

Features

- Low Cost GaAs Power FET
- Class A or Class AB Operation
- 17 dB Typical Gain at 2.4 GHz
- 5V to 10V Operation

Description

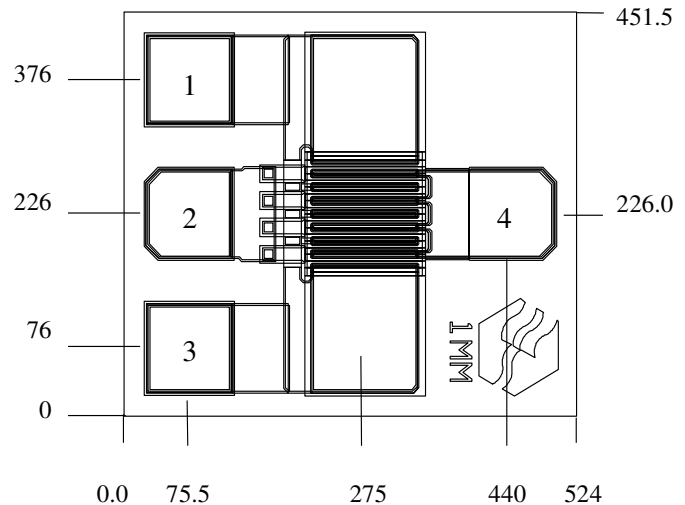
The HWL26NC is a medium power GaAs FET designed for various L-band & S-band applications.

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	1 mA
T_{CH}	Channel Temperature	175°C
T_{STG}	Storage Temperature	-65 to +175°C
P_T^*	Power Dissipation	1.7 W

* mounted on an infinite heat sink

Outline Dimensions



Units: μm

Thickness: 50 ± 5

Chip size ± 50

Bond Pad 1, 3 (Source): 100×100

Bond Pad 2 (Gate): 100×100

Bond Pad 4 (Drain): 100×100

Electrical Specifications ($T_A=25^\circ\text{C}$) $f = 2.4 \text{ GHz}$ for all RF Tests

Symbol	Parameters & Conditions	Units	Min.	Typ.	Max.
I_{DSS}	Saturated Current at $V_{DS}=3\text{V}$, $V_{GS}=0\text{V}$	mA	150	200	280
V_P	Pinch-off Voltage at $V_{DS}=3\text{V}$, $I_D=10 \text{ mA}$	V	-3.5	-2.0	-1.5
g_m	Transconductance at $V_{DS}=3\text{V}$, $I_D=100 \text{ mA}$	mS	-	120	-
P_{1dB}	Power Output at Test Points $V_{DS}=10\text{V}$, $I_D=0.5 I_{DSS}$	dBm	25	26	-
G_{1dB}	Gain at 1dB Compression Point $V_{DS}=10\text{V}$, $I_D=0.5 I_{DSS}$	dB	15	16	-
PAE	Power-Added Efficiency ($P_{OUT} = P_{1dB}$) $V_{DS}=10\text{V}$, $I_D=0.5 I_{DSS}$	%	30	40	-

Small Signal Common Source Scattering Parameters

S-MAGN AND ANGLES

VDS=10V, IDS=0.5I_{DSS}

(GHz)	IS11I	∠ANG	IS21I	∠ANG	IS12I	∠ANG	IS22I	∠ANG
0.50	0.937	-31.59	7.266	154.62	0.009	67.60	0.621	-5.05
0.60	0.913	-36.66	7.019	150.87	0.010	71.96	0.627	-6.70
0.70	0.914	-43.76	6.853	147.84	0.012	70.20	0.621	-6.50
0.80	0.879	-48.51	6.665	143.96	0.013	65.51	0.631	-8.01
0.90	0.876	-52.96	6.500	140.47	0.016	62.61	0.618	-10.42
1.00	0.877	-58.75	6.372	137.32	0.016	60.98	0.607	-11.30
1.10	0.841	-62.64	6.141	133.92	0.018	60.19	0.613	-12.88
1.20	0.836	-67.67	5.941	130.86	0.018	57.63	0.604	-13.41
1.30	0.829	-72.48	5.765	128.22	0.019	56.57	0.602	-14.06
1.40	0.808	-76.57	5.593	125.43	0.020	56.60	0.604	-14.73
1.50	0.801	-80.99	5.405	122.53	0.020	53.30	0.596	-15.07
1.60	0.789	-84.77	5.260	120.03	0.022	53.04	0.597	-16.45
1.70	0.774	-88.31	5.086	117.70	0.022	53.41	0.599	-17.17
1.80	0.764	-92.13	4.922	115.31	0.023	51.56	0.595	-17.33
1.90	0.749	-95.65	4.763	112.97	0.023	50.83	0.593	-17.88
2.00	0.742	-98.77	4.627	110.70	0.024	50.81	0.590	-18.69
2.10	0.735	-102.05	4.501	108.73	0.024	49.19	0.589	-19.45
2.20	0.730	-105.18	4.379	106.93	0.025	49.32	0.592	-19.67
2.30	0.719	-108.16	4.224	104.69	0.025	48.70	0.583	-20.02
2.40	0.712	-111.27	4.112	102.73	0.025	47.52	0.581	-20.34
2.50	0.704	-113.87	3.994	100.83	0.026	48.07	0.576	-20.97
2.60	0.702	-116.48	3.885	99.36	0.025	48.93	0.576	-21.26
2.70	0.699	-119.17	3.793	97.68	0.026	47.71	0.578	-22.09
2.80	0.691	-121.69	3.698	96.00	0.026	46.92	0.576	-22.52
2.90	0.685	-124.07	3.594	94.13	0.027	48.15	0.568	-23.27
3.00	0.682	-126.73	3.509	92.49	0.027	47.53	0.566	-23.60
3.10	0.677	-128.66	3.420	90.96	0.027	46.75	0.566	-24.01
3.20	0.673	-131.03	3.339	89.48	0.028	47.21	0.566	-24.41
3.30	0.669	-133.03	3.269	87.98	0.027	46.44	0.564	-25.09
3.40	0.666	-135.18	3.189	86.58	0.028	47.13	0.558	-25.64
3.50	0.660	-136.94	3.118	85.05	0.028	47.88	0.557	-26.20
3.60	0.659	-138.99	3.052	83.73	0.028	47.91	0.559	-26.72
3.70	0.655	-141.20	2.976	82.18	0.029	48.50	0.551	-27.39
3.80	0.654	-142.72	2.925	80.79	0.030	49.20	0.556	-28.40
3.90	0.654	-144.89	2.864	79.38	0.029	48.35	0.551	-29.00
4.00	0.649	-146.36	2.805	78.25	0.029	49.49	0.548	-29.68

Bonding Manner

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