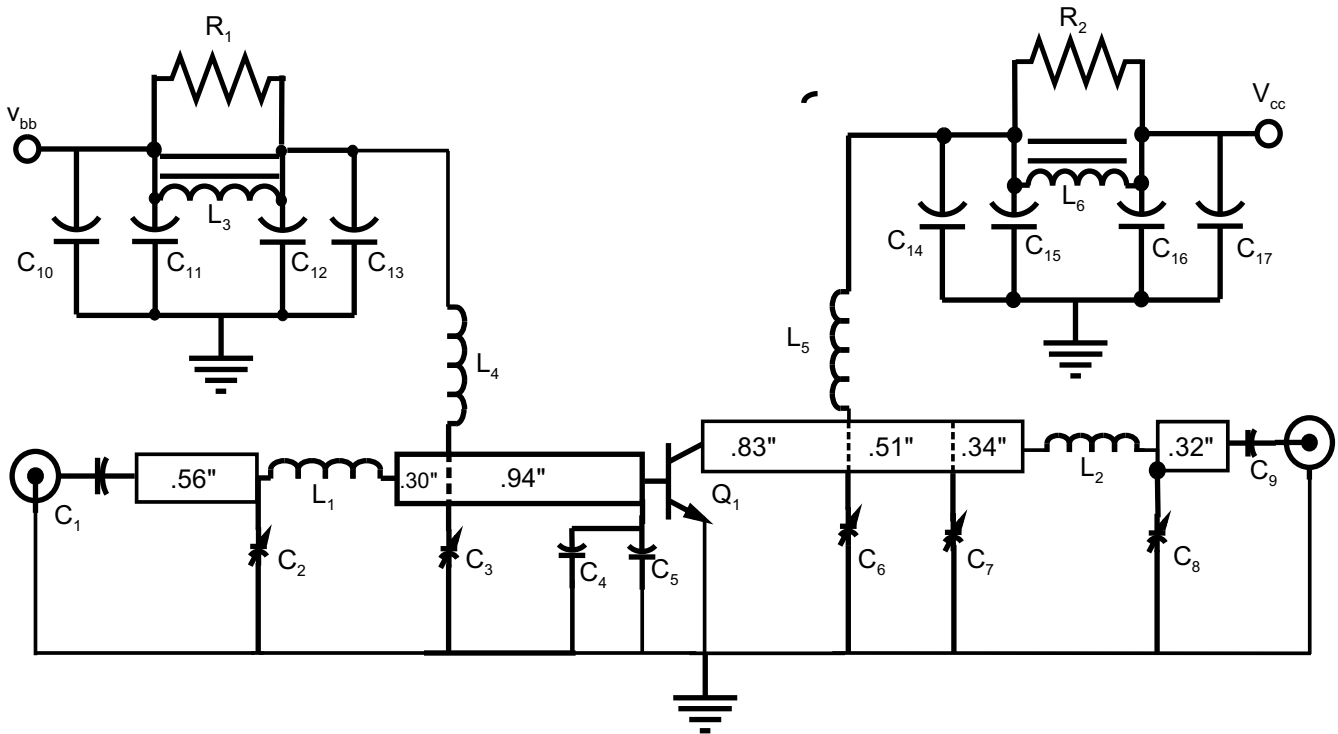


SERIES LOAD IMPEDANCE vs FREQUENCY



VTV-075 RF Test Circuit (Tunable 175-225 MHz)

Recommended Bias: $V_{CE}=25\text{ V}$, $I_C=1.2\text{ A}$ (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 (.15" outer diameter)
 R1, R2 15 Ohm 1/2 Watt Carbon

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