



# 0910- 300M

300 Watts - 50 Volts, 150 $\mu$ s, 5%  
Radar 890 - 1000 MHz

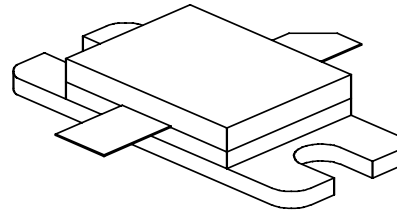
## GENERAL DESCRIPTION

The 0910-300M is an internally matched, COMMON BASE transistor capable of providing 300 Watts of pulsed RF output power at 150  $\mu$ s pulse width, 5% duty factor across the band 900 to 1000 MHz. This hermetically solder-sealed transistor is specifically designed for P-Band radar applications. It utilizes gold metallization and diffused emitter ballasting to provide high reliability and supreme ruggedness.

## ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	600 Watts
<b>Maximum Voltage and Current</b>	
BVces Collector to Emitter Voltage	65 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	20 Amps
<b>Maximum Temperatures</b>	
Storage Temperature	- 65 to + 200°C
Operating Junction Temperature	+ 200°C

## CASE OUTLINE 55KT, STYLE 1



## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	Freq = 890 – 1000 MHz	300		425	Watts
Pg	Power Gain	Vcc = 50 Volts	9.6			dB
$\eta_c$	Collector Efficiency	Pin = 33 Watts	40	45		%
RI	Input Return loss	Pulse Width = 150 $\mu$ s	-9			dB
Droop	Load Mismatch Tolerance	Duty Factor = 5%			0.5	dB
VSWR <sup>1</sup>	Droop				3:1	
VSWRs	Load Mismatch - Stability				2:1	

Note 1: Pulse condition of 150 $\mu$ sec, 10%.

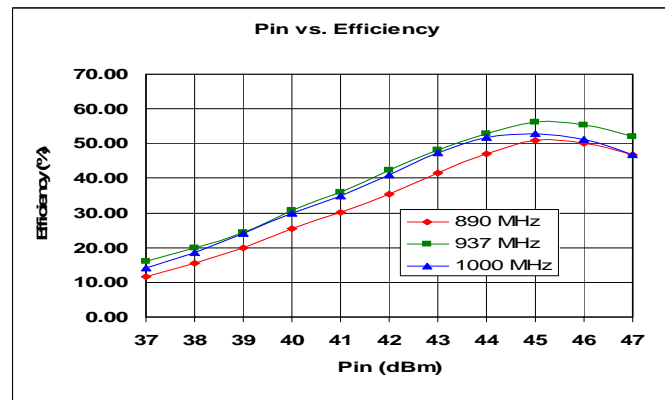
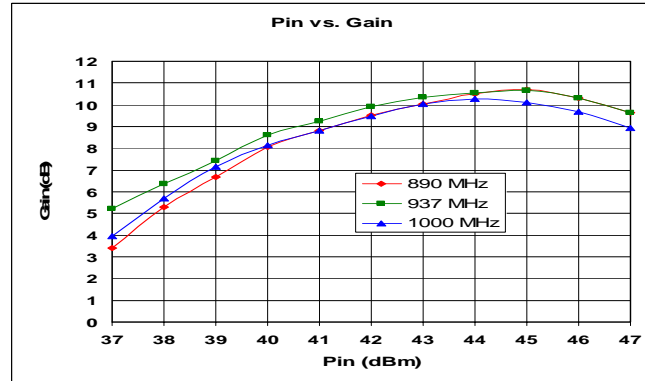
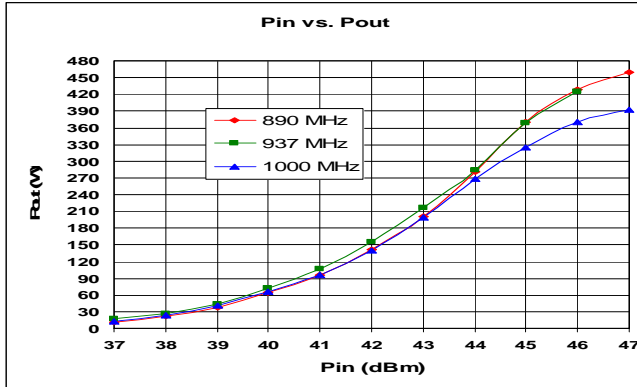
Bvces	Collector to Emitter Breakdown	Ic = 80 mA	65			Volts
Ices	Collector to Emitter Leakage	Vce = 50 Volts			15	mA
$\theta_{jc}$ <sup>1</sup>	Thermal Resistance	Rated Pulse Condition			0.29	°C/W

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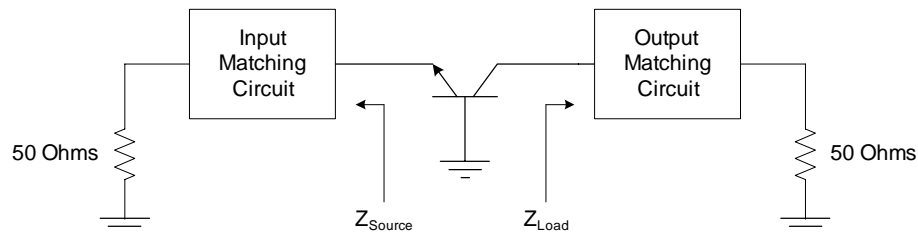


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## Performance Curves



## Impedance Information



Frequencies (MHz)	$Z_{Source} (\Omega)$	$Z_{Load} (\Omega)^2$
890	$1.828 - j3.921$	$1.636 - j2.494$
937	$1.895 - j3.67$	$1.745 - j2.406$
1000	$2.015 - j3.408$	$1.911 - j2.387$

Note 2:  $Z_{Load}$  exclusive of bias circuit



**0910-300M**

**Test Circuit**

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Item	Value	Type
C1, C4	82 pF	Cap. Chip, ATC 100A
C2	1.0 uF	Ceramic Chip Cap (AVX Corp.)
C3	0.01 uF	Ceramic Chip Cap (AVX Corp.)
C5	6800 uF	Cap. 63v, ELECT VZ RADIAL
R1, R2	1 Ω	Chip Resistor
Board: RT/duraid 6010 Er=10.2, H=25mils		
CAGE	DWG NO.	REV
OPJR2	0910-300M	B
SCALE	SHEET	
1:1		

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