



# 1090MP

90 Watts, 50 Volts, Class C  
Avionics 1025 - 1150 MHz

<p><b>GENERAL DESCRIPTION</b> The 1090MP is a COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1025-1150 MHz. The device has gold thin-film metallization for proven highest MTTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p><b>CASE OUTLINE</b> <b>55FW-1</b></p>
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C<sup>2</sup> 250 Watts Peak</p> <p><b>Maximum Voltage and Current</b></p> <p>BVces Collector to Emitter Voltage 65 Volts BVebo Emitter to Base Voltage 3.5 Volts Ic Collector Current 6.5 Amps Peak</p> <p><b>Maximum Temperatures</b></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
P <sub>OUT</sub>	Power Out	F = 1025-1150 MHz	90			W
P <sub>IN</sub>	Power Input	V <sub>cc</sub> = 50 Volts			14	W
P <sub>G</sub>	Power Gain	PW = 10 µsec, DF = 1%	8.08	8.5		dB
η <sub>c</sub>	Efficiency			40		%
VSWR <sup>1</sup>	Load Mismatch Tolerance	F = 1090 MHz			20:1	

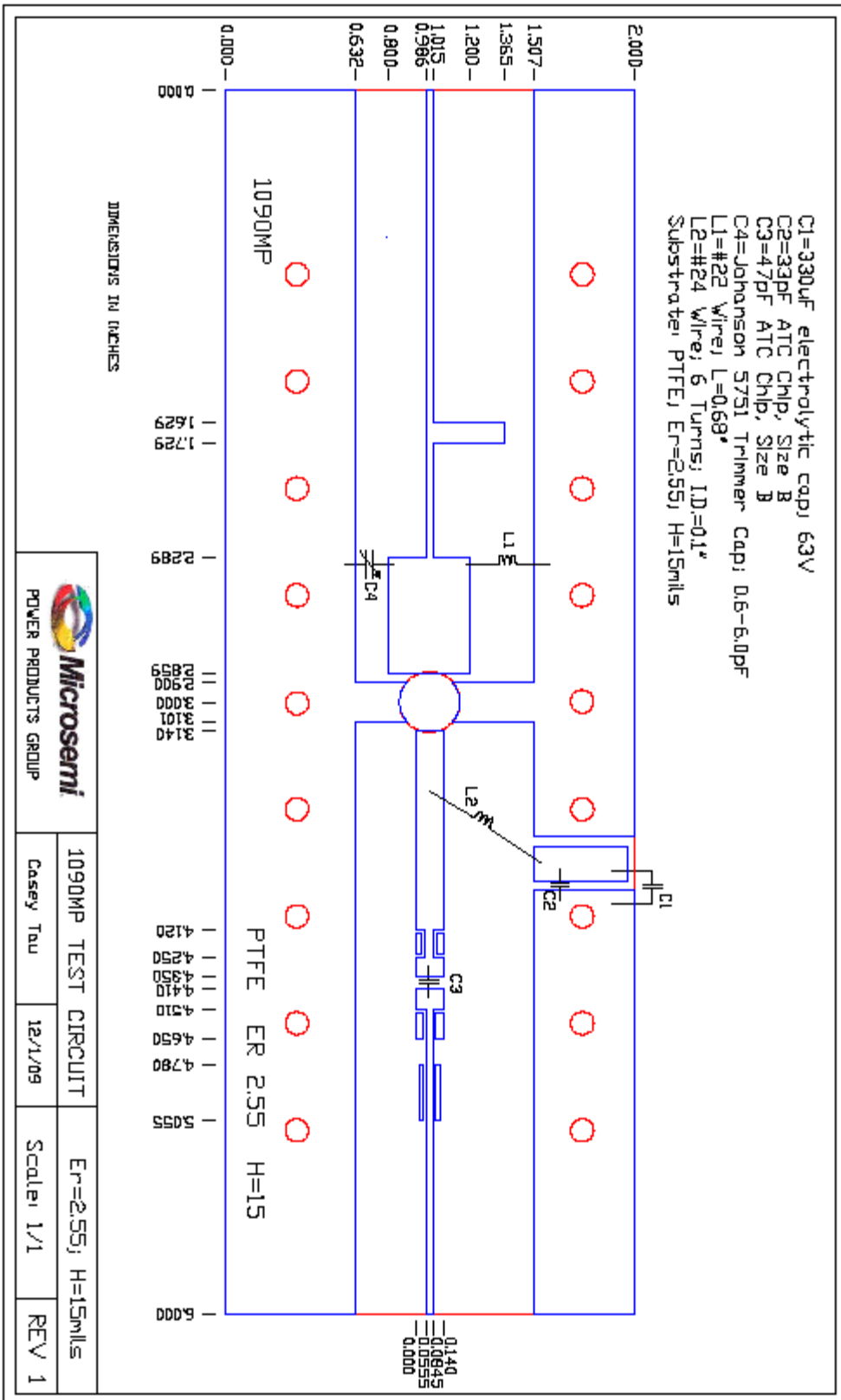
### FUNCTIONAL CHARACTERISTICS @ 25°C

BVebo	Emitter to Base Breakdown	I <sub>e</sub> = 1 mA	3.5			V
BVces	Collector to Emitter Breakdown	I <sub>c</sub> = 10mA	65			V
Hfe	DC Current Gain	V <sub>ce</sub> = 5V, I <sub>c</sub> = 500 mA	15		120	
Cob	Output Capacitance	V <sub>cb</sub> = 50 V, f = 1 MHz		12		pF
θ <sub>jc</sub> <sup>1</sup>	Thermal Resistance				0.6	°C/W

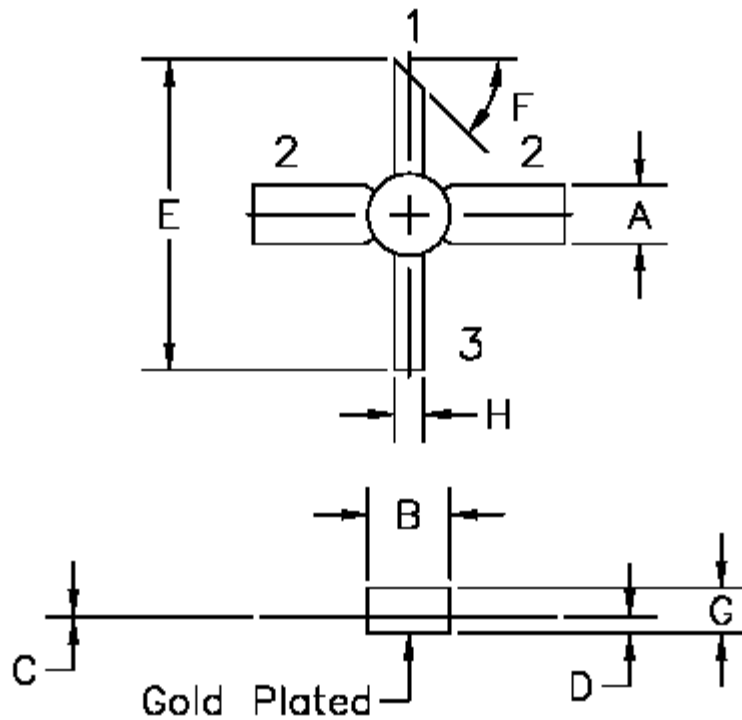
Note 1: At rated pulse conditions

Rev B: Dec 2009

Microsemi reserves the right to change, without notice, the specifications and information contained herein. Visit our web site at [www.microsemi.com](http://www.microsemi.com) or contact our factory direct.



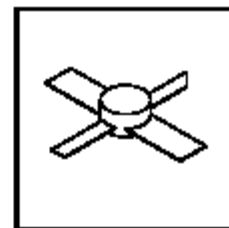
MICROSEMI reserves the right to change, without notice, the specifications and information contained herein. Visit our web site at [www.microsemi.com](http://www.microsemi.com) or contact our factory direct.



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

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

DIM	MILLIMETER	±TOL	INCHES	±TOL
A	5.08	.13	.200	.005
B	7.11 DIA	.13	.280 DIA	.005
C	0.13	.02	.005	.001
D	1.40	.13	.055	.005
E	26.92	.64	1.060	.025
F	45°	5°	45°	5°
G	3.94	REF	.155	REF
H	2.54	.13	.100	.005



ENGR NO.

55FW