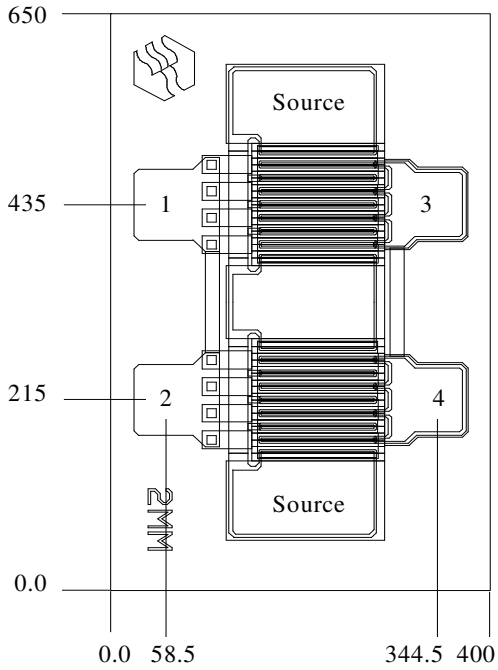
Features

- **Low Cost GaAs Power FET**
- **Class A or Class AB Operation**
- **11 dB Typical Gain at 4 GHz**
- **5V to 10V Operation**

Description

The HWC27NC is a medium power GaAs FET designed for various L-band & S-band applications.

Outline Dimensions



Unit: µm
Thickness: 100 ± 5
Chip size ± 50
Bond Pads 1-2 (Gate): 60 x 60
Bond Pads 3-4 (Drain): 60 x 60

Absolute Maximum Ratings

V_{DS}	Drain to Source Voltage	+15V
V_{GS}	Gate to Source Voltage	-5V
I_D	Drain Current	I_{DSS}
I_G	Gate Current	2mA
T_{CH}	Channel Temperature	175°C
T_{STG}	Storage Temperature	-65 to +175°C
P_T^*	Power Dissipation	3.5W

* mounted on an infinite heat sink

Electrical Specifications (T_A=25°C) f = 4 GHz for all RF Tests

Symbol	Parameters & Conditions	Units	Min.	Typ.	Max.
I_{DSS}	Saturated Current at V_{DS}=3V, V_{GS}=0V	mA	300	400	600
V_P	Pinch-off Voltage at V_{DS}=3V, I_D=20mA	V	-3.5	-2.0	-1.5
gm	Transconductance at V_{DS}=3V, I_D=200mA	mS	-	250	-
P_{1dB}	Power Output at Test Points V_{DS}=10V, I_D=0.5 I_{DSS}	dBm	27	28	-
G_{1dB}	Gain at 1dB Compression Point V_{DS}=10V, I_D=0.5 I_{DSS}	dB	9	10	-
PAE	Power-Added Efficiency (P_{OUT} = P_{1dB}) V_{DS}=10V, I_D=0.5 I_{DSS}	%	30	40	-

Small Signal Common Source Scattering Parameters

S-MAGN AND ANGLES

V_{DS}=10V, I_{DS}=0.5I_{DSS}

(GHz)	IS11I	∠ANG	IS21I	∠ANG	IS12I	∠ANG	IS22I	∠ANG
2.00	0.845	-115.62	4.702	103.80	0.028	71.07	0.236	-49.89
2.50	0.839	-126.96	3.921	95.65	0.032	71.05	0.246	-55.54
3.00	0.839	-135.39	3.336	88.67	0.037	72.49	0.257	-62.80
3.50	0.837	-141.73	2.896	82.57	0.042	72.98	0.275	-68.12
4.00	0.834	-147.23	2.551	77.03	0.045	74.32	0.291	-73.17
4.50	0.832	-151.60	2.278	72.18	0.048	76.58	0.309	-79.08
5.00	0.828	-155.23	2.052	67.94	0.052	77.92	0.327	-82.34
5.50	0.827	-158.30	1.879	63.92	0.056	80.91	0.336	-85.76
6.00	0.827	-161.00	1.720	59.95	0.061	83.84	0.352	-89.00
6.50	0.827	-163.08	1.588	56.32	0.066	85.29	0.365	-91.68
7.00	0.829	-165.07	1.475	52.75	0.070	86.33	0.384	-94.59
7.50	0.827	-167.18	1.370	49.09	0.077	87.32	0.399	-97.11
8.00	0.830	-169.65	1.279	45.84	0.083	89.28	0.418	-100.45
8.50	0.828	-171.56	1.204	42.82	0.089	89.60	0.440	-102.74
9.00	0.827	-173.63	1.136	39.47	0.096	89.96	0.456	-105.73
9.50	0.827	-175.28	1.077	36.43	0.104	90.23	0.467	-107.27
10.00	0.825	-176.45	1.019	33.25	0.110	91.35	0.475	-111.08

Bonding Manner

Gate, drain pad: 1 wire on each pad
Source pad: 2 wires on each side