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Infineon HiRel

High Reliability products for Space use

ESCON March 2011



Never stop thinking

HiRel @ Infineon

- Infineon manufactures and sells HiRel components for over 40 years
- Key to outstanding performance is assembly of qualified standard dies in hermetically sealed packages using HiRel assembly techniques
- HiRel screening towards four quality / testing levels:
 - "P" for professional level (also used for engineering models)
 - "H" for high reliability level (for MIL / Avionics work)
 - "S" for space level (for commercial satellites)
 - "ES" for ESA space level (for ESA satellites)
- Dedicated Space qualification
 - Qualification data from standard production (e.g. Automotive)
 - Initial Space Qualification of pilot types for each device family
 - Delta Qualification of all family members



Infineon HiRel portfolio

■ Silicon Diodes

- Schottky diodes
- PIN diodes

BAS40; BAS70
BXY43; BXY44

■ GaAs Microwave devices

- K-band HEMTs
- L- & S-band MMICs

CFY67
CGY41

■ Silicon Bipolar Microwave Transistors

- conventional MW transistors
- SIGET MW transistors
- SiGe MW transistors

BFY181, 182, 183; BFY193, 196
BFY420; BFY450
BFY640

■ HiRel development projects

- AF diodes in HSL2 package
- Latest SiGe:C transistor technology
- Rad-hard MOSFETs up to 250V

BAY6642
BFY640B, 650B, 740B
BUY25 CSJ, BUY25 CSA

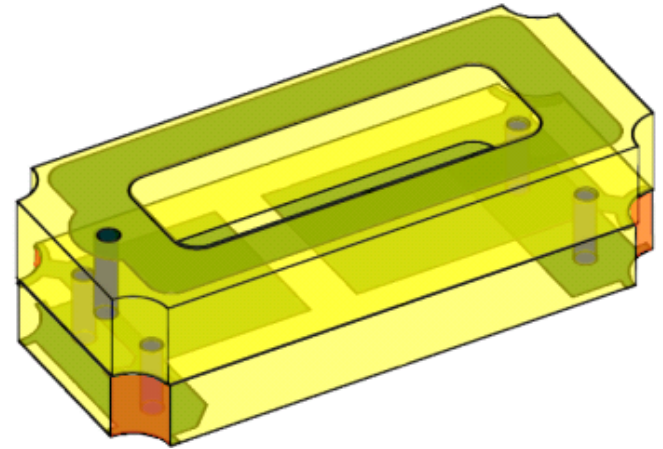


New Products

AF Diode BAY6642



- AF multiple purpose diode
- Generated out of Infineon diode BAS16
- Package HSL2-1808
- Redesign of current diode
 - Increase of the active area and possible current throughput.
 - Decrease of Die R_{th}
 - New bondpads for Al wire bonding
 - Purple plague resistant
 - Improved layout for better yield in visual HiRel Die inspection
- Replaces 1N6639 to 1N6643



Samples
available

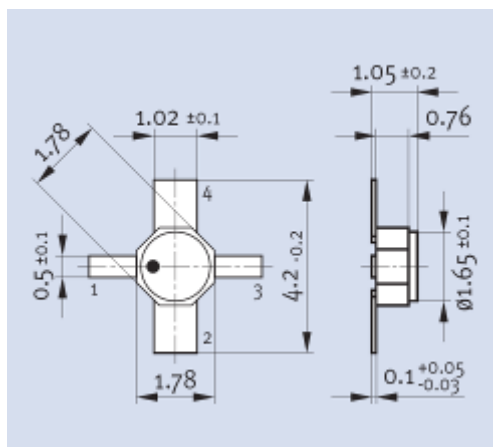
New Products

MW Transistor BFY640B/650B/740B

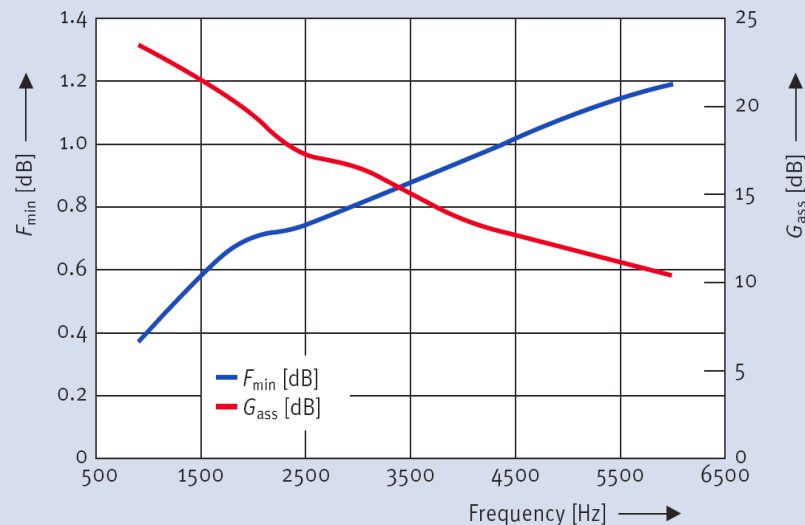


- MW high-end low noise transistors
- Generated out of Infineon standard transistor
- Package MicroX
- Infineon's latest SiGe:C technology

Samples
available



BFY640 Gain and NF versus Frequency



- Maximum stable gain of $>24\text{dB}$ @ 1,8GHz
- Very low noise figure of $<0,8\text{dB}$ @ 1,8 GHz

Target Application

Samples
Available
in Q2 2011

- High reliability applications for space market.
- Drop-in for existing products (mainly IR)
- Buck/Boost schematics, freewheeling diode, DC/DC, switch mode
- Switch with low losses

Target Product

- Based on CoolMOS© technology
- Target types:
 - 130mΩ, 12A in SMD0.5
 - 25mΩ, 47A in SMD2
- Radiation-hardened GOX against TiD failures
V_{th} drift within specification up to 100krad
- Target SEE hardness
UDS=250V/UGS-5V @ LET > 60 (Tested: LET73)
- Package: SMD0.5/SMD2 hermetically sealed



SMD2



SMD0.5

Competition

200V Types:

XXHNA67260 or XXHNA57260SE

XXHNJ67230 or XXHNJ57230

250V Types:

:

XXHNA67264 or XXHNA57264SE

XXHNJ67234 or XXHNJ57234SE

Infineon

→ BUY25CSA

→ BUY25CSJ

→ BUY25CSA

→ BUY25CSJ

Contact

Find out more about the Infineon HiRel products at:

www.infineon.com/hirel

For any questions regarding:

Qualification status; Lead times; Pricing; Product; Customized development

Please contact

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