### MAPP-002729-300M00

### ΜΛΟΜ

# Radar Pulsed Power Pallet 300W, 2.7-2.9 GHz

#### Features

- Input and output matched to 50Ω
- 350W, 46% efficiency; typical RF performance
- 36VCC, 44W nominal input RF drive level
- Includes RC bias filter
- NPN silicon power transistors
- Nickel/Gold plated copper flange
- MTTF>1x106 hrs.@Tflange=45°C

#### Description

The MAPP-002729-300M00 is a common-base, Class-C,Sband pallet amplifier designed to streamline time-to-market. The transistors are DC-isolated to optimize current balance and enable individual current monitoring. A wide-trace Wilkinson combiner maximizes consistency and reduces loss. In addition, the wide traces simplify connection to  $50\Omega$  circuits on any PCB material. The pallet includes a gain compensation network at the input for ultra-flat gain vs. frequency response.



#### ELECTRICAL SPECIFICATIONS: @25°C ±5°C (ROOM AMBIENT)

Parameter	Symbol	Min	Max	Units	Test Conditions
	Gymbol		Max	Office	
Output Power	Pout	300	—	Wpk	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Output Power with 1 dB overdrive	Pout	315	_	Wpk	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 55 Wpk, F=2.7, 2.8, 2.9 GHz
	@1dB OD				
Delta Pout 1dB OD	Pcomp	0.1	1.0	dB	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 55 Wpk, F=2.7, 2.8, 2.9 GHz
	•				Given by 10log(Pout 1dB OD /Poutnom)
Power Gain	Gp	8.3		dB	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Collector Efficiency	ης	40	—	%	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Input Return Loss	RL	10		dB	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Pulse Amplitude Droop	Droop	—	0.5	dB	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
2nd Harmonic	2fc	_	-20	dBc	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44Wpk, F=2.7, 2.8, 2.9 GHz
Spurious Level	Spurious	_	-60	dBc	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Insertion Phase Deviation	Δφ	-20	+20	°C	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Rise time	Tr	_	300	nS	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Overdrive stability, all non-	OD-S	_	50	dBc	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 55.5 Wpk, F=2.7, 2.8, 2.9 GHz
harmonically related spurious					
Load Mismatch Stability	VSWR-S	—	1.5:1	—	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Load Mismatch Tolerance	VSWR-T	—	2:1	dB	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz
Gain Flatness over Frequency	Gp Flat	—	0.8	dB	V <sub>CC</sub> = 36 V, P <sub>in</sub> = 44 Wpk, F=2.7, 2.8, 2.9 GHz

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Rev. V1

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Rev. V1





#### Efficiency



**Return Loss** 

**Typical Performance Curves** 





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Rev. V1

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