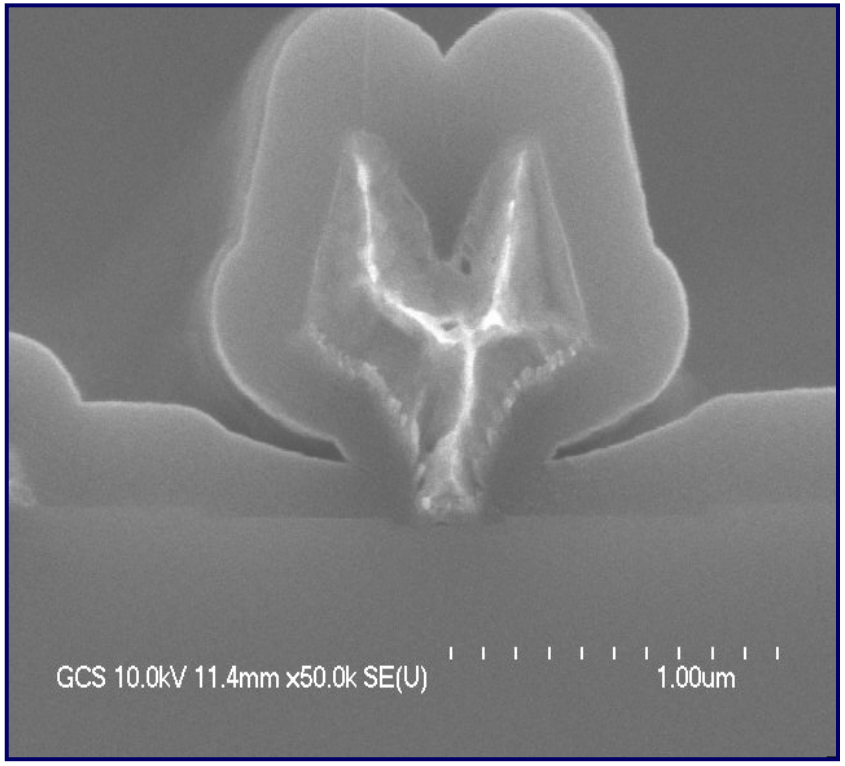
0.25μm T-Gate PHEMT Power Process

GCS' 0.25um T-Gate PHEMT features:

- **Low-cost optical stepper lithography process**
- **Extremely high fmax (>200GHz)**
- **Very high breakdown voltage (>20V)**



Device Parameters	Typical Values
Idss @Vgs=2V	270mA/mm
Imax @Vgs=0.9V	500mA/mm
Vp @ Ids=1mA/mm	-1V
gm @ Vgs=-0.3V	330mS/mm
BVgd @ Igd=1mA/mm	>20V

RF Performance of 0.25μm PHEMT

Small Signal Performance

- f_T > 60 GHz
- f_{max} > 200 GHz
- G_{max} > 15 dB at 40 GHz

Large Signal Performance

Frequency	(GHz)	2		30	
Vds	(V)	8	10	3.5	6
Sat. Power	(mW/mm)	650	840	180	400
Assoc. Gain	(dB)	15	17	9.0	9.4
P.A.E.	(%)	60	50	56.0	41.4