

VTV1250

125 Watts, 28Volts, Class AB
VHF Television - Band III

GENERAL DESCRIPTION

The VTV 1250 is a COMMON EMITTER transistor capable of providing 125 Watts Peak, Class AB, RF Output Power over the band 175 - 225 MHz. The transistor includes double input and output prematching for full broadband capability. Gold Metalization and Diffused Ballasting are used to provide high reliability and supreme ruggedness.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 250Watts

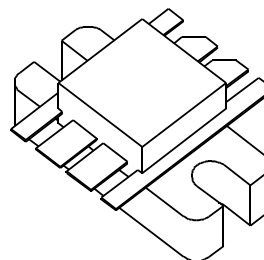
Maximum Voltage and Current

BVces	Collector to Emitter Voltage	65 Volts
BVceo	Collector to Emitter Voltage	28 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	12 Amps

Maximum Temperatures

Storage Temperature	- 65 to + 150°C
Operating Junction Temperature	+ 200°C

CASE OUTLINE 55JT, STYLE 2



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out - Pk Sync	F = 175-225 MHz	125			Watts
Pin	Power Input	Vcc = 28 Volts		8.0	12.5	Watts
Pg	Power Gain	Icq = 0.3Amps		12		dB
η^1	Collector Efficiency	Rated Cond.	60	65		%
VSWR₁	Load Mismatch Tolerance	F = 225 MHz			3:1	

LVceo ²	Collector to Emitter Breakdown	Ic = 50 mA	33			Volts
BVces ²	Collector to Base Breakdown	Ic = 100 mA	65			Volts
BVebo ²	Emitter to Base Breakdown	Ie = 5 mA	4.0			Volts
h _{FE} ²	Current Gain	Vce = 5 V, 1mA	20			
Cob ²	Output Capacitance	Vcb = 28 V, F = 1 MHz		65		pF
θ_{jc}	Thermal Resistance	Tc = 25°C			0.7	°C/W

Note 1: Rated Conditions

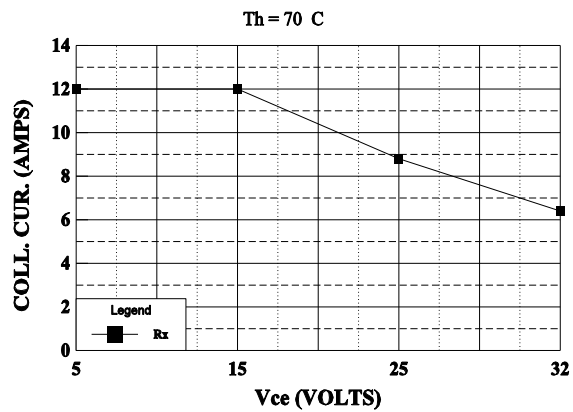
Note 2: Per side

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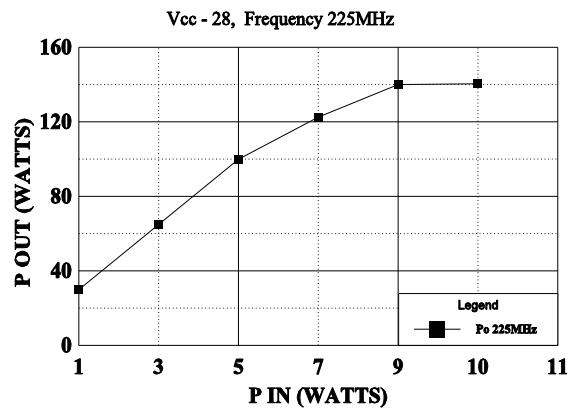
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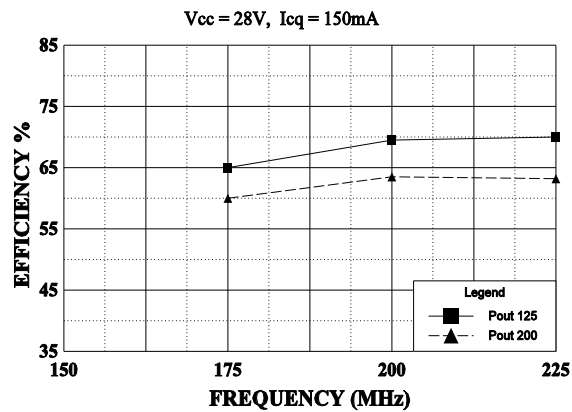
DC SAFE OPERATING AREA

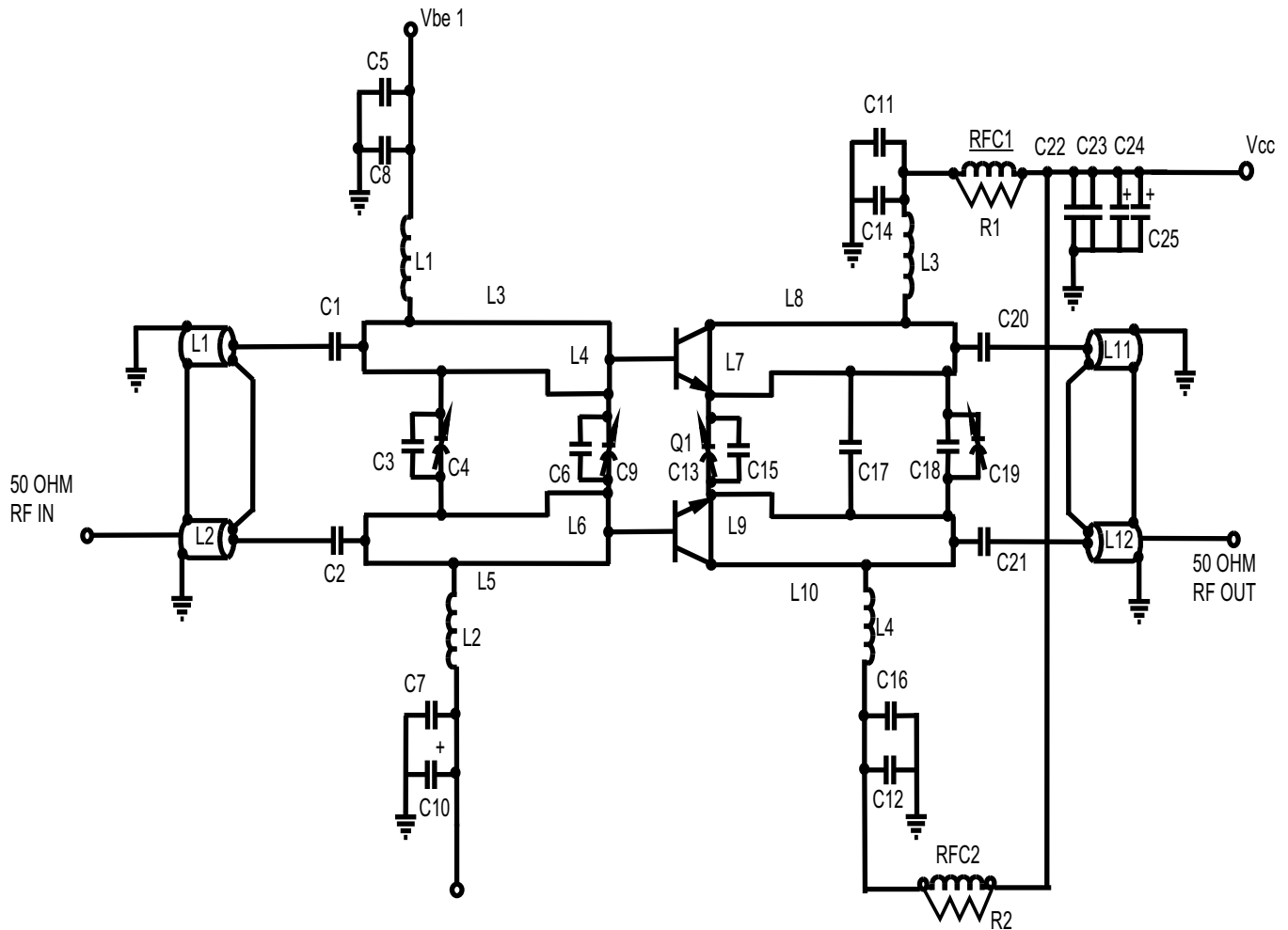


POWER OUTPUT vs POWER INPUT



EFFICIENCY vs FREQUENCY





CAPACITORS

C3,C9,C13,C19= 4.7 pF ATC series A
C1,C2,C20,C21= 4-40 pF Film Diel. trimmer
C4= 33 pF ATC series A
C5,C7= 0.1 mF, 50V disc ceramic
C6= 100 pF ATC series B
C8,C10= 500 pF Uncased Mica
C11,C12= 200 pF Uncased Mica
C14,C16= 390 pF ATC series
C15= 3 X 24pF ATC series A
C17= 2 X 16pF ATC series A
C18= 5.6pF ATC series A
C22= 0.01mF, 50V disc ceramic
C23= 0.1mF, 50V disc ceramic
C24= 1.0mF, 50V disc ceramic
C25= 10mF, 50V disc ceramic

MICROSTRIPLINES

L1,L11= 0.078" X 3.6"
L2,L12= 0.087" X 3.6" 50 Ohm semi rigid cable
L3,L5,L8,L10= 0.055" X 1.1"
L4,L6,L7,L9= 0.084" X 0.4"

TRANSISTORS

Q1= GHz VTV1250

L1,L2..... 10 turns #18 magnet wire
on a 0.15" form
L3,L4..... 6 turns #18 magnet wire
on a 0.325" form

RESISTORS

R1,R2= 150 Ohm, 1/2 W Carbon comp