

# 2729-300P

## 300W PSM - PLUG AND PLAY

- For S-Band Air Traffic Control Application

300 Watts - 100 $\mu$ s, 10%, 36V  
 S-Band Pulsed Radar 2700 - 2900 MHz

- Easy To Use – 50  $\Omega$  Plug-and-Play
- High Reliability MTTF > 1x10<sup>6</sup> hrs
- Mil Standard 750 Method 2016/2056
- Excellent Repeatability and Availability

### GENERAL DESCRIPTION

The 2729-300P is a 50 ohm matched Power Solution Module (PSM), consists of two common base high power transistors, for S-Band ATC (Air Traffic Control) systems. This module provides greater than 300 Watts of pulsed RF output power at one hundred microsecond pulse width and ten percent duty factor across the 2700-2900 MHz band. The 2729-300P features high power gain, greater than 8 dB, excellent rise time, 70ns typical, and outstanding gain flatness, typically 0.3 dB. This PSM continues the Microsemi tradition of designing Power Solution Modules with outstanding RF performance, high reliability and ease of use. Mechanical Size is 2" x 1.41" x 0.21"

### ELECTRICAL CHARACTERISTICS @ 25 °C, Pulse Width=100 $\mu$ s, 10%

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz	300			W
Gp	Power Gain	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz	8.0			dB
GF	Gain Flatness	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz		0.3	0.6	dB
$\eta_c$	Collector Efficiency	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz	40	45		%
Droop	Pulse Droop	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz		0.1	0.5	dB
R/L	Input Return Loss	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz	10			dB
Tr	Rise Time	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz		70	120	ns
VSWR-T	Load Mismatch Tolerance	Vcc=36V, Pin=48W, Freq=2.7, 2.8, 2.9 GHz			2:1	

### Typical Test Data:

Frequency	Pin (W)	Pout (W)	Ic (I)	RL (dB)	Nc (%)	Tr	G (dB)
2700 MHz	48	312	1.91	-11	46	68	8.2
2800 MHz	48	325	1.88	-13	48	72	8.4
2900 MHz	48	317	1.67	-12	53	65	8.2

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**2729-300P PSM Outline Drawing**

