

An Introduction to Polyfet RF Devices



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Who is Polyfet RF Devices?

Established in 1987,
Polyfet RF Devices is a
California based
manufacturer of broadband
LDMOS, VDMOS, and
GaN power transistors and
power modules.



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Polyfet's Financials

- Private corporation
- Profitable each year since inception (1987)
- Own our building and capital equipment
- No long term debt (no bank loans)
- Liquid with respectable cash account



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How does Polyfet size up?

- Have 25 employees
- 7500 (700 square meters) square foot facility
- Annual revenue of roughly \$6.0M
- Automated assembly equipment
- Production capabilities of over 5Kpcs/mo
- Own our masks, use domestic wafer fab
- ISO9000 and MIL I 45208A standards



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What does Polyfet offer to the Market?

- GaN transistors
- LDMOS transistors
- VDMOS transistors
- Broadband Modules
- Linear and non-linear models for simulation
- 4 week lead times
- Application notes
- Custom amplifier and module design service
- Technical support
- Long-Term (15+ years) production support



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Gallium Nitride Transistors

- GaN on SiC technology
- Usable power/gain up to 3GHz
- Output power up to 120W P3dB CW
- Operating voltage across 24 - 50Vdc

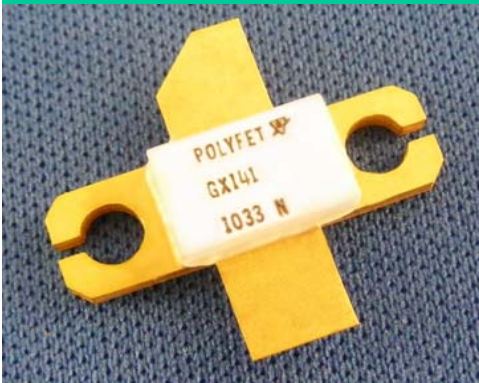


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GaN Device General Specifications



GP041: 8W, 2.5GHz, 10dB, 45%, 48Vdc
GP141: 35W, 2.5GHz, 11dB, 65%, 48Vdc

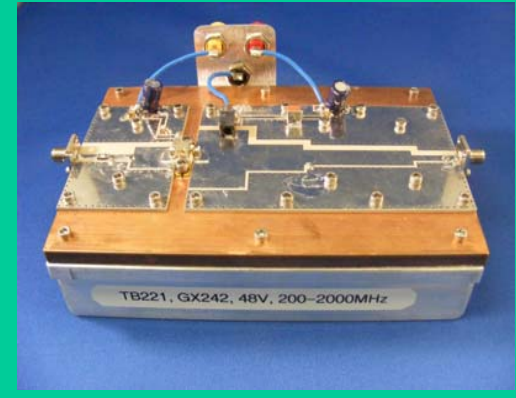
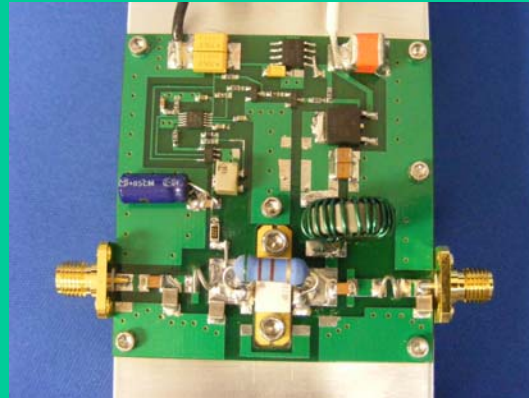
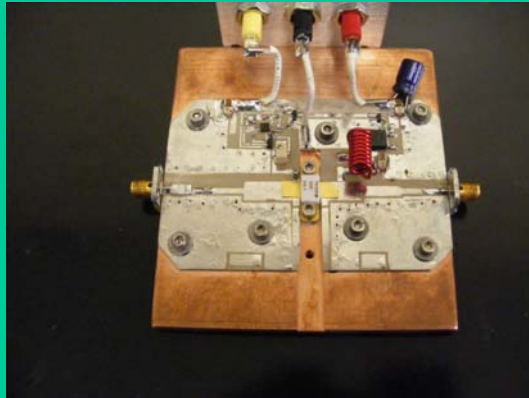


GX141: 35W, 2.5GHz, 11dB, 65%, 48Vdc
GX241: 70W, 2.5GHz, 11dB, 65%, 48Vdc
GX341: 85W, 2.5GHz, 11dB, 65%, 48Vdc
GX242: 120W, 2GHz, 11dB, 65%, 48Vdc



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GaN Evaluation Amplifiers



- (L) GX242: 960-1260MHz, 120W P3dB, 13dB, 40%, 48Vdc
- (M) GX141: 1-1000MHz, 25W P3dB, 12dB, 40%, 48Vdc
- (R) GX242: 225-2000MHz, 60W P3dB, 10dB, 34%, 48Vdc



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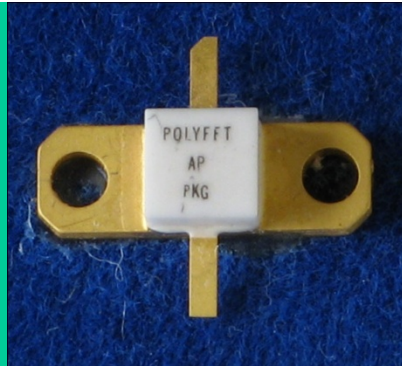


Polyfet LDMOS devices

- Usable power/gain up to 1.5GHz
- Output power up to 600W CW
- Operating voltage across 7.5 - 50Vdc



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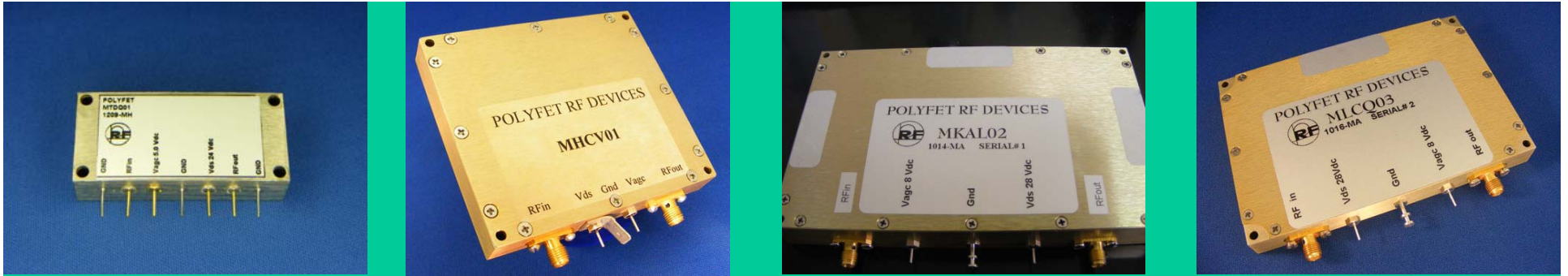


Polyfet VDMOS devices

- Usable power/gain up to 1GHz
- Output power up to 400W CW
- Operating voltage across 12.5 - 50Vdc



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Broadband modules

- Frequency range of 1.6 - 1000MHz
- Output power up to 300W
- Operating voltage across 12 - 28Vdc
- Z_{in}/Z_{out} : 50 ohms
- Connection type: Feed-thru pin or SMA
- Details in “Modules” section of web site



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Product Highlights!

- GX242: 60W, 225-2000MHz, 10dB, 35%, 48Vdc
- MSUV41: 100W, 960-1260MHz, 13dB, 40%, 48Vdc
- MSCQ01: 100W, 30-512MHz, 10dB, 45%, 28Vdc
- LB401: 60W, 20-1000MHz, 10dB, 35%, 28Vdc
- LK141: 25W, 20-512MHz, 13dB, 28Vdc
- LK142: 40W, 20-512MHz, 13dB, 28Vdc
- LR941: 60-80W, 20-512MHz, 11dB, 28Vdc
- LR941: 80-110W, 20-512MHz, 12dB, 50Vdc
- LY942: 600W, 108MHz, 19dB, 50Vdc



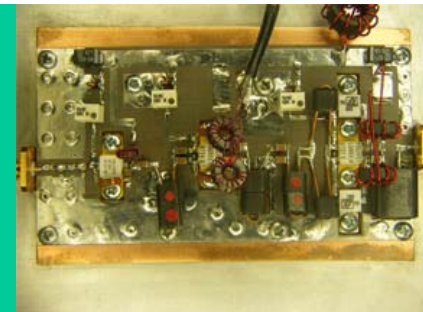
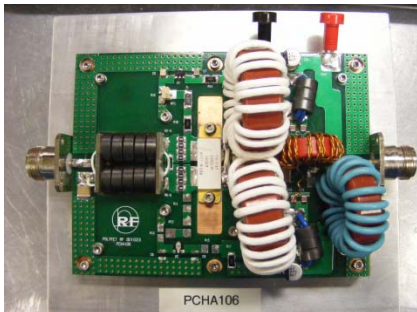
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Linear and non-linear models

- S-parameters for each device
- Spice, ADS, AWR models available
- Simulation design files for extracting Z_{in}/Z_{out}
- Broadband amplifier design file.
- Models found in the “s-parameters and spice models” section of web site



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Technical Bulletins

- Working amplifiers used to demonstrate the performance of our devices
- Free to evaluate
- ACAD pcb layouts with each application note
- Reduces engineering time for customers
- Complete amplifier listing in the “Application Notes” section of web site



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Applications for our Product

- 520-1610kHz (AM)
- 2-30MHz (HF or Short wave)
- 30-88MHz (Military ground comms)
- 54-88MHz (TV VHF I)
- 88-108MHz (FM)
- 118-140MHz (Avionics)
- 136-174MHz (Commercial ground comms)
- 160-230MHz (TV VHF III)
- 30-512MHz (Military: Jammer, Ground/Air comms)
- 470-860MHz (TV UHF)
- 100kHz - 1000MHz (ISM, NMR, Medical, Instrumentation or EMC)
- 1-3GHz (Public communication, jammers, Instrumentation)



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Technical Support

Polyfet understands the complex nature of matching power MOSFETs. Polyfet offers technical assistance to their customers at any time.



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Long-Term Production Support!

Polyfet designs and releases our product with long (15+ years) production cycles in mind. We can/do still deliver product today that we introduced 20 years ago.



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Road Map for Polyfet

Continue to focus on providing high-performing, broad band, power transistors and power modules to the military, commercial, and medical markets. Polyfet will expand its line of GaN devices, while continuing to manufacture VDMOS and LDMOS devices. A new line of 50Vdc LDMOS devices are currently being characterized. Expected release is 4Q2012.



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