



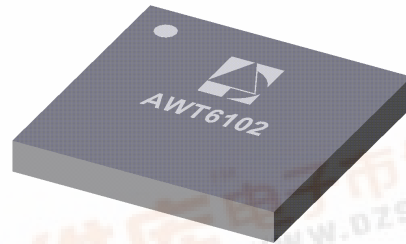
AWT6102M2
EGSM/DCS/PCS Triple Band
Power Amplifier Module
Advanced Product Information Rev. 2

FEATURES

- InGaP HBT Technology
- High Efficiency 55% GSM
- High Efficiency 50% DCS
- High Efficiency 45% PCS
- Low Leakage Current (<10 μ A)
- SMT Module Package
- Small Foot Print (9.2mm X 11.6mm)
- Low Profile (1.55 mm)
- 50 Ω Input and Output Matching
- Minimum Number of External Components

APPLICATIONS

- GSM/DCS Dual Band Handsets
- GSM/PCS Dual Band Handsets
- GSM/DCS/PCS Triple Band Handsets



9x11.6 mm
MCM Module Package

Description

The AWT6102 is a 3.5V power amplifier module for use in dual Mode GSM/DCS/PCS wireless handsets and communication systems.

Absolute Minimum and Maximum Ratings

SIGNAL	MIN	MAX	UNITS
Supply Voltage (V _{cc})		+7	V
Input Power (RF _{IN})		+15	dBm
Control Voltage (V _{APC})		+ 4.3V	V
Storage Temperature (T _{STG})	-55	150	°C
Operating Temperature (T _O)	-25	85	°C

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Electrical Specifications EGSM:

(Unless otherwise specified: $V_{CC} = 3.2V$, $Z_{IN} = Z_{OUT} = 50\Omega$ System, $T_C = 25^\circ C$, pulsed operation with 577 μ sec pulse width and 12.5% duty cycle)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS
Frequency	f_0	880	-	915	MHz
Supply Voltage	V_{CC}	2.9	3.2	4.5	V
Control Voltage Range	V_{APC}	0.2	2.0	2.7	V
Power Control Current	I_{APC}			1	mA
Input Power	P_{IN}	8	10	12	dBm
Output Power	P_{OUT}		34.5	-	dBm
Power Added Efficiency	PAE	50	55	-	%
Degraded Output Power $V_{CC} = 2.9V$, $V_{APC} = 2.4V$, $P_{IN} = 8dBm$, $T_C = 85^\circ C$		32			dBm
Isolation $V_{APC} = 0.2V$, $P_{IN} = 10 dBm$		-25	-35		dBm
Harmonics ⁽¹⁾ 2 nd 3 rd 3fo to 12.750 GHz	- - -	- - -	-12 -15	-7 -7 -7	dBm dBm dBm
Stability: Load 8:1 VSWR All phase angles	-		-	-70	dBc
Ruggedness: $P_{IN} = 12 dBm$, $V_{SUP} = 4.5V$, $V_{APC} = 0.2 - 2.8V$				10:1 VSWR All Phases	
Leakage Current $V_{APC} = 0V$, $V_{CC} = 4.5V$ No input power		-	10	-	μA
Noise Power 925 to 935 MHz 935 to 960 MHz				-72 -84	dBm/100 KHz dBm/100 KHz
Switching Time V_{APC} on to 90% detected P_{OUT}				2	μ sec
Input VSWR		-	-	2:1	
Output VSWR				2:1	

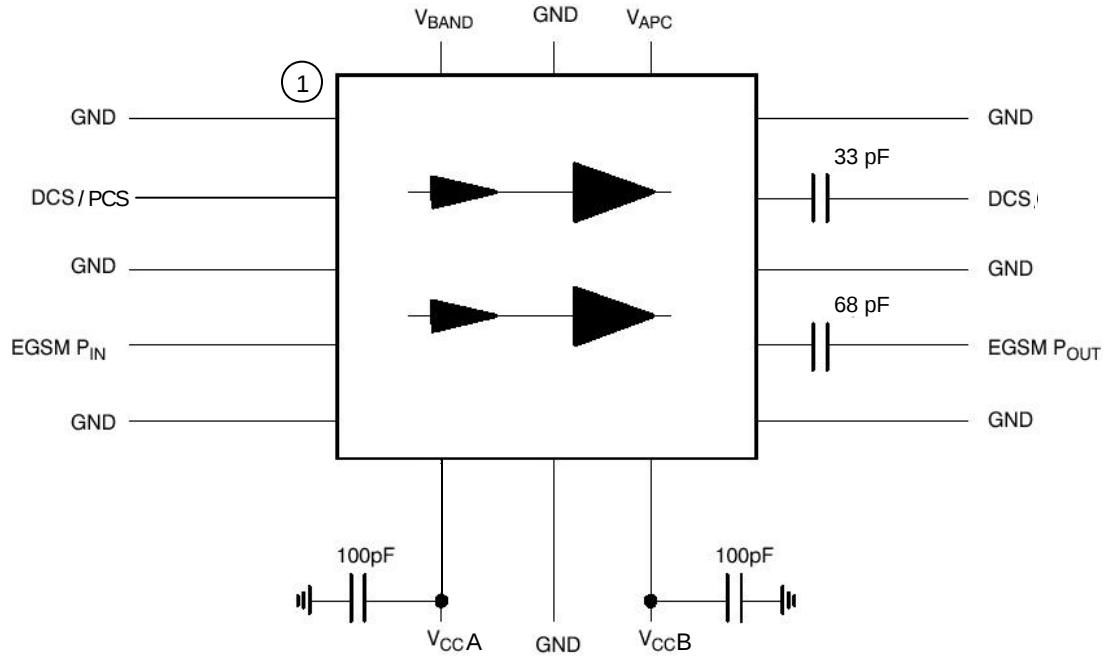
Electrical Specifications DCS/PCS:

(Unless otherwise specified: $V_{CC} = 3.2V$, $Z_{IN} = Z_{OUT} = 50\Omega$ System, $T_C = 25^\circ C$, pulsed operation with 577 μ sec pulse width and 12.5% duty cycle)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS
Frequency DCS	f_o	1710	-	1785	MHz
Frequency PCS	f_o	1850	-	1910	MHz
Supply Voltage	V_{CC}	2.9	3.2	4.5	V
Control Voltage Range	V_{APC}	0.2	2.0	2.7	V
Power Control Current	I_{APC}			1	mA
Input Power	P_{IN}	6	8	10	dBm
Output Power DCS	P_{OUT}		31.5	-	dBm
Output Power PCS	P_{OUT}		TBD	-	dBm
Power Added Efficiency (DCS)	PAE	45	50	-	%
Power Added Efficiency (PCS)	PAE	TBD	TBD	-	%
Degraded Output Power (DCS/PCS) $V_{CC} = 2.9V$, $V_{APC} = 2.4V$, $P_{IN} = 6dBm$, $T_C = 85^\circ C$		29.5			dBm
Isolation $V_{APC} = 0.2V$, $P_{IN} = 10 dBm$		-30	-35		dBm
Harmonics ⁽¹⁾ 2 nd 3 rd 3fo to 12.750 GHz	- - - -	- - - -	-12 -15 - -	-7 -7 -7 -	dBm dBm dBm dBm
Stability: Load 8:1 VSWR All phase angles	-		-	-70	dBc
Ruggedness: $P_{IN} = 10 dBm$, $V_{SUP} = 4.5V$, $V_{APC} = 0.2 - 2.8V$				10:1 VSWR All Phases	
Leakage Current $V_{APC} = 0V$, $V_{CC} = 4.5V$ No input power		-	10	-	μA
Noise Power 20 MHz offset				-76	dBm/100 KHz
Switching Time V_{APC} on to 90% detected P_{OUT}				2	μ sec
Input VSWR		-	-	2:1	
Output VSWR		-	-	2:1	

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Schematic



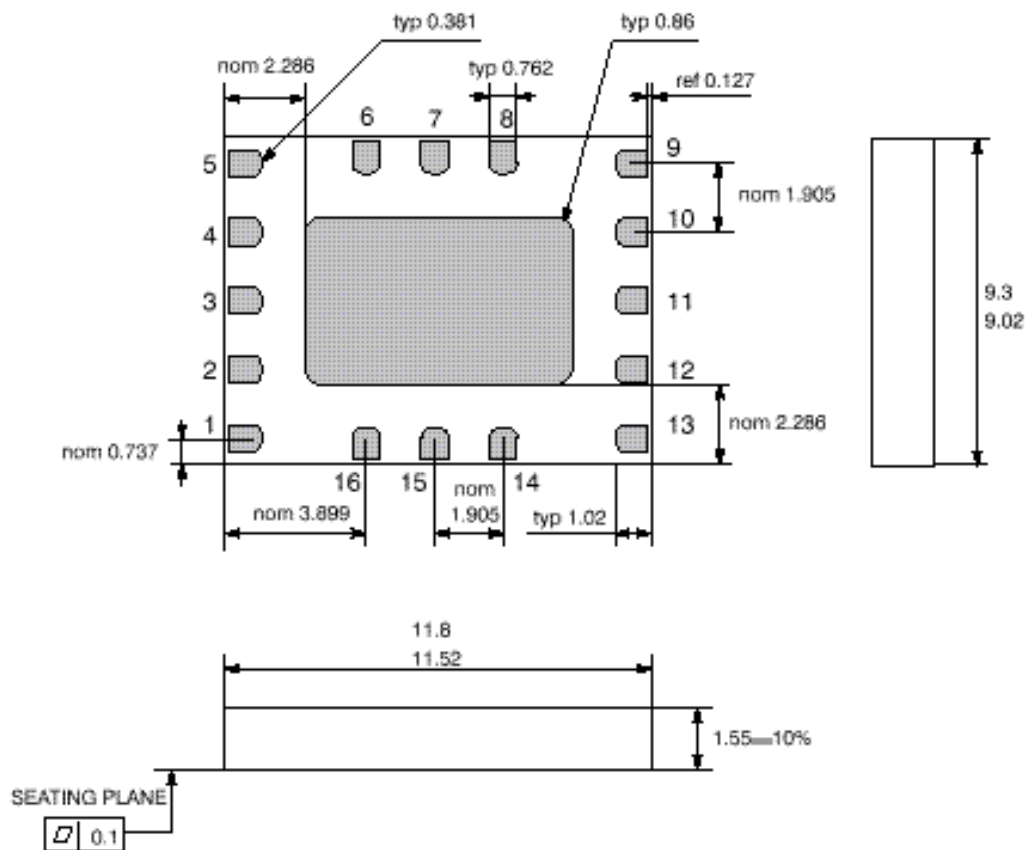
Pin	Name	Description	Pin	Name	Description
1	GND	Ground	9	GND	Ground
2	DCS/PCS	DCS/PCS RF Input Signal	10	EGSM P _{OUT}	GSM RF output
3	GND	Ground	11	GND	Ground
4	EGSM P _{IN}	GSM RF Input Signal	12	DCS/PCS	DCS/PCS RF output
5	GND	Ground	13	GND	Ground
6	V _{CC A}	Supply Voltage	14	V _{APC}	Power Control
7	GND	Ground	15	GND	Ground
8	V _{CC B}	Supply Voltage	16	V _{BAND} ⁽¹⁾	Band Select

Notes:

1. V_{band}: EGSM 0.0 to 0.5V
DCS/PCS: 2.0 to 2.8V

Package Outline Drawing
Bottom View

Dimensions in mm.



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NOTES

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