ECM168

PHS +34 dBm 10V Module

The Communications Edge ™

Product Information

Product Features

- 1.9 GHz Power Amp Module
- +34 dBm Linear Output Power
- 33 dB Gain
- Single +10V Supply
- No negative voltage required
- Low cost metal package
- MTTF > 100 Years

Applications

- PAS Base Stations
- Repeaters

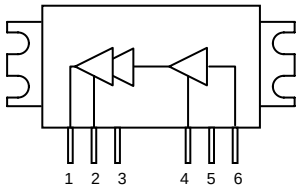
Product Description

The ECM168 is a high performance PAS Amplifier Module offering excellent linearity. The internally matched multi-stage amplifier has 33.5 dB gain while achieving +34 dBm linear output power to meet PHS requirements of better than -65 dBc ACLR at a ±600 kHz offset from the carrier.

The ECM168 uses a high reliability InGaP/GaAs HBT process technology and does not require any external matching components. The module has an added benefit by not require any negative biasing voltages; an internal active bias allows the ECM168 to maintain high linearity over temperature and operate directly off a single +10V supply. A low-cost metal housing allows the device to have a low thermal resistance and achieves over 100 years MTTF. All devices are 100% RF and DC tested.

The ECM168 is targeted for use as a driver amplifier in wireless infrastructure where high linearity and high power is required. This combination makes the device an excellent candidate for next generation PAS base stations.

Functional Diagram



Top View

Pin No.	Function
1	RF Output
2	Vcc2
3	No Connect
4	Vcc1
5	No Connect
6	RF Input
Case	Ground

Specifications (1)

Parameter	Symbol	Units	Min	Typ	Max	Test Conditions
Frequency	f	MHz		1880 - 1920		
Power Gain	Ga	dB	32.5	33.5	35.5	Pout = +34 dBm, Vd = 10V
ACLR (±600kHz)	Padj1	dBc		-67 -69	-65	Pout = +34 dBm, Vd = 10V Pout = +33.5 dBm, Vd = 10V
ACLR (±900kHz)	Padj2	dBc		-74	-70	Pout = +34 dBm, Vd = 10V
Input VSWR				1.5		Pout = +34 dBm, Vd = 10V
2nd Order Harmonic Distortion	2fo	dBc		-50		Pout = +34 dBm, Vd = 10V
3rd Order Harmonic Distortion	3fo	dBc		-50		Pout = +34 dBm, Vd = 10V
Supply Voltage	Vcc1, Vcc2	V		+10		
Supply Current	Id	mA	1000	1100	1300	

1. Test conditions unless otherwise noted: 25° C, Supply Voltage = +10 V, Output Power = +34 dBm, RF signal modulation is per PHS RCR-28.

Absolute Maximum Rating

Parameter	Rating
Operating Case Temperature	-35 to +55 °C
Storage Temperature	-55 to +150 °C
Input RF Power	+10 dBm
Supply Voltage	+12 V

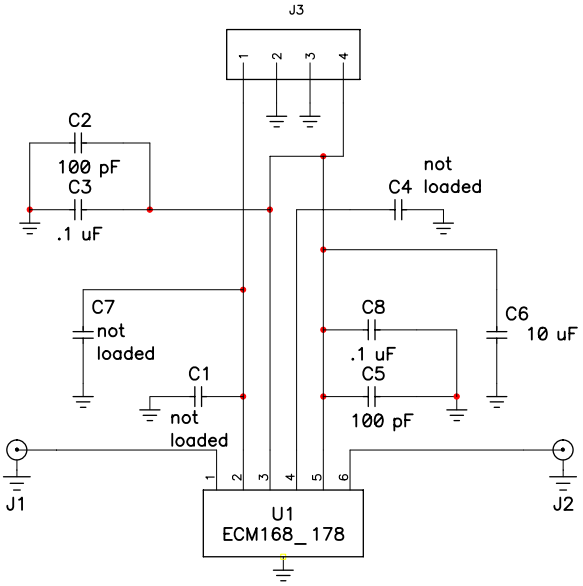
Operation of this device above any of these parameters may cause permanent damage.

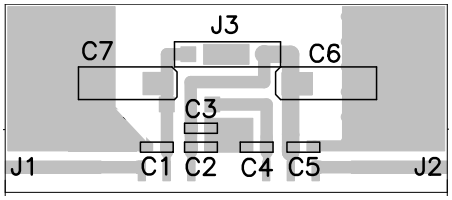
Ordering Information

Part No.	Description
ECM168	PHS +34 dBm 10V Module
ECM168-PCB	Fully Assembled Evaluation Board

Specifications and information are subject to change without notice

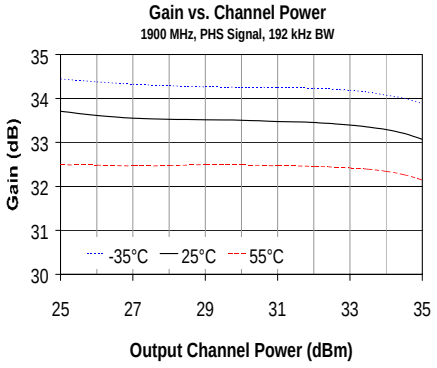
Recommended Application Circuit

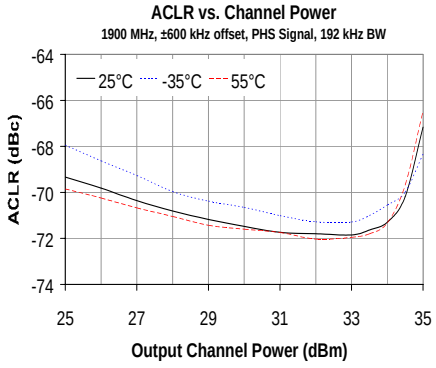


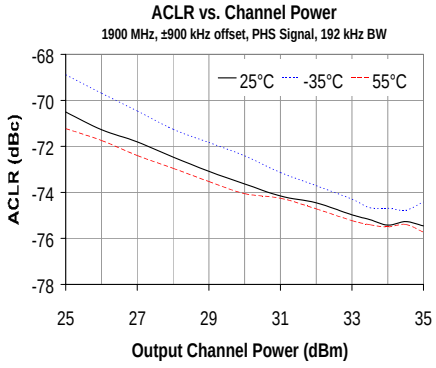


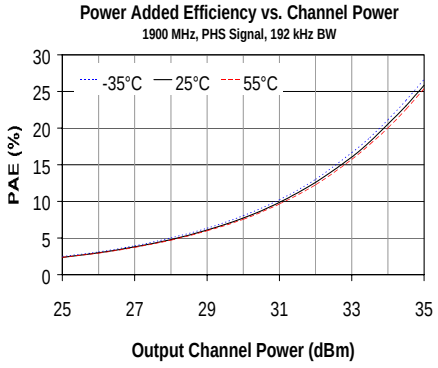
Please note that for reliable operation, the evaluation board will have to be mounted to a much larger heat sink during operation and in laboratory environments to dissipate the power consumed by the device. The use of a convection fan is also recommended in laboratory environments.

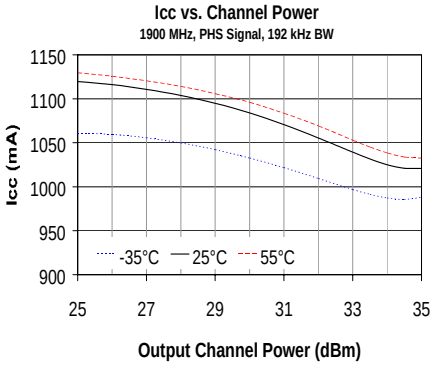
Performance Graphs





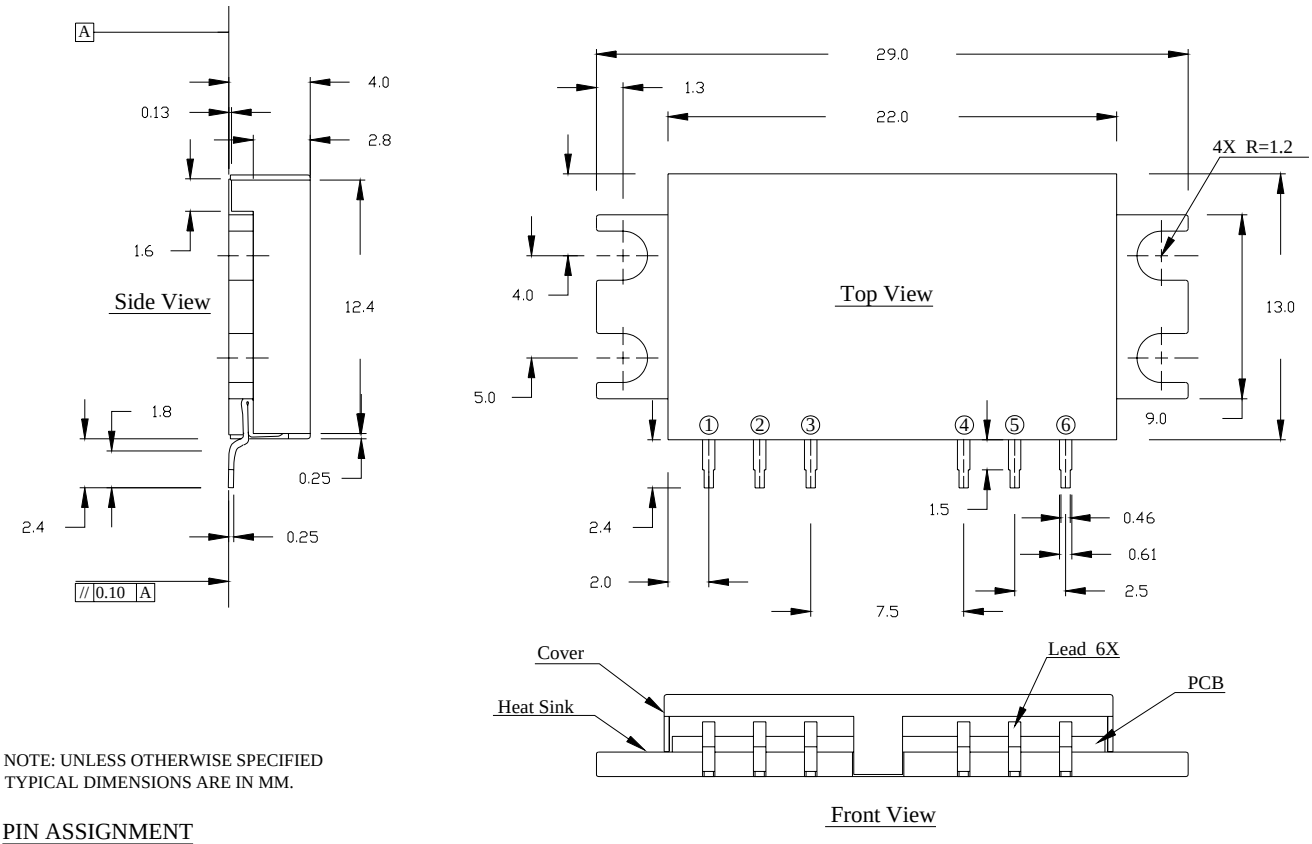






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Outline Drawing



NOTE: UNLESS OTHERWISE SPECIFIED
TYPICAL DIMENSIONS ARE IN MM.

PIN ASSIGNMENT

(1) RFout, (2) Vcc2, (3) N/C,
(4) Vcc1, (5) N/C, (6) RFin, Case:GND.