

1517-110M

110 Watts, 40 Volts, 200μs, 10%

Radar 1480 to 1650 MHz

GENERAL DESCRIPTION

The 1517-110M is an internally matched, COMMON BASE transistor capable of providing 110 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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @25°C¹ 350 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) 9 A

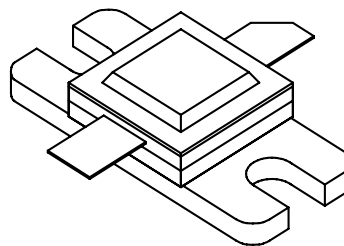
Maximum Temperatures

Storage Temperature -65 to +200 °C

Operating Junction Temperature +200 °C

CASE OUTLINE

55AW-1



FUNCTIONAL CHARACTERISTICS @ 25°C

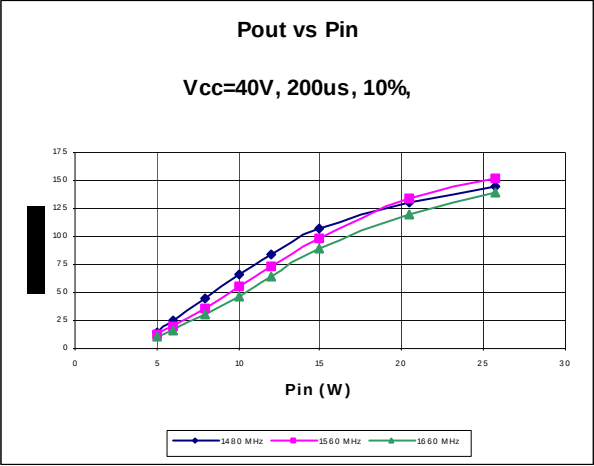
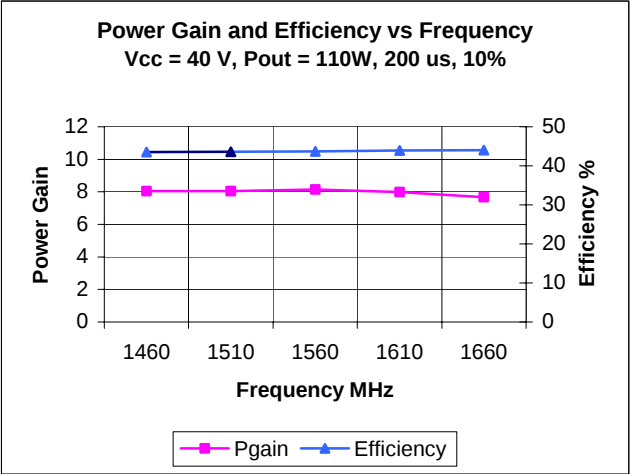
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Output	F = 1480-1650 MHz V _{cc} = 40 Volts Pin = 20.5 W Pulse Width = 200μs Duty Factor = 10%	110	120	150	W
P _g	Power Gain		7.3		8.6	dB
η _c	Collector Efficiency		40			%
IR _L	Input Return Loss		9			dB
Pd	Pulse Droop				0.5	dB
VSWR ¹	Load Mismatch Tolerance	F=1480 MHz, Pin = 20.5 W			3:1	

ELECTRICAL CHARACTERISTICS @ 25°C

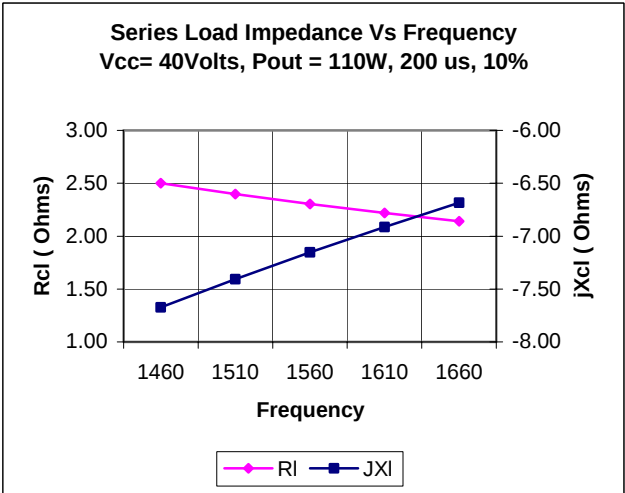
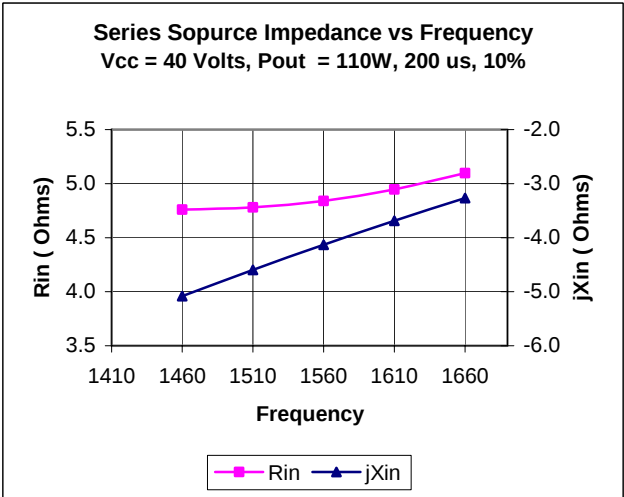
I _{EBO}	Emitter cutoff current	V _{EB} = 3 V			10	mA
BV _{CES}	Collector to Emitter Breakdown	I _C = 40 mA	70			V
h _{FE}	DC – Current Gain	V _{CE} = 5V, I _c = 1A	20			
θ _{jc} ¹	Thermal Resistance				0.5	°C/W

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

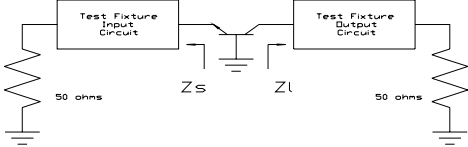
Performance Curves –



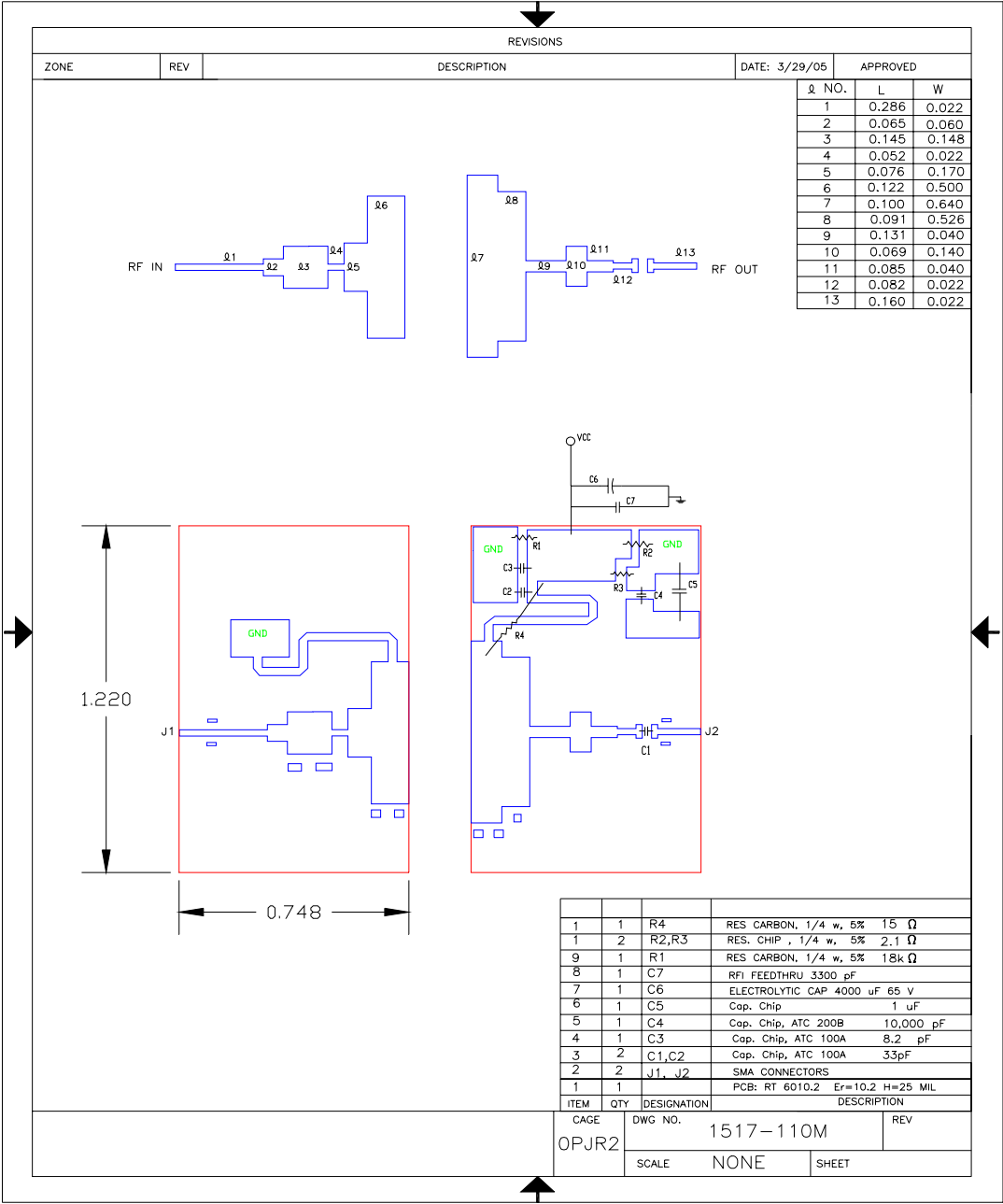
Typical Impedances



IMPEDANCE		
Freq(MHz)	Zs	Zl
1480	4.76 – j 5.08	2.50 – j 7.67
1510	4.78 – j 4.60	2.40 – j 7.40
1560	4.84 – j 4.13	2.31 – j 7.15
1610	4.95 – j 3.69	2.22 – j 6.91
1650	5.10 – j 3.27	2.14 – j 6.68



BROADBAND TEST CIRCUIT



Case Outline

