



# **ANADIGICS CDMA POWER AMPLIFIER PRODUCTS**

# **ANADIGICS CDMA Advantage**

- High linearity
- High efficiency
- High performance
- High reliability

- Low power consumption
- High quality
- Small module packaging
- Easy integration

ANADIGICS has harnessed its wireless design and manufacturing strengths to develop a high performance range of power amplifiers for multi-mode, multi-band CDMA handsets. Manufactured using an advanced InGaP HBT technology, ANADIGICS' power amplifier products offer outstanding reliability, performance stability over temperature, and ruggedness. The CDMA power amplifier modules employ a low power quiescent current mode that is digitally controlled to reduce power drain on the system battery. Packaged in laminate modules, these power amplifiers incorporate 50 Ohm input and output matching networks optimized for output power, linearity, and efficiency.

### The Benefits for Manufacturers are Clear

High efficiency & low quiescent current

High linearity

Small size

Lower cost devices

InGaP HBT

Easier integration

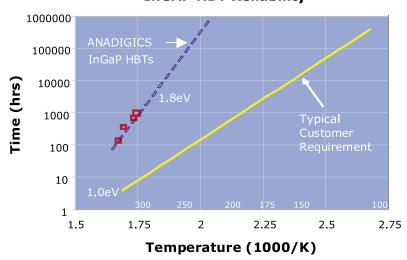
High quality

Fully matched devices

Module Packaging

- = Longer talk times and standby times
- Support CDMA 1X Voice and Data applications
- = More features and functionality
- = More competitive handset prices
- Superior performance and reliability
- = Faster time-to-market
- = Fewer field returns
- = Deliver higher handset yields
- = Simplify development, faster products to

## **InGAP HBT Reliability**



Part #	Application	Package Size (mm)	Frequency (MHz)	Supply (Vcc) Typ	Pout (dBm) Typ	(%)	Vref
AWT6106	PCS CDMA Handsets Dual Band CDMA Handsets	6 x 6 x 1.5 mm	1850-1910	3.5	28.5	36	2.85
AWT6109	Korean Band PCS CDMA Handsets	6 x 6 x 1.5 mm	1750-1780	3.5	28.5	35	2.85
AWT6111	<ul><li>Single Mode CDMA</li><li>Wireless Handsets</li><li>Dual Mode AMPS/CDMA</li><li>Wireless Handsets</li></ul>	6 x 6 x 1.5 mm	824-849	3.5	31.0 (AMPS) 28.5 (CDMA)	47 (AMPS) 37 (CDMA)	2.85
AWT6112	<ul><li>Dual Mode AMPS/CDMA Wireless Handsets</li><li>Single Mode CDMA Wireless Handsets</li></ul>	4 x 4 x 1.4 mm	824-849	3.4	31.0 (AMPS) 28.0 (CDMA)	50 (AMPS) 38 (CDMA)	2.85
AWT6113	Dual Band CDMA Handsets PCS CDMA Handsets	4 x 4 x 1.4 mm	1850-1910	3.4	28.0	38	2.85
AWT6114	· Korean Band PCS CDMA Handsets	4 x 4 x 1.4 mm	1750-1780	3.4	8.0	36.5	2.85
AWT6130	Single Mode CDMA Wireless Handsets Dual Mode AMPS/CDMA Wireless Handsets Tri Mode CDMA Wireless Handsets with E911	4 x 4 x 1.4 mm	824-849	3.5	31.5 (AMPS) 29.0 (CDMA)	48 (AMPS) 38 (CDMA)	2.90
AWT6131	Dual Band CDMA Handsets Tri Mode CDMA Handsets with E911	4 x 4 x 1.4 mm	1850-1910	3.5	29.0	37	2.90
AWT6133	PCS CDMA Handsets Dual Band CDMA Handsets	4 x 4 x 1.4 mm	1850-1910	3.5	29.0	38	2.85
AWT6134	Korean Band PCS CDMA Handsets	4 x 4 x 1.4 mm	1750-1780	3.4	28.0	39	2.80
AWT6135	PCS CDMA Handsets Dual Band CDMA Handsets	4 x 4 x 1.4 mm	1850-1910	3.4	28.0	39	2.80
AWT6301	Dual Mode AMPS/CDMA Handsets Single mode CDMA Handsets	3 x 3 x 1.1 mm	824-849	3.4	31.0 (AMPS) 28.0 (CDMA)	54 (AMPS) 39 (CDMA)	2.85
AWT6302	Dual Band CDMA Handsets PCS CDMA Handsets	3 x 3 x 1.1 mm	1850-1910	3.4	28.0	39	2.85
AWT6305	Dual Mode AMPS/CDMA Handsets Single mode CDMA Handsets	3 x 3 x 1.1 mm	824-849	3.5	31.5 (AMPS) 29.0 (CDMA)	50 (AMPS) 38 (CDMA)	2.85
AWT6306	Dual Band CDMA Handsets PCS CDMA Handsets	3 x 3 x 1.1 mm	1850-1910	3.5	29.0	38	2.85

#### AWT6106 - For Dual Mode CDMA Handsets & PCS CDMA Handsets

The AWT6106 has been designed by ANADIGICS for use in multi-mode, multi-band CDMA wireless handsets that support 2.5G CDMA PCS applications. Delivering the stringent performance and integration levels demanded by current CDMA and next generation CDMA-1X handset applications, the AWT6106 provides 36 percent power added efficiency.



6mm x 6mm

### **AWT6109 – For Korean Band PCS CDMA Handsets**



6mm x 6mm

The AWT6109 is a 3.5V (3.0V to 4.2V) high efficiency, 3 stage amplifier module optimized by ANADIGICS for use in Korean band PCS CDMA wireless handsets. The device is manufactured on an advanced InGaP HBT technology offering state-of-the-art reliability, temperature stability, and ruggedness. Full output power is achieved at a low quiescent current of 60mA, reducing power drain on the system battery.

## **AWT6111 - For Dual Mode AMPS/CDMA Handsets**

The AWT6111 is a high power high efficiency amplifier module for Dual Mode CDMA/AMPS wireless handset applications. The AWT6111 supports reference voltage ( $V_{\text{REF}}$ ) operation at 2.8V, enabling increased talk-time and standby time. The product delivers a low quiescent current of 47mA to reduce power drain on the battery and a low leakage current when the handset is switched off.



6mm x 6mm

## **AWT6112 - For Dual Mode AMPS/CDMA Handsets**



4mm x 4mm

The AWT6112 offers higher performance for Dual Mode AMPS/CDMA wireless handset applications in a 55% smaller size package. The device is manufactured on an advanced InGaP HBT technology offering state-of-the-art reliability, temperature stability, and ruggedness. The 4mm x 4mm surface mount module incorporates matching networks optimized for output power, efficiency and linearity in a 50  $\Omega$  system.

### AWT6113 - For Dual Mode CDMA Handsets & PCS CDMA Handsets

The AWT6113 offers higher performance for PCS CDMA wireless handset applications in a 55% smaller size package. The 4mm x 4mm amplifier module offers selectable bias modes that optimize efficiency for different output levels. The bias modes and shutdown mode with low leakage current serve to increase handset talk and standby time.



4mm x 4mm

#### AWT6114 - For Korean Band PCS CDMA Handsets

The AWT6114 is a high power high efficiency amplifier module for Korean PCS CDMA wireless handset applications. The device is manufactured on an advanced InGaP HBT MMIC technology offering state-of-the-art reliability, temperature stability, and ruggedness. The 4mm x 4mm amplifier module delivers higher performance in a 55% smaller PCB area than the first generation AWT6109.



4mm x 4mm

## AWT6130 - For Dual Mode AMPS/CDMA and Tri Mode CDMA Handsets



4mm x 4mm

AWT6130 is the first power amplifier module designed specifically for IS-98D(CDMA2000) wireless handset applications. The device is manufactured on an advanced InGaP HBT MMIC technology offering state-of-the-art reliability, temperature stability, and ruggedness. The self-contained 4mm x 4mm surface mount package incorporates matching networks optimized for output power, efficiency, and linearity in a 50  $\Omega$  system.

# AWT6131 - For PCS CDMA, Dual Band CDMA, & Tri Mode CDMA Handsets

AWT6131 provides the additional output power margin RF designers need to overcome additional post-PA insertion loss in tri-mode handset designs supporting E911 (GPS enabled). The device is manufactured on an advanced InGaP HBT MMIC technology offering state-of-the-art reliability, temperature stability, and ruggedness. Selectable bias modes that optimize efficiency for different output power levels, and a shutdown mode with low leakage current, increase handset talk and standby time.



4mm x 4mm

# **AWT6133/AWT6135 – For PCS CDMA & Dual Band CDMA Handsets**



4mm x 4mm

AWT6133 and AWT6135 meet the increasing demands for higher efficiency and linearity in CDMA 1XRTT handsets. The devices are manufactured on an advanced InGaP HBT MMIC technology offering state-of-the-art reliability, temperature stability, and ruggedness. Selectable bias modes that optimize efficiency for different output power levels, and a shutdown mode with low leakage current, increase handset talk and standby time. The AWT6133 offers higher linear output power for handset designs with extra transmit chain insertion loss.

### **AWT6134 – For Korean Band PCS CDMA Handsets**

AWT6134 meets the increasing demands for higher efficiency and linearity in CDMA 1XRTT handsets. The device is manufactured on an advanced InGaP HBT MMIC technology offering state-of-the-art reliability, temperature stability, and ruggedness. Selectable bias modes that optimize efficiency for different output power levels, and a shutdown mode with low leakage current, increase handset talk and standby time.



4mm x 4mm

# AWT6301 - For Single Mode CDMA Handsets & Dual Mode AMPS/CDMA Handsets

The AWT6301 meets the increasing demands for higher efficiency and linearity in AMPS/CDMA 1X handsets, while reducing pcb area by 44%. The device combines efficiency levels of 40% with a linearity of -50/-60dB ACPR at +28 dBm output power level. The PA operates at a low reference voltage and current and are compatible with Qualcomm's new radioOne 6000/6100 chipset $^{\text{TM}}$ .



3mm x 3mm

### AWT6302 - For PCS CDMA & Dual Band CDMA Handsets



3mm x 3mm

The AWT6302 meets the increasing demands for higher efficiency and linearity in CDMA 1X handsets, while reducing pcb area by 44%. The device supports reference voltage ( $V_{REF}$ ) operation at 2.8V, enabling increased talk-time and standby time. The package pinout was chosen to enable handset manufacturers to switch from a 4mm x 4mm PA module with very few layout changes to the phone board. The device combines efficiency levels of 40% with a linearity of -50/-60dB ACPR at +28dBm output power level.

# **AWT6305 – For Single Mode CDMA Handsets & Dual Mode AMPS/CDMA Handsets**

The AWT6305 meets the increasing demands for higher efficiency and linearity in AMPS/CDMA 1X handsets, while reducing pcb area by 44%. The device supports reference voltage ( $V_{\text{REF}}$ ) operation at 2.8V, enabling increased talk-time and standby time. The product delivers a low quiescent current of 47mA to reduce power drain on the battery and a low leakage current when the handset is switched off.



3mm x 3mm

## AWT6306 - For PCS CDMA & Dual Band CDMA Handsets



3mm x 3mm

The AWT6306 meets the increasing demands for higher efficiency and linearity in CDMA 1X handsets, while reducing pcb area by 44%. The device supports reference voltage ( $V_{\text{REF}}$ ) operation at 2.85V, enabling increased talk-time and standby time. The package pinout was chosen to enable handset manufacturers to switch from a 4mm x 4mm PA module with very few layout changes to the phone board.

### THE RIGHT SOLUTIONS

When its comes to size, multi-band operation, and power efficiency, ANADIGICS has proven itself one of the most innovative designers and manufacturers of integrated circuits in the global wireless marketplace. In providing solutions for the North American, European, and growing Asian marketplace, the Company has established itself as a leading contributor to our generation's journey toward a truly wireless society.

At ANADIGICS, we are the radio frequency (RF) experts, providing power amplifiers and switches that have been adopted in cellular and PCS handsets by the world's leading original equipment manufacturers. It is our mission to provide reliable solutions that can be quickly and easily integrated into handsets, facilitating a faster time-to-market. In today's competitive marketplace, a matter of weeks can be crucial.

ANADIGICS provides the power that enables wireless product users to have longer talk-time and standby times. We provide the technology that enables handsets to offer more functionality than ever before, enabling manufacturers to develop third-generation handsets and beyond. And we provide the consistency that ensures handset and PDA users have reliable access time-after-time, with voice and data quality comparable to land lines.

### THE RIGHT TECHNOLOGY

At ANADIGICS, investment in our state-of-the-art facility, and the development of expertise across a broad range of technologies, has placed us in the position to develop truly innovative wireless solutions.

Our ability to fabricate six-inch GaAs wafers provides us with considerable cost savings. And through our InGaP HBT, MESFET, pHEMT and integrated Passive processes, we are able to guarantee high volumes of high quality products for commercial applications in the emerging wireless marketplace.

Our technology, however, would mean nothing without the backing of our worldwide applications support team, which has been developed to ensure we deliver the right product, on-time, to make innovative wireless product designs a reality.





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SUNSTAR 商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业,是专业高科技电子产品生产厂家,是具有 10 多年历史的专业电子元器件供应商,是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一,是一家专业代理和分銷世界各大品牌 IC 芯片和電子元器件的连锁经营綜合性国际公司,专业经营进口、国产名厂名牌电子元件,型号、种类齐全。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商,已在全国范围内建成强大统一的供货和代理分销网络。 我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM 电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA 软件硬件、二极管、三极管、模块等,是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。商斯达实业公司拥有庞大的资料库,有数位毕业于著名高校——有中国电子工业摇篮之称的西安电子科技大学(西军电)并长期从事国防尖端科技研究的高级工程师为您精挑细选、量身订做各种高科技电子元器件,并解决各种技术问题。

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