

1517-20M

20 Watts, 36 Volts, 200µs, 10%

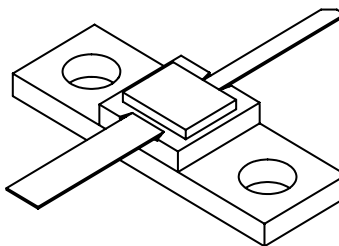
Radar 1480 to 1650 MHz

GENERAL DESCRIPTION

The 1517-20M is an internally matched, COMMON BASE transistor capable of providing 20 Watts of pulsed RF output power at 200 microseconds pulse width, 10% duty factor across the band 1480 to 1650 MHz. This hermetically solder-sealed transistor is specifically designed for upper L-Band radar applications. It utilizes gold metallization and diffused emitter ballasting to provide high reliability and supreme ruggedness.

CASE OUTLINE

55LV-1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @25°C¹ 175 W

Maximum Voltage and Current

Collector to Base Voltage (BV_{CES}) 70 V

Emitter to Base Voltage (BV_{EBO}) 3 V

Collector Current (I_C) 3 A

Maximum Temperatures

Storage Temperature -65 to +200 °C

Operating Junction Temperature +200 °C

FUNCTIONAL CHARACTERISTICS @ 25°C

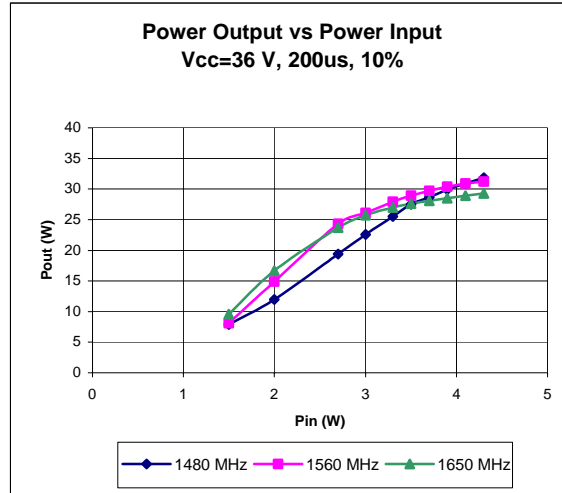
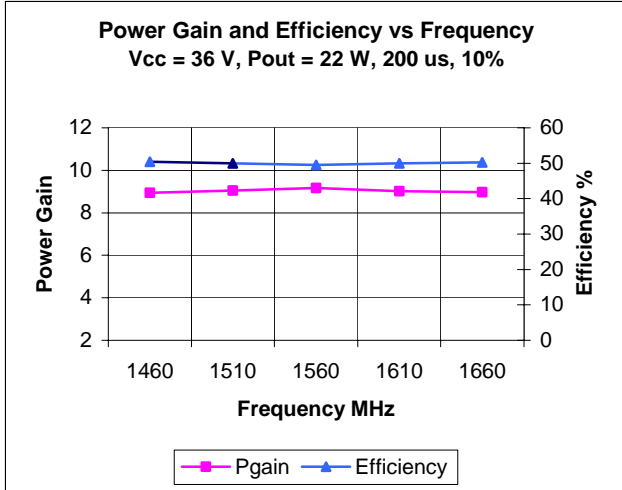
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Output	F = 1480-1650 MHz	20	25	30	W
P _g	Power Gain	V _{cc} = 36 Volts	7.6		9.3	dB
η _c	Collector Efficiency	Pin = 3.5 W	40			%
IR _L	Input Return Loss	Pulse Width = 200µs	9			dB
Pd	Pulse Droop	Duty Factor = 10%			0.5	dB
VSWR ¹	Load Mismatch Tolerance	F=1480 MHz, Pin = 3.5W			3.0:1	

ELECTRICAL CHARACTERISTICS @ 25°C

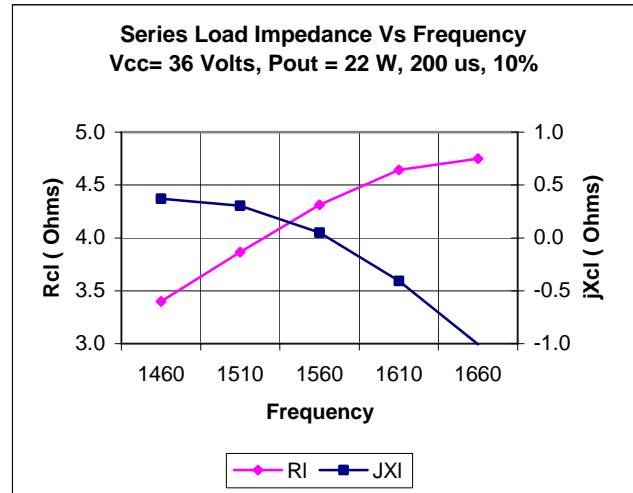
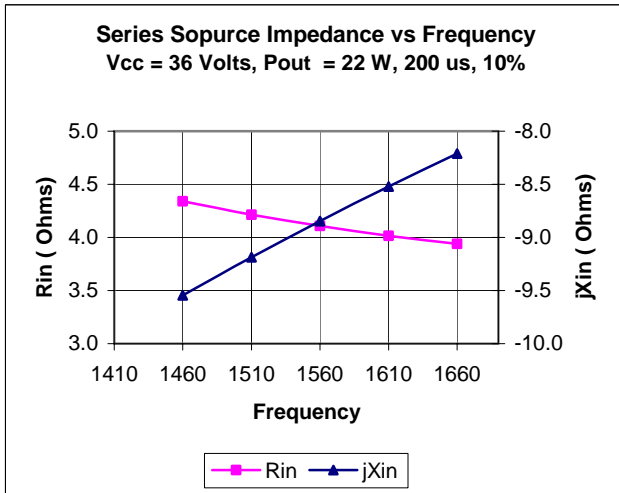
I _{EBO}	Emitter cut-off current	V _{EB} = 3 V			3	mA
BV _{CES}	Collector to Emitter Breakdown	I _C = 15 mA	65			V
h _{FE}	DC – Current Gain	V _{CE} = 5V, I _c = 500 mA	20			
θ _{jc} ¹	Thermal Resistance				1	°C/W

NOTES: 1. Pulse condition of 200µsec, 10%

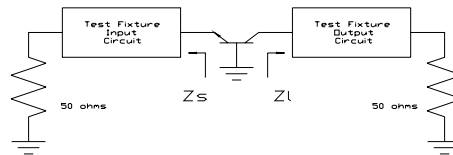
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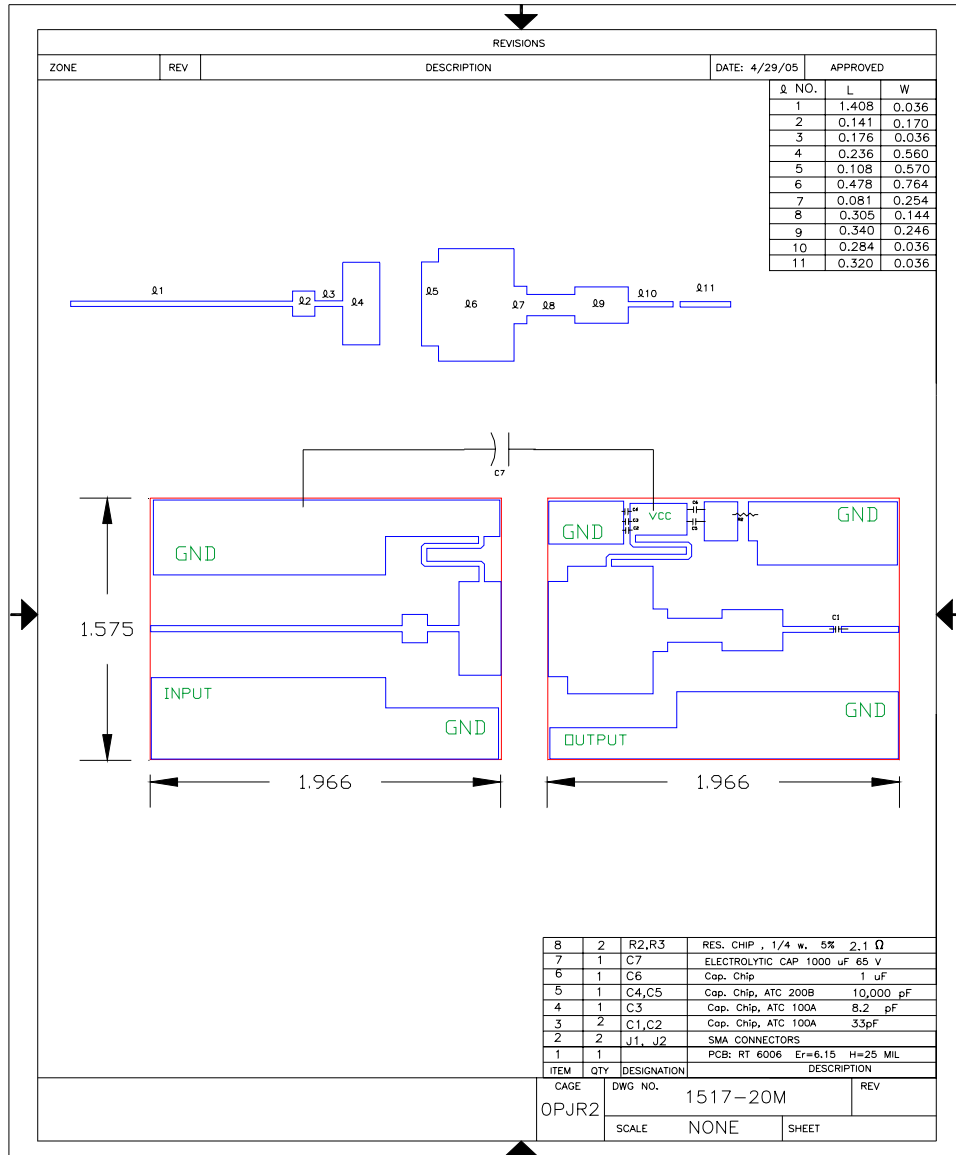
Typical Impedances



IMPEDANCE		
Freq (MHz)	Zs	Zl
1480	4.34 - j 9.55	3.40 + j 0.37
1510	4.22 - j 9.18	3.86 + j 0.31
1560	4.11 - j 8.85	4.31 + j 0.05
1610	4.02 - j 8.52	4.64 - j 0.41
1650	3.94 - j8.21	4.75 - j 1.01



BROADBAND TEST CIRCUIT



Case Outline

