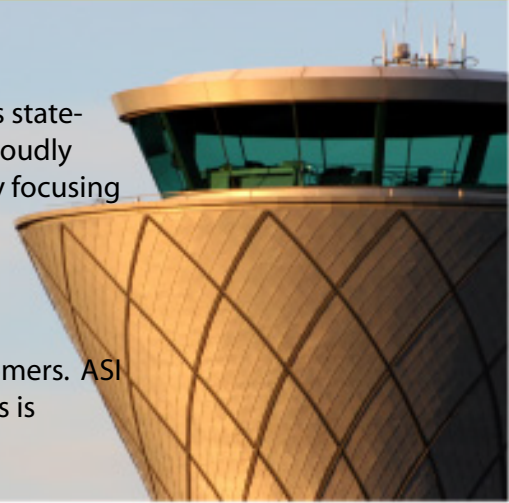




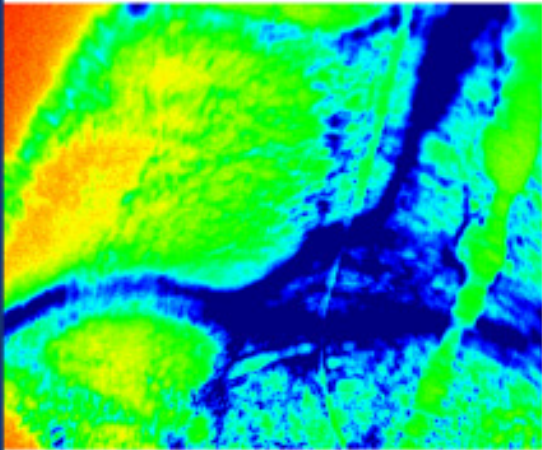
## WHO IS ASI?

ASI Semiconductor, Inc. (ASI) designs, manufactures and markets state-of-the-art high power, pulsed RF transistors and modules. We proudly serve thousands of customers in dozens of countries, specifically focusing on pulsed RF military and commercial applications; avionics, Radar, medical and industrial. We are introducing VIMOS technology to meet the needs and requirements of this unique marketplace. We have supported this industry for over 30 years which has included several governments and Fortune 500 customers. ASI was founded in 1979 and is ISO 9001 certified. Our headquarters is located in North Hollywood, CA, USA.



## WHAT IS VIMOS™ ?

VIMOS is a High Power RF Transistor technology designed specifically for pulsed amplifiers. VIMOS devices provide excellent RF performance. In addition, they are extremely rugged, capable of simultaneously withstanding overdrive, overvoltage and 20:1 VSWR. We offer a high quality, superior RF device at a very competitive price. Let us prove it. Analyze the data and test our transistors.



## VIMOS™ vs. LDMOS / GaN

VIMOS is a silicon based technology built upon decades of semiconductor engineering. GaN is in its infancy. The devices are fragile with regards to ruggedness, require additional power supply complexity, and are cost prohibitive.

VIMOS technology is specifically designed for pulsed, high power RF amplifiers. LDMOS, on the other hand, was designed for wireless base stations and only subsequently adopted for these types of applications. VIMOS devices use the same package as their LDMOS counterparts creating a more rugged amplifier and reducing dependency, exposure and risk to sole source LDMOS.

VIMOS can improve the robustness of your amplifier, reduce field failures, significantly reducing the size and weight of your product and increasing performance, all at a competitive cost.



HIGH RF GAIN (TYP 18-25dB)

INDUSTRY STANDARD LDMOS PACKAGE

24V - 48V SUPPLY  
(Enhancement Mode)  
VIMOS Does not require  
an additional negative  
supply as does GaN.

Low inductance gold vias, rather  
than wire bonds are utilized to make  
the source connection to the flange.

DIAMOND HEAT SPREADER

INPUT MATCHED

OUTPUT MATCHED

EXTREMELY RUGGED

VIMOS has the toughest VSWR spec in  
the industry: No Degradation in RF  
Performance and <1% change in DC  
Parameters after being subjected to the  
following simultaneously:

- 20:1 VSWR
- 3dB Over Drive
- 10% Increase in Supply Voltage

Many LDMOS devices are spec-ed at  
5:1 VSWR, and a few at 10:1, without  
any overdrive or overvoltage specified.  
In addition the DC parameters are  
permitted to shift so long as the device  
does not have degraded RF perform-  
ance. This means that the device may  
sustain damage in the form of dam-  
aged cells during the 10:1 VSWR condi-  
tion, the remaining cells are able to  
produce the RF Output power, but at  
higher junction temperatures which  
reduces MTTF. GaN is even more fragile  
than LDMOS with many devices only  
rated for 3:1 VSWR.

ELIMINATED PARASITIC BIPOLAR

LDMOS technology creates  
an unintended bipolar device  
in its structure which can  
suddenly conduct under  
certain pulse conditions  
resulting in catastrophic device  
failure in the field. The VIMOS  
structure does not have this  
problem as it was specifically  
designed for pulsed operation..

SUPERIOR THERMAL DESIGN

The VIMOS active area is formed  
at the bottom of the silicon  
substrate very close to the diamond  
heat spreader (DHS).

LDMOS, GaN and Bipolar  
technologies form the active  
area at the top of the semiconductor,  
then sink the heat through the  
semiconductor material, which are  
poor thermal conductors.

# VIMOS™

## ***UHF band, Weather and Long Range Radar Applications ( 48V, 300µs Pulse, 10% Duty Cycle )***

Part Number	Freq(MHZ)	Gain(dB)	RF Power(W)	PSAT(W)
HVV0405-175	420-470	25	175	220
HVV0405-300	420-470	21	300	350
HVV0405-1000	420-470	16	1100	1200

## ***Ground and Air DME, TCAS and IFF Applications ( 48V, 10µs Pulse, 10% Duty Cycle )***

Part Number	Freq(MHZ)	Gain(dB)	RF Power(W)	PSAT(W)
HVV0912-150	960-1215	20	150	200
HVV0912-450	960-1215	18	500	550
HVV0912-800	960-1215	16	800	950
P1000-1215(Pallet)	960-1215	15	950	1100

## ***Airborne DME Applications (48V, 10µs Pulse, 1% Duty Cycle )***

Part Number	Freq (MHZ)	Gain(dB)	RF Power(W)	PSAT(W)
HVV1012-060	1025-1150	20	60	100
HVV1012-250	1025-1150	18	250	300
HVV1012-550	1025-1150	19	550	640
P1000-1215(Pallet)	1025-1150	15	950	1100

## ***TCAS, IFF, SSR and Mode-S Applications ( 48V, 50µs Pulse, 5% Duty Cycle )***

Part Number	Freq (MHZ)	Gain(dB)	RF Power(W)	PSAT(W)
HVV1011-035	1030-1090	21	35	50
HVV1011-300	1030-1090	18	300	325
HVV1011-600	1030-1090	18	750	800
P1000-1215(Pallet)	1030-1090	15	950	1100

## ***Mode S-ELM Interrogator Applications ( 48V, 32µs on/18µs off x 48, repeated every 24ms )***

Part Number	Freq (MHZ)	Gain(dB)	RF Power(W)	PSAT(W)
HVV1011-075L	1030-1090	20	75	90
HVV1011-180L	1030-1090	18	180	200
HVV1011-500L	1030-1090	17	550	600
HVV1011-1000L	1030-1090	16	1000	1300
P1000-1215(Pallet)	1030-1090	15	950	1100

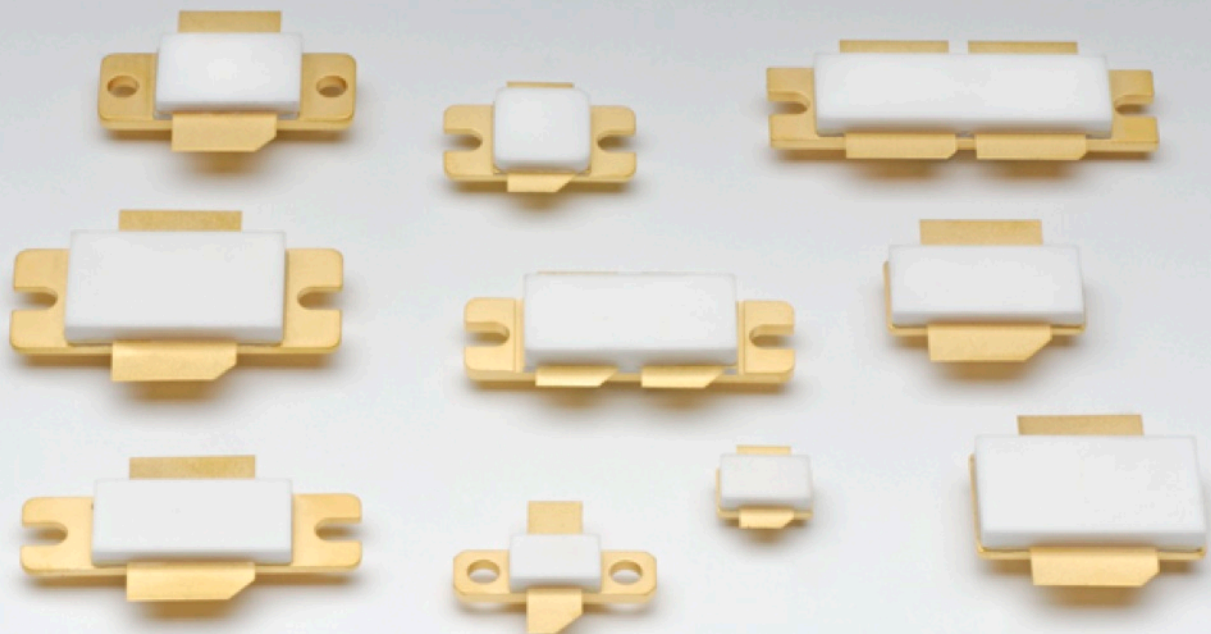
## ***Ground Based Radar Applications ( 48V, 200µs Pulse, 10% Duty Cycle )***

Part Number	Freq (MHZ)	Gain(dB)	RF Power(W)	PSAT(W)
HVV1214-025	1214-1400	19	25	35
HVV1214-140	1214-1400	19	150	200





**L-Band RADAR, IFF, DME, TCAS, SSR, ADS-B, Weather RADAR**



VIMOS™

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