Product Features

- 5G NR band 3400-3800 MHz
- Power gain 28 dB
- Saturation power 48 dBm (63 W)
- Drain efficiency 40% @P_{avg}= 39 dBm (8 W)
- 2-stage Doherty power amplifier module
- GaN-HEMT
- 13×17 mm^2 size laminate package

13 mm × 17 mm laminate package

Applications

- 5G NR technology
- Massive MIMO
- Small cell
- Cellular base station

Description

The PC0803438Q is a fully integrated hybrid GaN 2-stage Doherty power amplifier module designed for 5G massive MIMO applications, small cells and cellular base stations, covering frequency range from 3.4 GHz to 3.8 GHz. The device delivers up to 63 W of saturation power and has 40% drain efficiency at 8 W of average power with operating drain voltage of 48 V.

Electrical Specifications

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	CONDITION
Frequency Range	f	3.4	3.6	3.8	GHz	
Power Gain	G	-	28	-	dB	
Gain Flatness	ΔG	-0.5		+0.5	dB	Over any 100 MHz bandwidth
Input Return Loss	S_{11}	-	10	-	dB	
Average Output Power	P_{avg}	-	39	-	dBm	
Saturated Output Power	P_{sat}	-	48.0	48.5	dBm	Pulse width=5 μs Duty cycle 10% Output power for 5 dB compression
Adjacent Channel Leakage Ratio	ACLR	-	-22	-	dBc	Without DPD P_{avg}=39 dBm (8 W)
Drain Efficiency	η	-	40	-	%	P_{avg}=39 dBm (8 W)

Note: $I_{q,d}$=30 mA, $I_{q,c}$=50 mA, $V_{gs,p}$=-5.3 V, V_{dd}=48 V, T=+25°C, single-carrier, 100 MHz 5G NR signal with 7.8 dB PAPR @0.01% probability on CCDF