

1090 MP

90 Watts, 50 Volts, Pulsed
Avionics 1025 - 1150 MHz

<p>GENERAL DESCRIPTION</p> <p>The 1090MP is a COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1025-1150 MHz. The transistor includes input prematch for broadband capability. The device has gold thin-film metallization for proven highest MTTF. Low thermal resistance package reduces junction temperature, extends life.</p>	<p>CASE OUTLINE 55FU, STYLE 1</p>
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C² 250 Watts Peak</p> <p>Maximum Voltage and Current</p> <p>BVces Collector to Emitter Voltage 60 Volts BVebo Emitter to Base Voltage 4.0 Volts Ic Collector Current 6.0 Amps Peak</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	Broadband Power Out	F = 1025-1150 MHz	90	98		Watts
Pin	Power Input	Vcc = 50 Volts			14	Watts
Pg	Broadband Power Gain	PW = 10 μsec	8.0	8.5		d B
η_c	Collector Efficiency	DF = 1%	35	38		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			10:1	

BVebo	Emitter to Base Breakdown	Ie = 1 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ie = 10 mA	65			Volts
Cob	Capacitance Collector to Base	Vcb = 50 V			16	pF
h_{FE}	DC - Current Gain	Ic = 500mA, Vcc = 5V	15		120	
θ_{jc}^1	Thermal Resistance	Tc = 25 °C			0.6	°C/W

Note1: At Rated Power Output and pulse conditions.

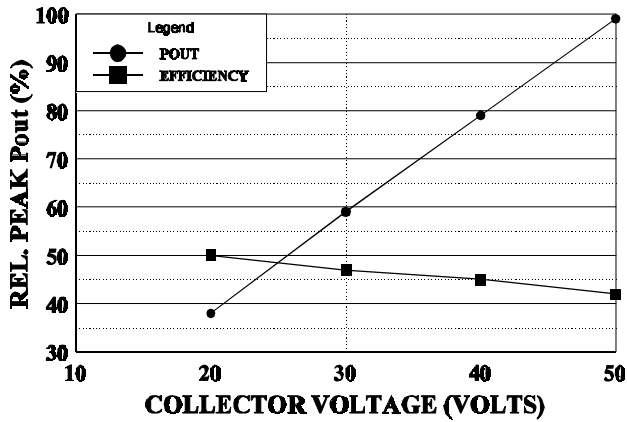
2: Maximum Ratings are for RF Amplifier Operation

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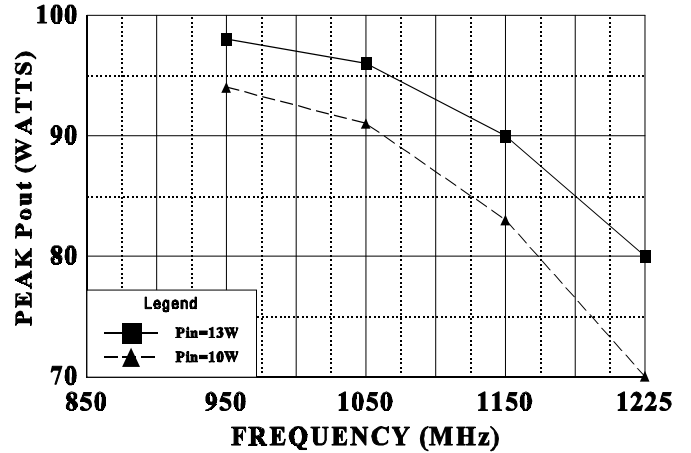
Pout & COL. EFF. vs COL. VOLTAGE

F=1215MHz, PW=10us, DF = 1%, Tc=25C



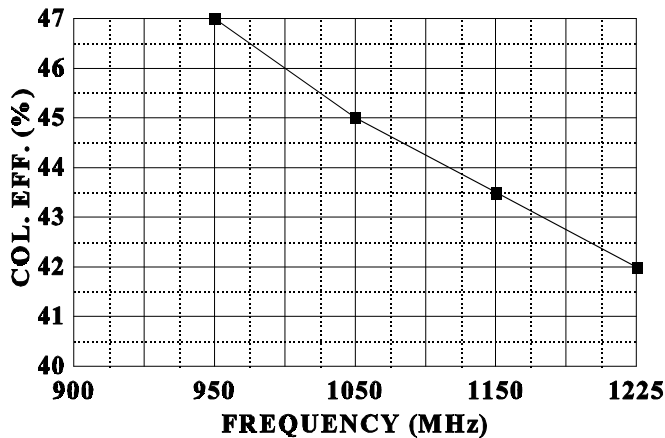
NARROWBAND PEAK Pout vs FREQUENCY

Vcc=50V, PW=10usec, DF = 1%, Tc=25 C



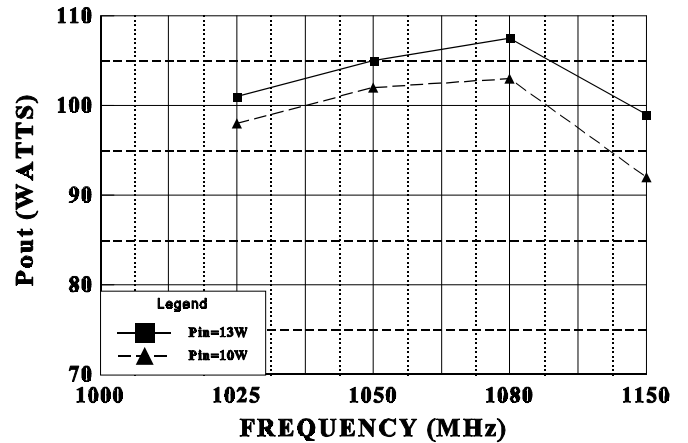
NARROWBAND COL. EFF. vs FREQ.

Vcc=50V, Pin=14 W, 10 usec / 1%



TYPICAL Pout

Vcc=50V, PW=10usec, DF = 1%, Tc =25 C



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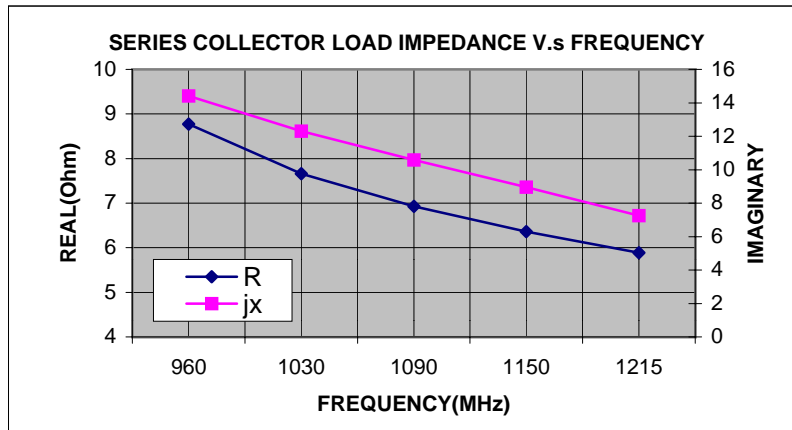
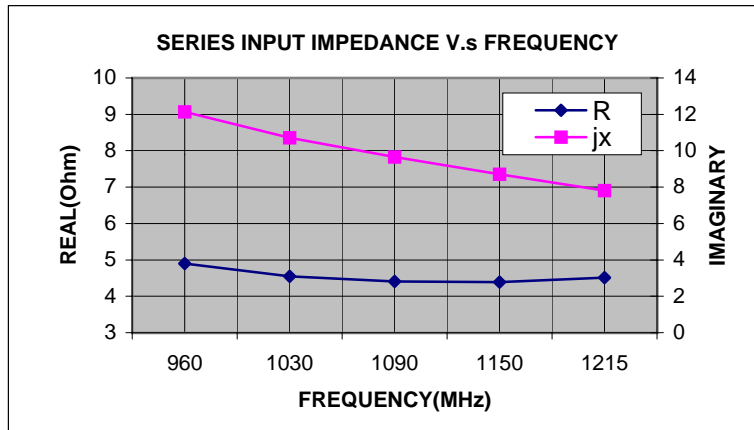
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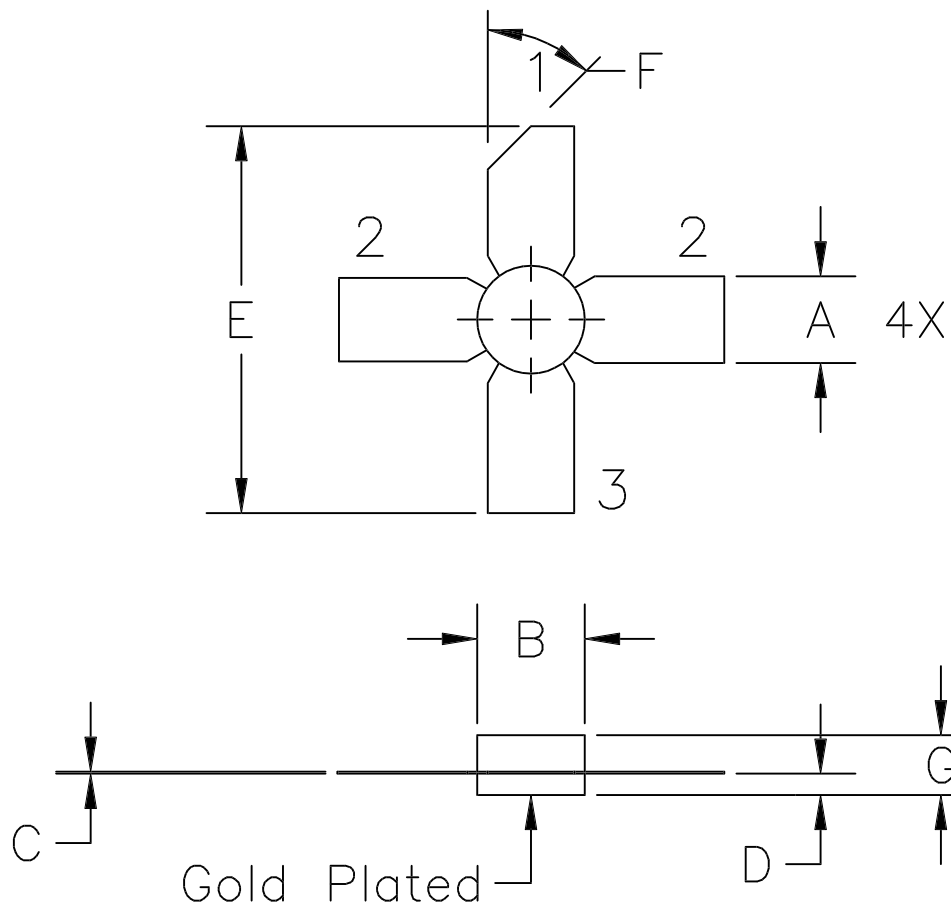
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1090MP

VCB=50V Pout= 90Watts. PW 10uS, DF=1%

	Zin		ZCL	
Frequency	R	jx	R	jx
960	4.9	12.13	8.77	14.41
1030	4.55	10.71	7.66	12.3
1090	4.41	9.65	6.93	10.59
1150	4.39	8.7	6.36	8.95
1215	4.51	7.81	5.89	7.26





STYLE 1:
PIN1 = COLLECTOR
2 = BASE (2X)
3 = EMITTER

STYLE 2:
PIN1 = COLLECTOR
2 = EMITTER (2X)
3 = BASE

DIM	MILLIMETER	TOL	INCHES	TOL
A	5.71	.13	.225	.005
B	7.11 DIA	.13	.280 DIA	.005
C	0.13	.02	.005	.001
D	1.40	.13	.055	.005
E	25.53	.64	1.005	.025
F	45°	5°	45°	5°
G	3.94	REF	.155	REF

