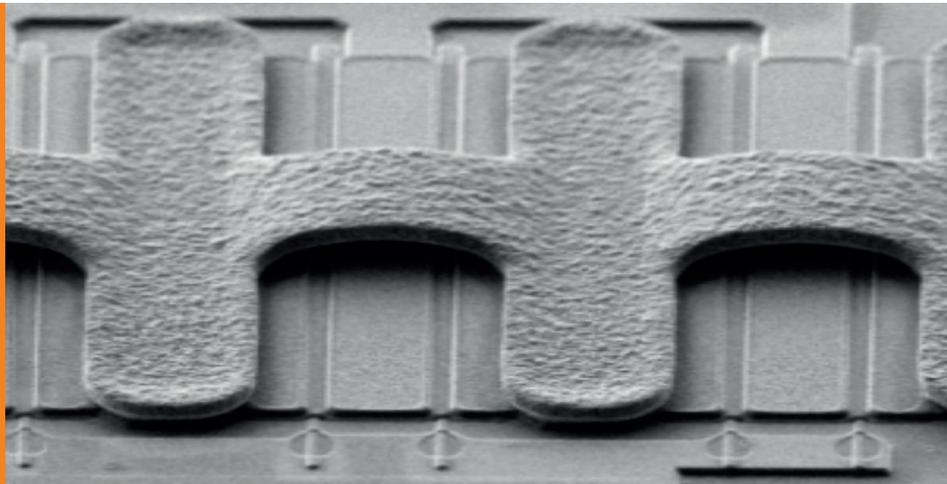


## 0.10 $\mu$ m GH10-10 HEMTs Process



Based on 100nm Gate length, GH10-10 is optimized to address high frequency applications up to V-band as well as deliver improved linearity and power efficiency at Q-bands and below.

### ■ Main Process Features

Parameter	Typical value
$I_{dss}$ (mA/mm) $V_{ds}=7V, V_{gs}=3V$	1550
$GM_{max}$ (mS/mm) $V_{ds}=7V, V_{gs}=[-5V, 1V]$	540
VBD(V)	>70V
MIM density	175 & 355 pF/mm <sup>2</sup>

### ■ Noise Performance

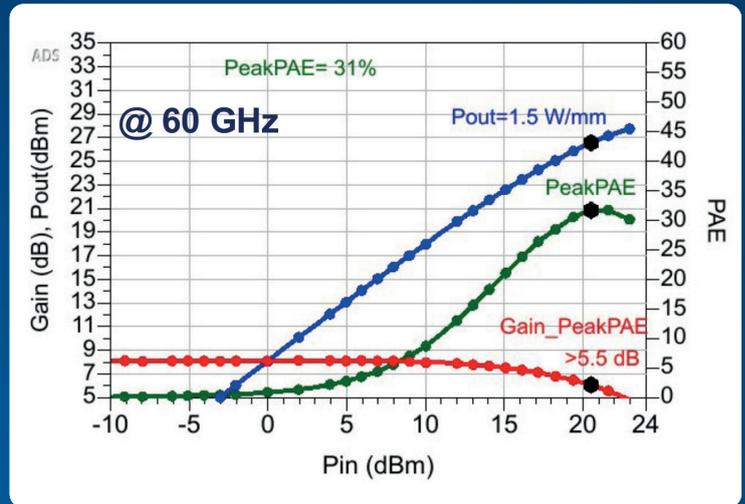
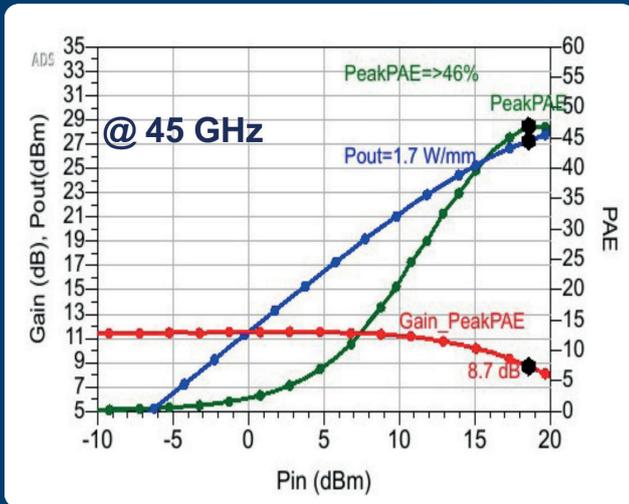
Frequency	NFmin	Gain
20 GHz	1.3 dB	12 dB
30 GHz	1.8 dB	9 dB
40 GHz	2.4 dB	8 dB

### ■ Main GH10-10 achievements at Q-band

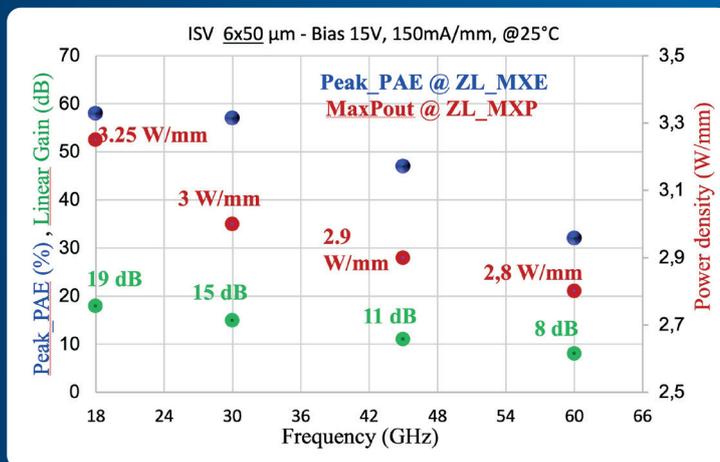
@(15V, 150mA/mm)	ZLoad	@18GHz	@30GHz	@45GHz	@60GHz
Saturated power density (W/mm)	Opt Pout	3.25	3	2.9	2.8
Linear gain (dB)		18	14	11	8
PAE_max (%)	Opt PAE	57	56	47	32
Associated power gain (dB)		14	11	8	5.5



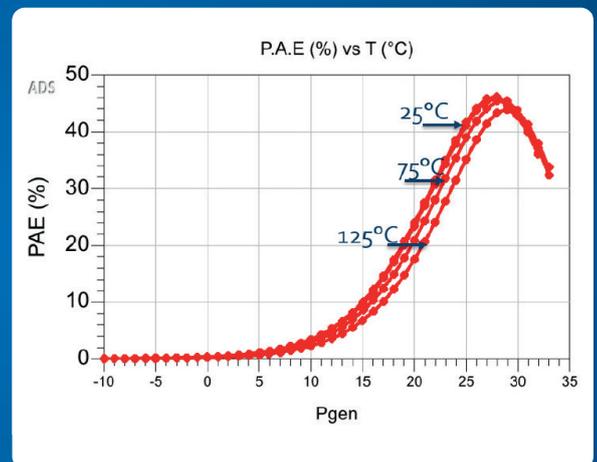
## ■ Main GH10 achievement over Q-band



## ■ Promising Results vs Frequency



## ■ Thermal Behaviour



Very Low impact of the temperature up to 125°C

## ■ Process Design Kit (PDK)

Includes non-linear electro-thermal, noise, switch and passive models – all with associated library elements

## ■ BCB Option

Available for mechanical protection for plastic molded packaging

> Successfully qualified!



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