

# PHA2729-240M



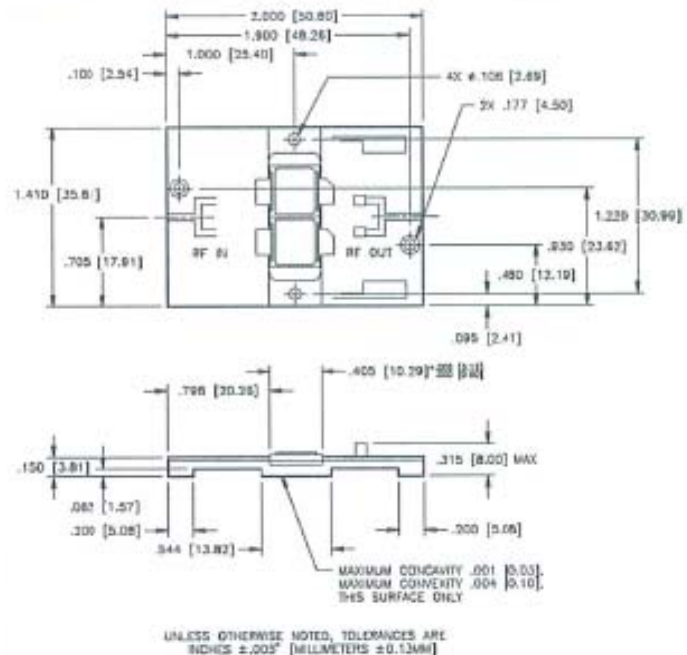
**Radar Pulsed Power Module, 240W**  
**2700MHz to 2900MHz, 100μS Pulse, 10% Duty**

Released—11-04-2002

## Features

- In-phase combined pulsed power transistors
- Input and output matched to 50 Ohms
- Soft substrate circuit board
- Nickel plated copper flange
- Easily combined for high power transmitters
- MTTF>1x10<sup>6</sup> hrs at T<sub>flange</sub>=45°C

## Product Image



## ABSOLUTE MAXIMUM RATINGS AT 25°C

Parameter	Symbol	Rating	Units
Supply Voltage	V <sub>CC</sub>	40	V
Input Power	P <sub>in</sub>	55	Wpk
Output Power	P <sub>out</sub>	325	Wpk
Thermal Resistance	θ <sub>JC</sub>	0.35	°C/W
Total Power Dissipation	P <sub>D</sub>	500	W
Operating Case Temp.	T <sub>C</sub>	-30 to +100	°C
Storage Temp.	T <sub>STG</sub>	-40 to +125	°C

## ELECTRICAL CHARACTERISTICS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Input Power	P <sub>IN</sub>	-	44	Wpk	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
Collector Current	I <sub>C</sub>	-	16.97	A	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
Input Return Loss	RL	10	-	dB	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
Pulse Amplitude Droop	Droop	-	0.7	dB	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
2nd Harmonic	2fc	-	-20	dB	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
Insertion Phase Deviation	Δφ	-20	+20	Degrees	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	V <sub>CC</sub> = 36V, P <sub>out</sub> = 240Wpk, F = 2.7, 2.8, 2.9GHz
Overdrive/Load Mismatch Tolerance	OD/ VSWR-T	-	2:1	-	V <sub>CC</sub> = 36V, P <sub>in</sub> = (P <sub>in</sub> @P <sub>out</sub> = 240Wpk) + 0.6dB, F = 2.7, 2.8, 2.9GHz

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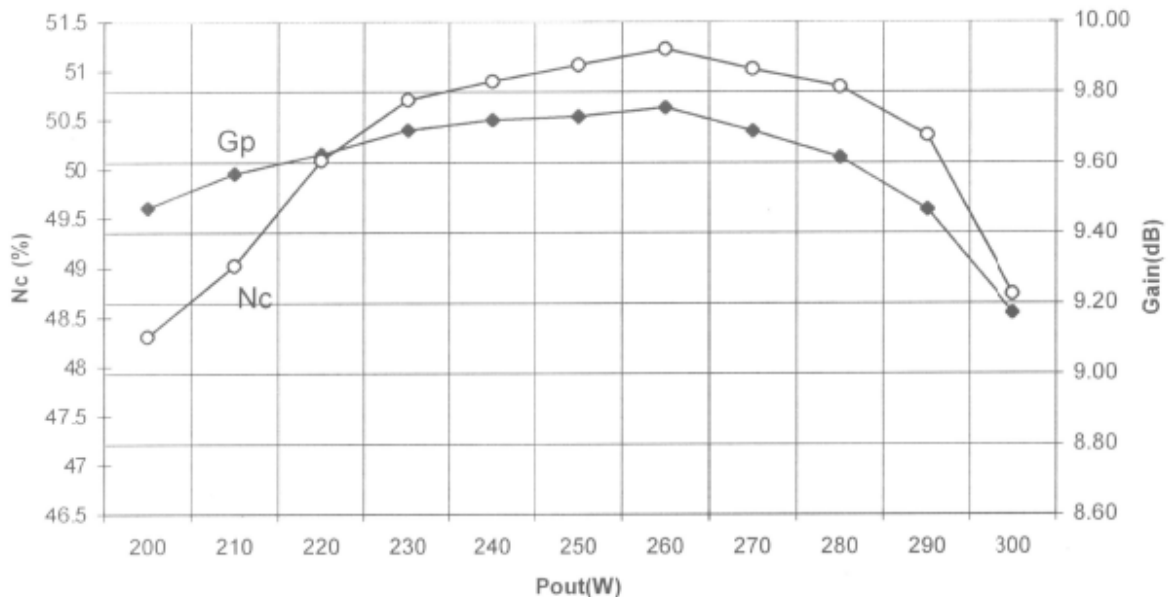
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2700MHz to 2900MHz, 100μS Pulse, 10% Duty

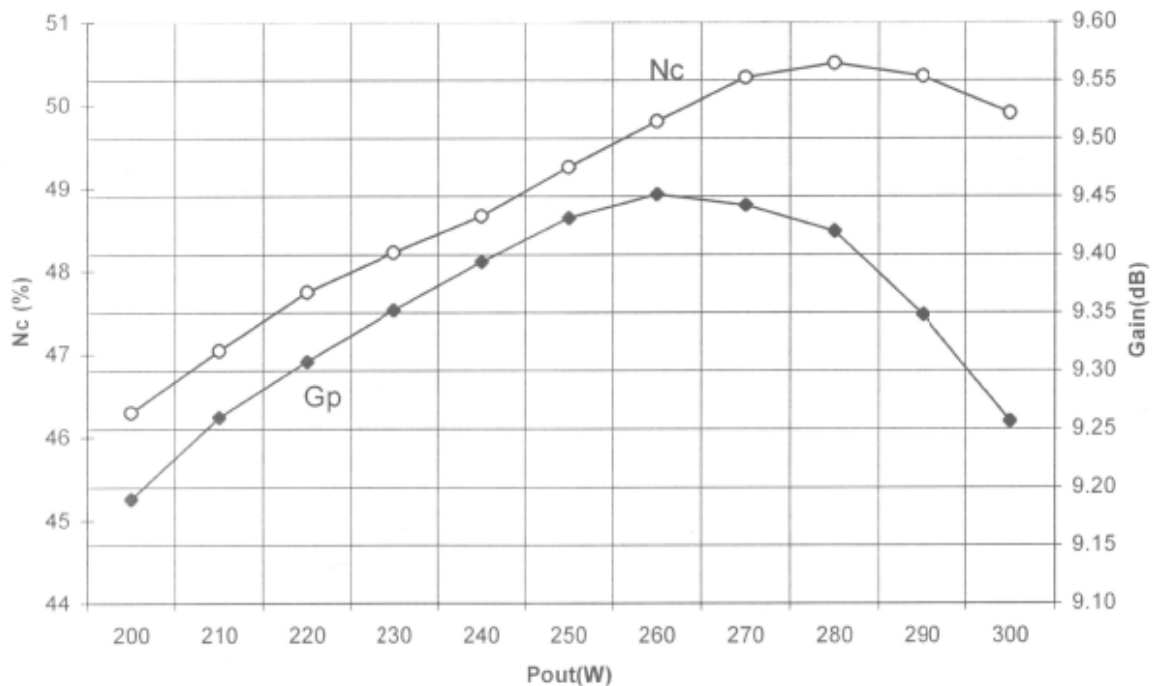
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## Typical Performance Curves

Collector Efficiency and Power Gain vs. Power Output  
Vcc=36VDC, Pulse Width=100μS, Duty=10%, 2.7GHz



Collector Efficiency and Power Gain vs. Power Output  
Vcc=36VDC, Pulse Width=100μS, Duty=10%, 2.8GHz



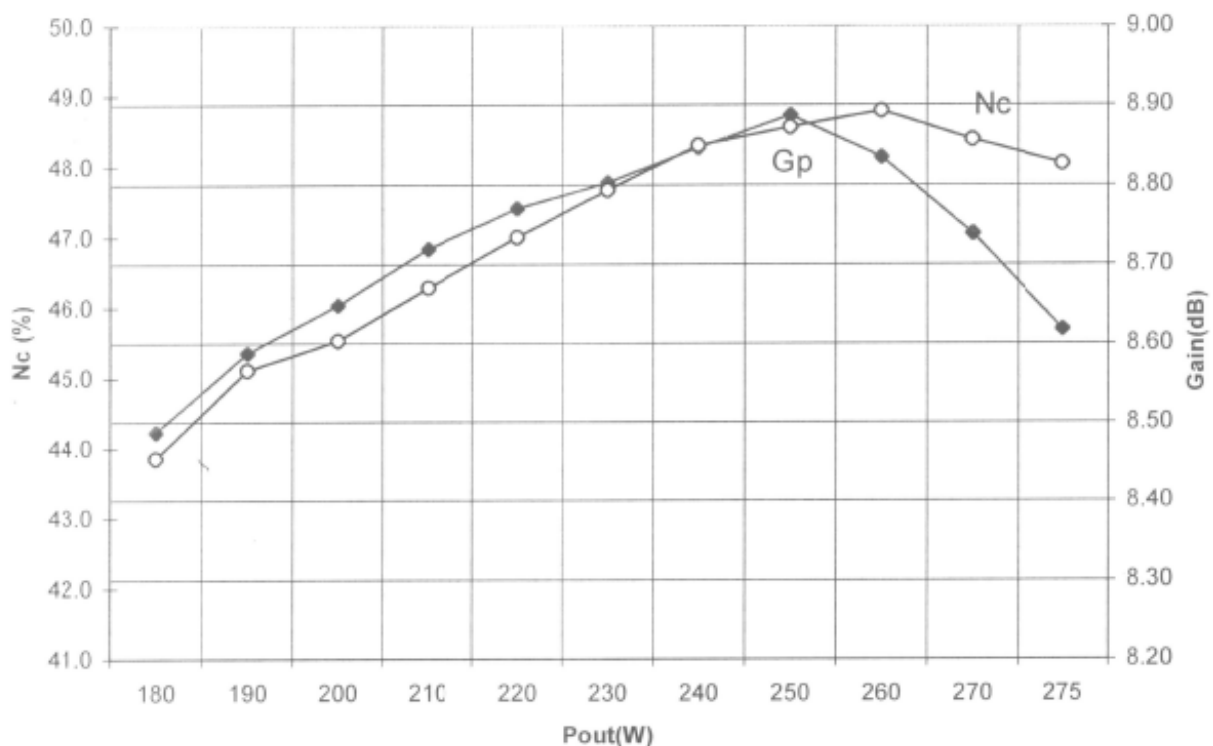
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Collector Efficiency and Power Gain vs. Power Output  
Vcc=36VDC, Pulse Width=100 $\mu$ S, Duty=10%, 2.9GHz



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