



QPP-008
35W, 925-960MHz
Class AB Driver Stage

QuikPAC Module Data

General description:

The **QPP-008 QuikPAC™** RF power module is an impedance matched Class AB amplifier stage designed for use in the driver stage of linear RF power amplifiers for cellular base stations. The power transistor is fabricated using Xemod's advanced design LDMOS process. The gate terminal is connected directly to the control voltage pin, allowing direct control of the bias. The user must supply the proper value of V_{GS} to set the desired quiescent current.

Features:

- Single Polarity Operation
- Matched for 50 Ω RF interfaces
- XeMOS FET Technology
- Stable Performance
- QuikPAC System Compatible
- QuikClip or Flange Mounting

Standard Operating Conditions

Parameter	Symbol	Min	Nom	Max	Units
Frequency Range	F	925		960	MHz
Supply (Drain) Voltage	V_D	26.0	28.0	32.0	VDC
Bias (Gate) Voltage	V_G	3.0	3.5	5.0	VDC
Bias (Gate) Current, Average	I_G			1.0	mA
RF Source & Load Impedance	Ω		50		Ohms
Load Impedance for Stable Operation (All Phases)	VSWR			10:1	
Operating Baseplate Temperature	T_{OP}	-20		+90	$^{\circ}C$
Output Device Thermal Resistance, Channel to Baseplate	Θ_{jc}		1.9		$^{\circ}C/W$

Maximum Ratings

Parameter	Symbol	Value	Units
Supply (Drain) Voltage	V_{DD}	35	VDC
Control (Gate) Voltage, $V_{DD} = 0$ VDC	V_G	15	VDC
Input RF Power	P_{IN}	2.5	W
Load Impedance for continuous operation without damage	VSWR	3:1	
Output Device Channel Temperature		200	$^{\circ}C$
Lead temperature during reflow soldering		+210	$^{\circ}C$
Storage Temperature	T_{STG}	-40 to +100	$^{\circ}C$

Performance at 28VDC & 25 $^{\circ}C$

Parameter	Symbol	Min	Nom	Max	Units
Supply (Drain) Voltage	$V_{D1,2}$	27.8	28.0	28.2	VDC
Quiescent Current (total)	I_{DQ}	270	300	330	mA
Power Output at 1 dB Compression (single tone)	P_{-1}	35	40		W
Gain at 35W PEP (two tone)	G	13.5	15.5		dB
Gain Variation over frequency at 35W Output (two tone)	ΔG		0.3	0.5	dB
Input Return Loss (50 Ω Ref) at 35W PEP (two tone)	IRL	11.5	17.5		dB
Drain Efficiency at 35W P_{out} (single tone)	η	40	45		%
Drain Efficiency at 35W PEP (two tone)	η	32	36		%
3 rd Order IMD Product (2 tone at 35W PEP; 1 MHz spacing)			-30	-28	dBc

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