Microelectronics Products & Services

Foundry Services
GaAs, InP and GaN Technologies

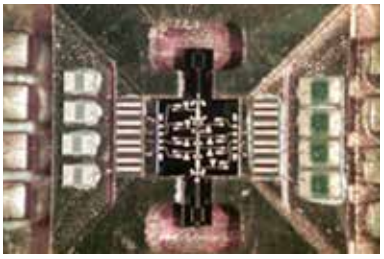
***THE VALUE OF** PERFORMANCE.*

NORTHROP GRUMMAN

Foundry Services

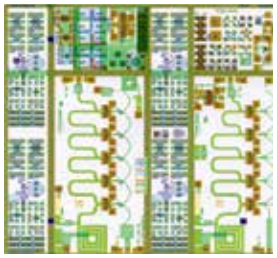
The Northrop Grumman foundry, located in Redondo Beach, California, processes commercial volumes of hetero-junction bipolar transistors (HBT) and high electron mobility transistors (HEMT) for monolithic microwave and millimeter wave integrated circuits (MMICs).

These high-performance circuits are used in established and emerging commercial markets, including cellular and broadband wireless systems, and cutting-edge aerospace, defense and scientific applications.



300 GHz HBT and HEMT

Indium Phosphide (InP) wafer and amplifier



Fully Integrated GaN MMIC Technology

Foundry Capabilities

- Advanced process technologies that enable differentiating MMIC and system performance
- In-house multi-wafer Molecular Beam Epitaxy for precision control of device doping profiles
- Process Design Kits with synchronized layout and model sets optimized to millimeter wave, low noise and power applications
- Mature and reliable processes
- Stability of defense critical DoD Trusted Foundry
- Volume wafer fabrication facilities
- Multi-customer shared mask foundry runs
- On-wafer RF testing beyond 110 GHz

Parameter/ Technology	1µm power InP TF2P (HBT)	0.8 µm digital InP TF2 (2Met, HBT)	0.6 µm digital InP TF4 (4Met, HBT)	0.15 µm GaAs PHEMT (P3H)	0.1 µm GaAs PHEMT (P3K, P3D)	0.1 µm InP PHEMT (N60D)	0.20 µm GaN HEMT (GAN20)
Ft (peak)	80 GHz	160 GHz	>250 GHz	80 GHz	120 GHz	180 GHz	60 GHz
Fmax (peak)	150 GHz	>200 GHz	>300 GHz	200 GHz	250 GHz	350 GHz	200 GHz
Beta/Gm	25	80	80	550 mS/mm	650 mS/mm	1200 mS/mm	325 mS/mm
Vce/Vds (Max)	7.5V	5V	4V	5V	4V	1.2V	28V
Wafer Thickness	75 µm	75 µm	75 µm	50 & 100 µm	50 & 100 µm	75 µm	100 µm
Airbridged Metal Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Backside Vias	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Diode Type	Schottky	Schottky	Schottky	Gate Source	Gate Source	Gate Source	NA
Wafer Size	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm	100mm

Note: Northrop Grumman reserves the right to change without notice the specifications, designs or conditions of sale. Products represented in this data sheet are subject to Export Administration Regulations (EAR).

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