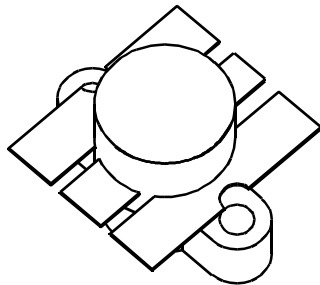


VTV300

30 Watts, 25 Volts
VHF Television - Band III

<p>GENERAL DESCRIPTION The VTV 300 is a COMMON EMITTER transistor capable of providing 30 Watts Peak, 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 1</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C 146 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 14 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	30	35		Watts
Pin	Power Input	Vcc = 25 Volts		5		Watts
Pg	Power Gain	Ic = 5.0 Amps	6	7		dB
η	Efficiency			30		%
IMD¹	Intermodulation Distortion	Pref = 7.5 Watts		-50		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 = 10 mA	4.0			Volts
h_{FE}	Current Gain	Vce = 5 V, 1mA	10	40		
Cob	Output Capacitance	Vcb = 25V, F=1MHz		135		pF
θ_{jc}	Thermal Resistance	Tc = 25°C		1.0	1.2	°C/W

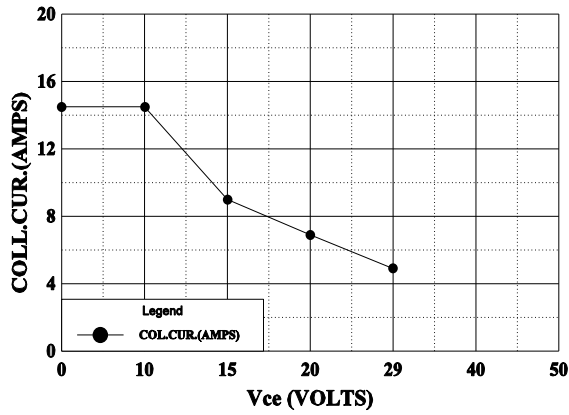
Note 1: European three tone test method: Vision carrier -8dB, sound carrier -7dB, sideband signal -16 dB, 0 dB corresponds to peak sync level.

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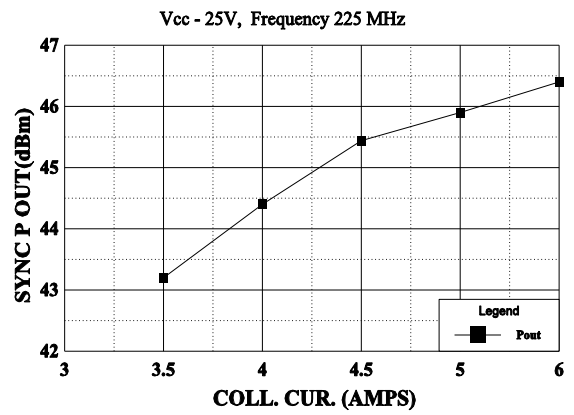
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GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

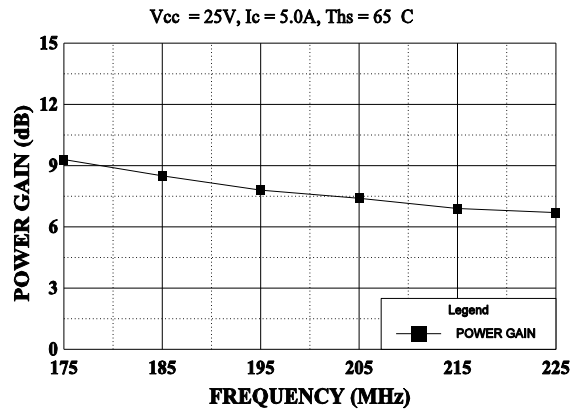
DC SAFE OPERATING AREA



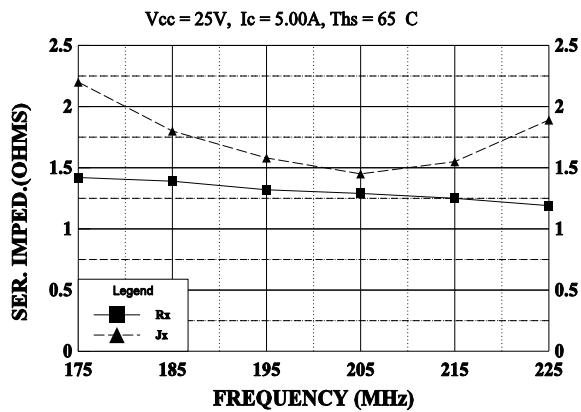
SYNC OUTPUT vs COLLECTOR CURRENT



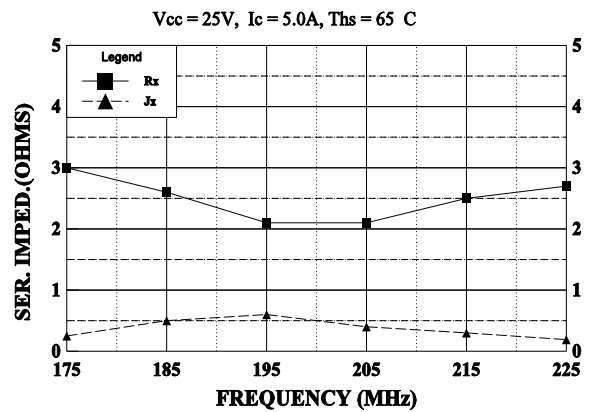
POWER GAIN vs FREQUENCY



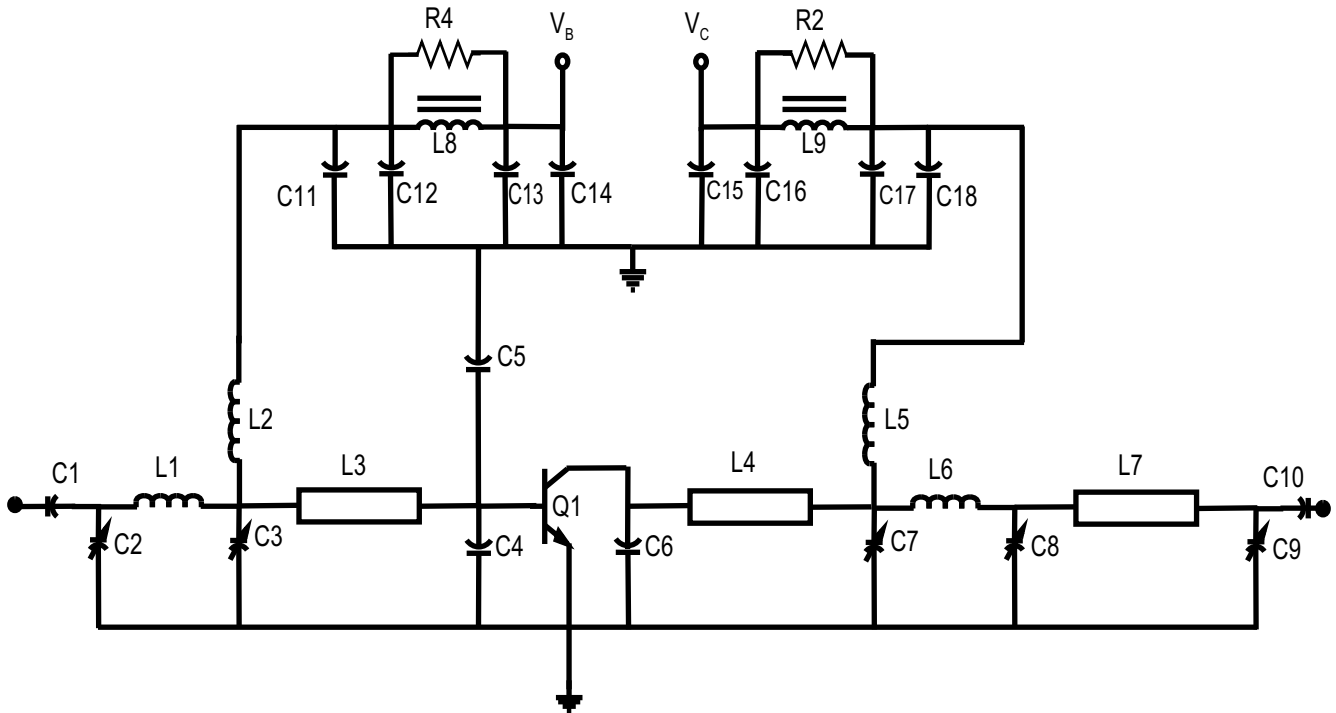
SERIES INPUT IMPEDANCE vs FREQUENCY



SERIES LOAD IMPEDANCE vs FREQUENCY



VTV-300 RF Test Circuit (Tunable 175-225 MHz)
Recommended Bias: $V_{CE}=25V, I_C=5.0 A$ (DC Bias not shown)



C1, C10, C11, C18..... 220pf ceramic chip
 C2..... 5-70pf compression mica
 C3, C7..... 11-170pf compression mica
 C4, C5, C6..... 68 pf ceramic chip
 C8, C9..... 4-40pf compression mica
 C12, C17..... 390 ceramic chip
 C13, C16..... 1mf electrolytic
 C14, C15..... 50 mf electrolytic
 L1..... Copper strap 1.20" x .10" x .025"

L2..... 0.1 nH wire wound
 L3..... 50 W line .925" long
 L4..... 50 W line .465" long
 L5..... 5 turns #24 wire, .12" I.D.
 L6..... Copper strap 1.10" x .15" x .075"
 L7..... 50 W line .960" long
 L8, L9..... 9 turns #22 wire on F627-8 Q1 torroid
 R1, R2..... 15 W 1/2 watt carbon (10%)
 Board Material is 1/16" Teflon Fiberglass.