GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

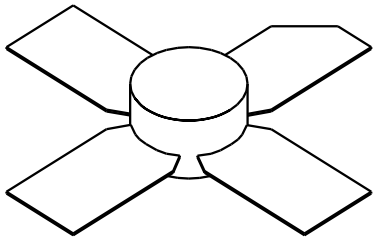
1090 MP

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

GENERAL DESCRIPTION

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.

CASE OUTLINE
55FU, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C[2] 250 Watts Peak

Maximum Voltage and Current

BVces	Collector to Emitter Voltage	60 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	6.0 Amps Peak

Maximum Temperatures

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

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
$\mathbf{h_{FE}}$	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

Issue Aug 1996

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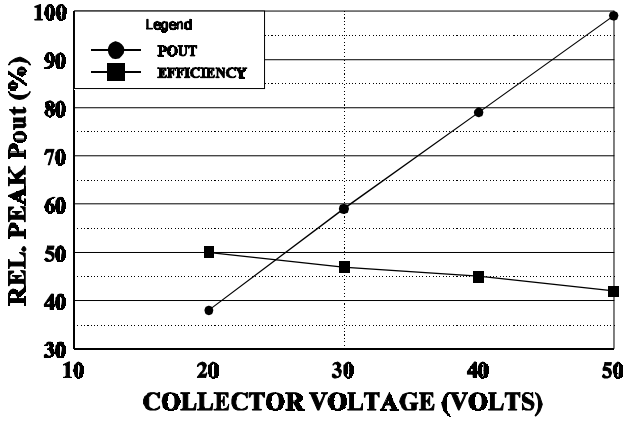
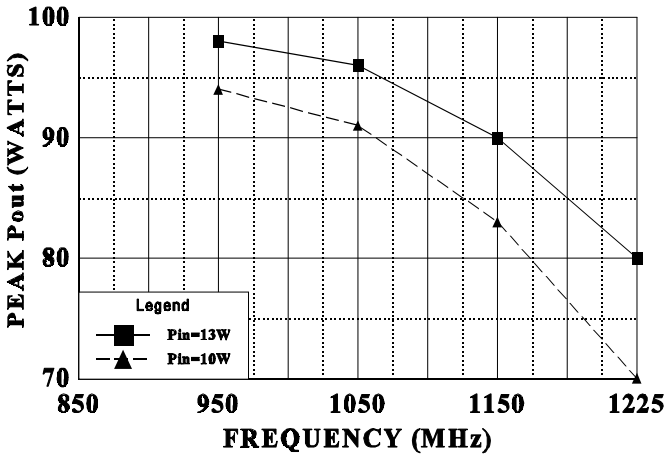
Pout & COL. EFF. vs COL. VOLTAGE

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



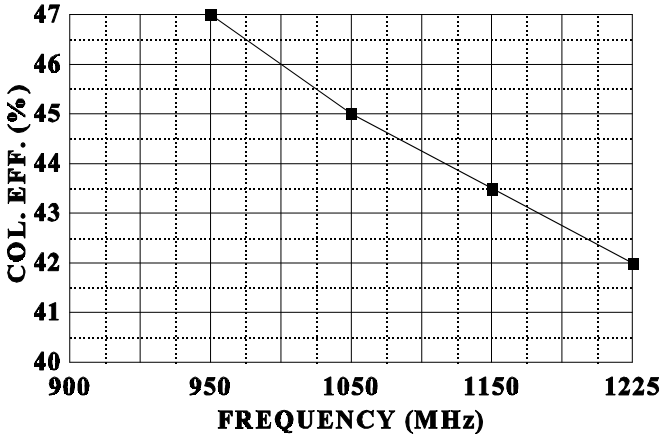
NARROWBAND PEAK Pout vs FREQUENCY

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



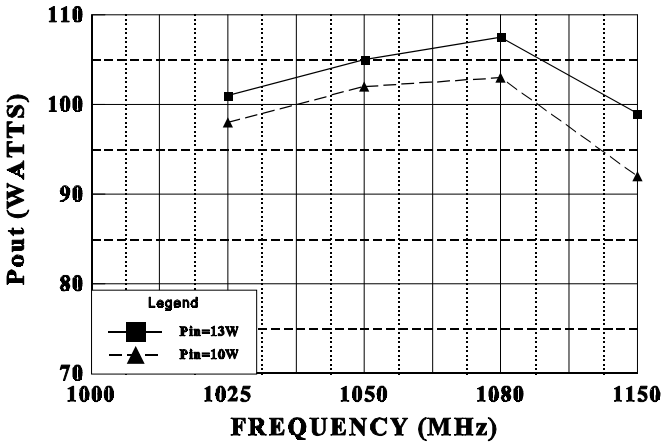
NARROWBAND COL. EFF. vs FREQ.

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



TYPICAL Pout

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



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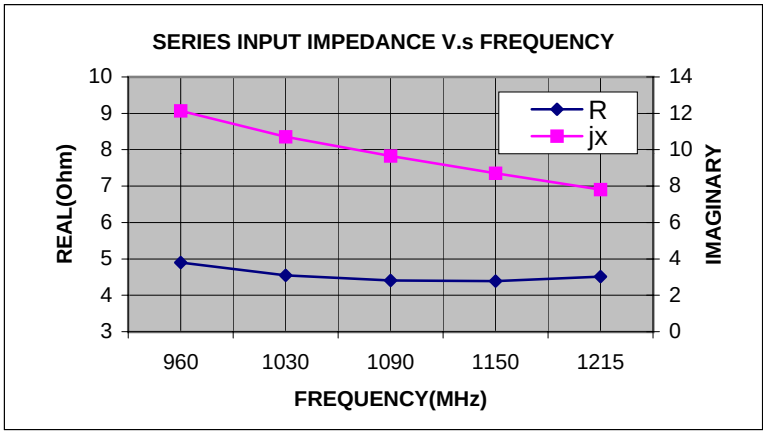
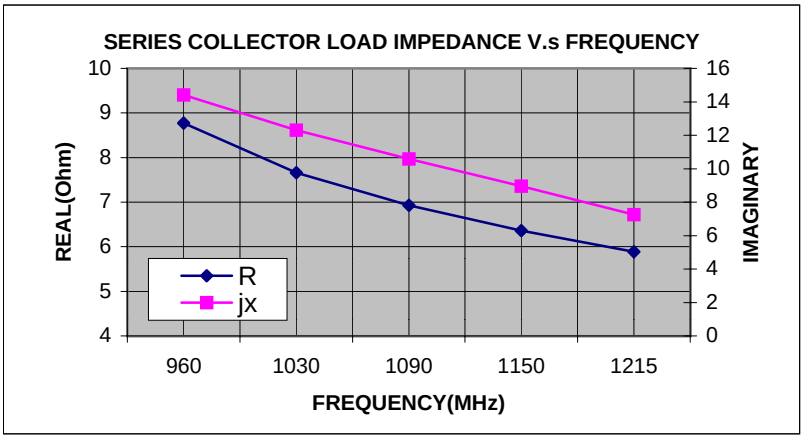
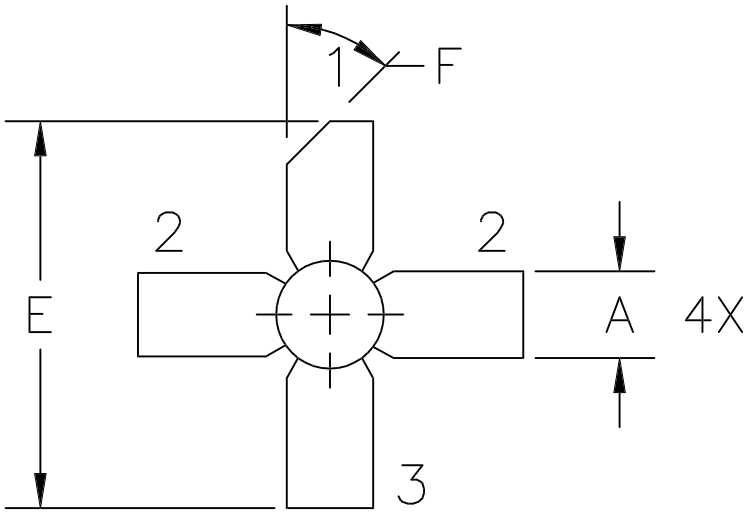
1090MP

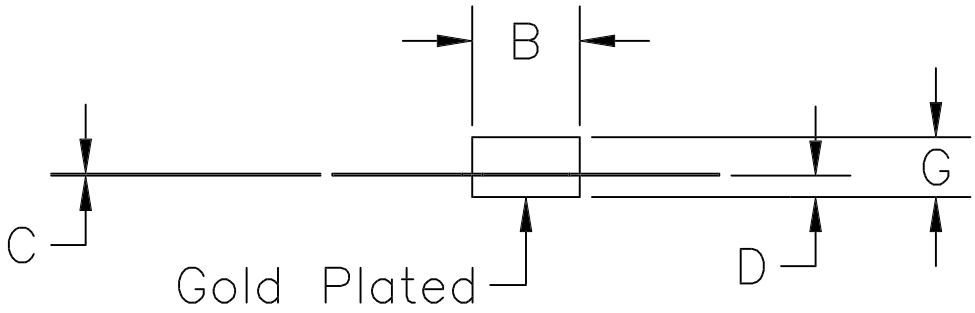
VCB=50V Pout= 90Watts. PW 10uS, DF=1%

	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





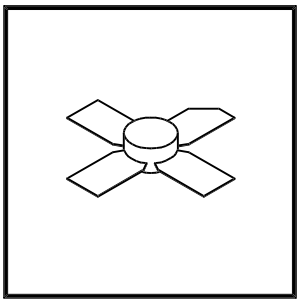




DIM	MILLIMETER	TOL	INCHES	TOL
A	5.71	.13	.225	.005
B	7.11 DIA	.13	.280 DIA	.005
C	0.13	.02	.005	.001
D	1.40	.13	.055	.005
E	25.53	.64	1.005	.025
F	45°	5°	45°	5°
G	3.94	REF	.155	REF

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

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



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DWG NO.
55FU