



0910- 300M

300 Watts - 50 Volts, 150 μ s, 5%
Radar 890 - 1000 MHz

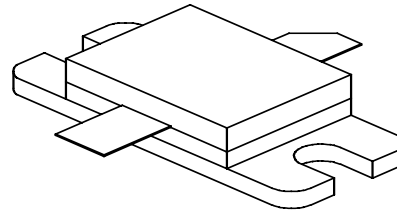
GENERAL DESCRIPTION

The 0910-300M is an internally matched, COMMON BASE transistor capable of providing 300 Watts of pulsed RF output power at 150 μ 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
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	65 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	20 Amps
Maximum Temperatures	
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
η_c	Collector Efficiency	Pin = 33 Watts	40	45		%
RI	Input Return loss	Pulse Width = 150 μ s	-9			dB
Droop	Load Mismatch Tolerance	Duty Factor = 5%			0.5	dB
VSWR ¹	Droop				3:1	
VSWRs	Load Mismatch - Stability				2:1	

Note 1: Pulse condition of 150 μ sec, 10%.

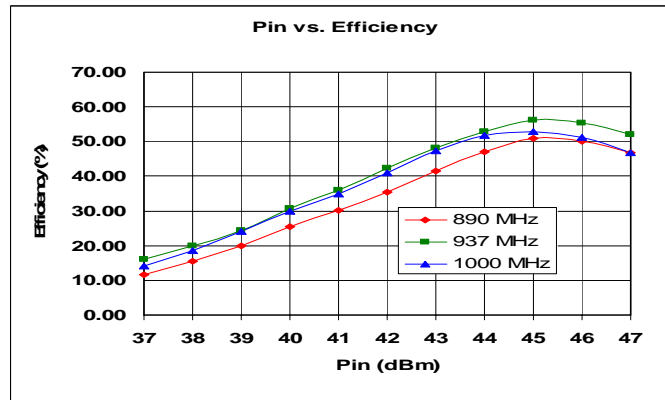
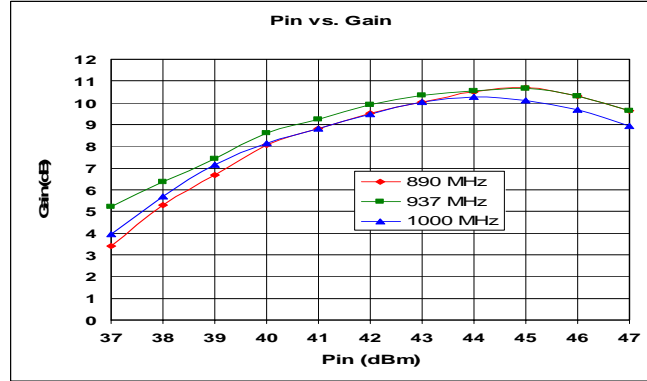
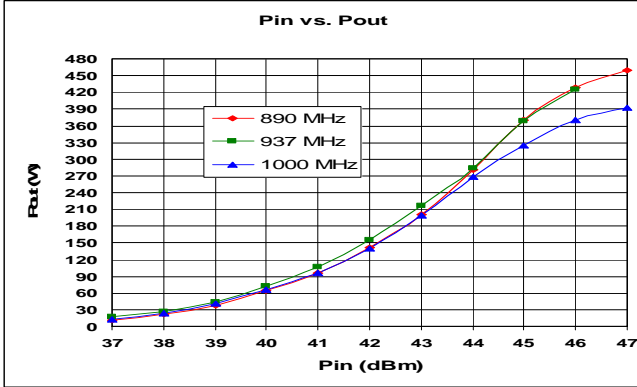
Bvces	Collector to Emitter Breakdown	Ic = 80 mA	65			Volts
Ices	Collector to Emitter Leakage	Vce = 50 Volts			15	mA
θ_{jc} ¹	Thermal Resistance	Rated Pulse Condition			0.29	°C/W

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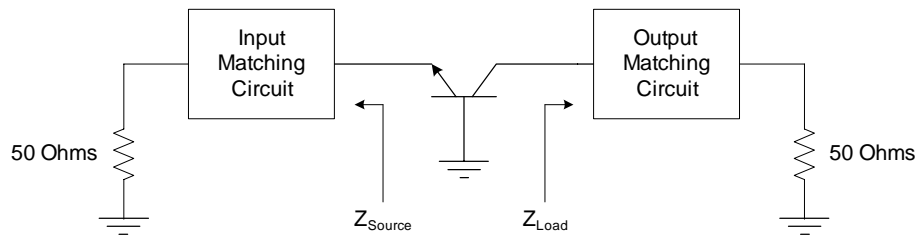


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Performance Curves



Impedance Information



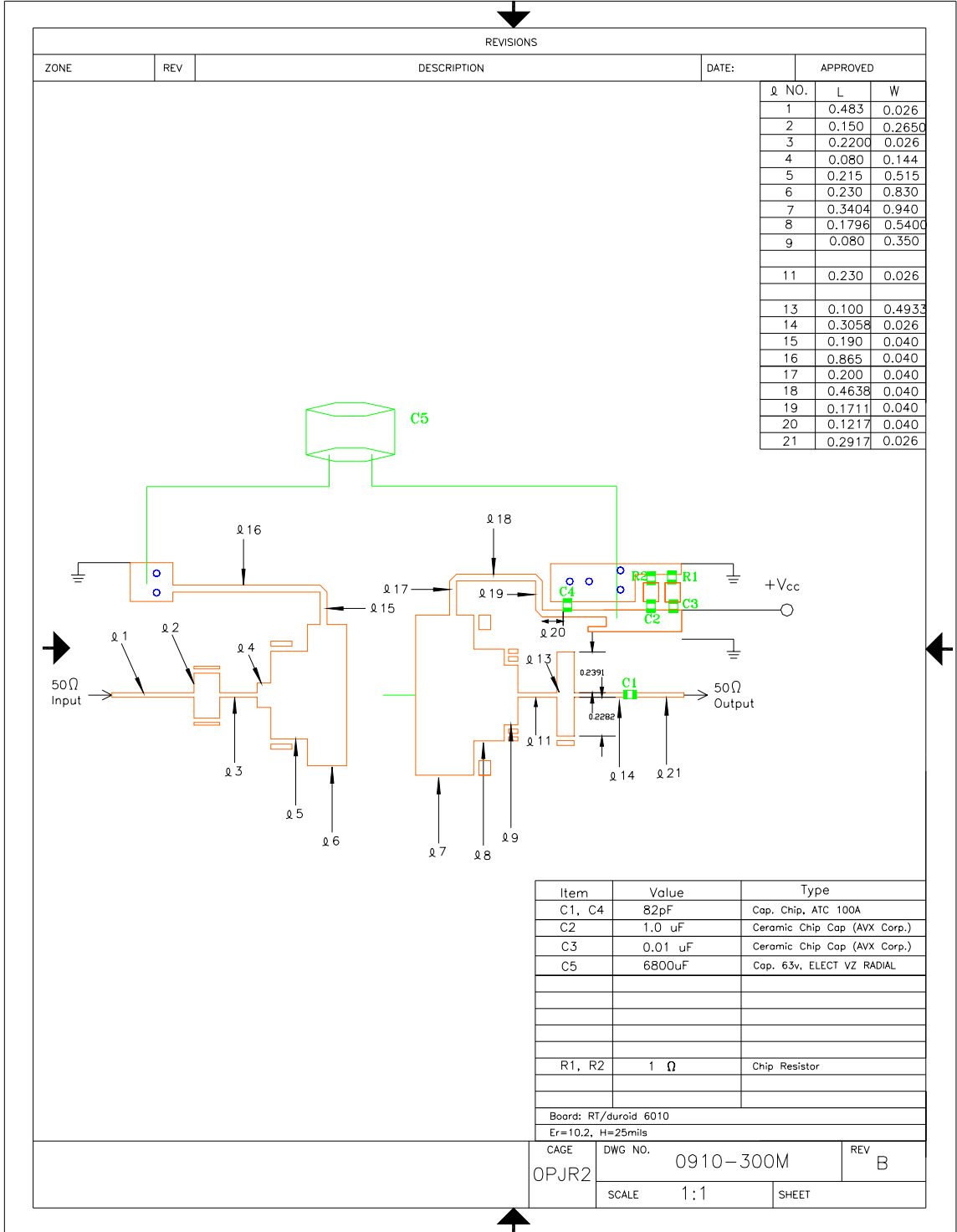
Frequencies (MHz)	$Z_{Source} (\Omega)$	$Z_{Load} (\Omega)^2$
890	1.828 - j3.921	1.636-j2.494
937	1.895 - j3.67	1.745 - j2.406
1000	2.015 - j3.408	1.911 - j2.387

Note 2: Z_{Load} exclusive of bias circuit



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Test Circuit





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REVISIONS																																																																										
ZONE	REV	DESCRIPTION	DATE	APPROVED																																																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DIM</th> <th>MILLIMETER</th> <th>± TOL</th> <th>INCHES</th> <th>±TOL</th> </tr> </thead> <tbody> <tr><td>A</td><td>10.16</td><td>.13</td><td>.400</td><td>.005</td></tr> <tr><td>B</td><td>20.32</td><td>.76</td><td>.800</td><td>.030</td></tr> <tr><td>C</td><td>9.78</td><td>.13</td><td>.385</td><td>.005</td></tr> <tr><td>D</td><td>12.70</td><td>.13</td><td>.500</td><td>.005</td></tr> <tr><td>E</td><td>1.52R</td><td>.13</td><td>.060R</td><td>.005</td></tr> <tr><td>F</td><td>1.52R</td><td>.13</td><td>.060R</td><td>.005</td></tr> <tr><td>G</td><td>3.81</td><td>.13</td><td>.150</td><td>.005</td></tr> <tr><td>H</td><td>5.84</td><td>MAX</td><td>.230</td><td>MAX</td></tr> <tr><td>I</td><td>1.52</td><td>.13</td><td>.060</td><td>.005</td></tr> <tr><td>J</td><td>17.78</td><td>.13</td><td>.700</td><td>.005</td></tr> <tr><td>K</td><td>22.86</td><td>.13</td><td>.900</td><td>.005</td></tr> <tr><td>M</td><td>3.05</td><td>.13</td><td>.120</td><td>.010</td></tr> <tr><td>N</td><td>0.08</td><td>+ .05 - .03</td><td>.003</td><td>+ .002 - .001</td></tr> </tbody> </table>					DIM	MILLIMETER	± TOL	INCHES	±TOL	A	10.16	.13	.400	.005	B	20.32	.76	.800	.030	C	9.78	.13	.385	.005	D	12.70	.13	.500	.005	E	1.52R	.13	.060R	.005	F	1.52R	.13	.060R	.005	G	3.81	.13	.150	.005	H	5.84	MAX	.230	MAX	I	1.52	.13	.060	.005	J	17.78	.13	.700	.005	K	22.86	.13	.900	.005	M	3.05	.13	.120	.010	N	0.08	+ .05 - .03	.003	+ .002 - .001
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