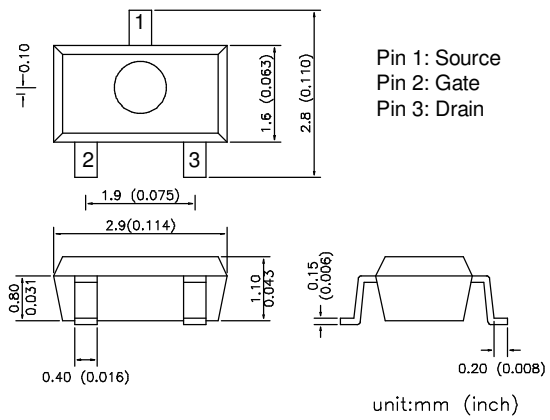
Features

- **Plastic Packaged GaAs Power FET**
- **Suitable for Commercial Wireless Applications**
- **High Efficiency**
- **3V to 6V Operation**

Outline Dimensions



Pin 1: Source
Pin 2: Gate
Pin 3: Drain

PB Package (SOT-23)

Description

The HWL26NPB is a medium Power GaAs FET using surface mount type plastic package for various L-Band applications. It is suitable for various 900 MHz, 1900 MHz cellular/wireless applications.

Absolute Maximum Ratings

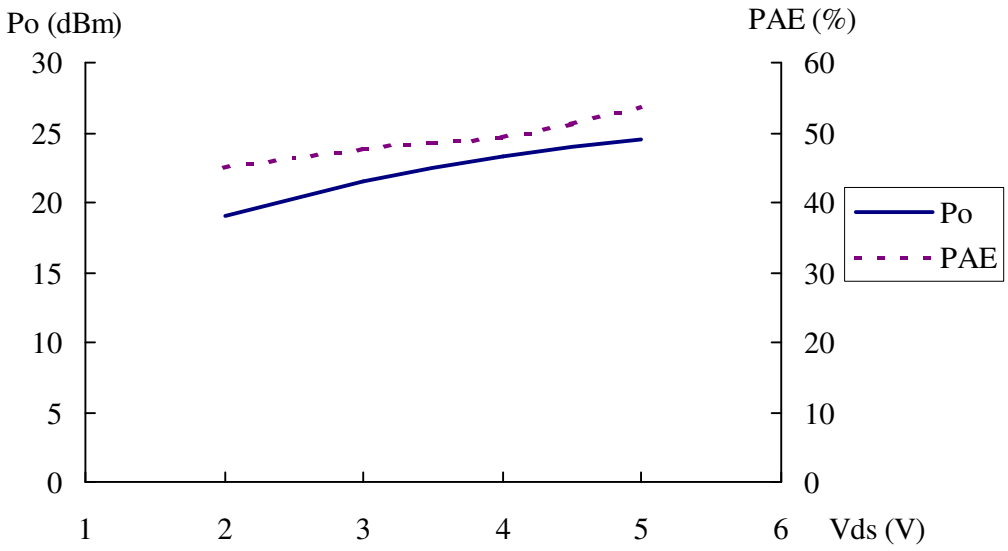
V_{DS}	Drain to Source Voltage	+7V
V_{GS}	Gate to Source Voltage	-5V
I_D	Drain Current	I_{DSS}
I_G	Gate Current	1mA
T_{CH}	Channel Temperature	150°C
T_{STG}	Storage Temperature	-65 to +150°C
P_T	Power Dissipation	0.7 W

Electrical Specifications (T_A=25°C) f=1900 MHz for all RF Tests

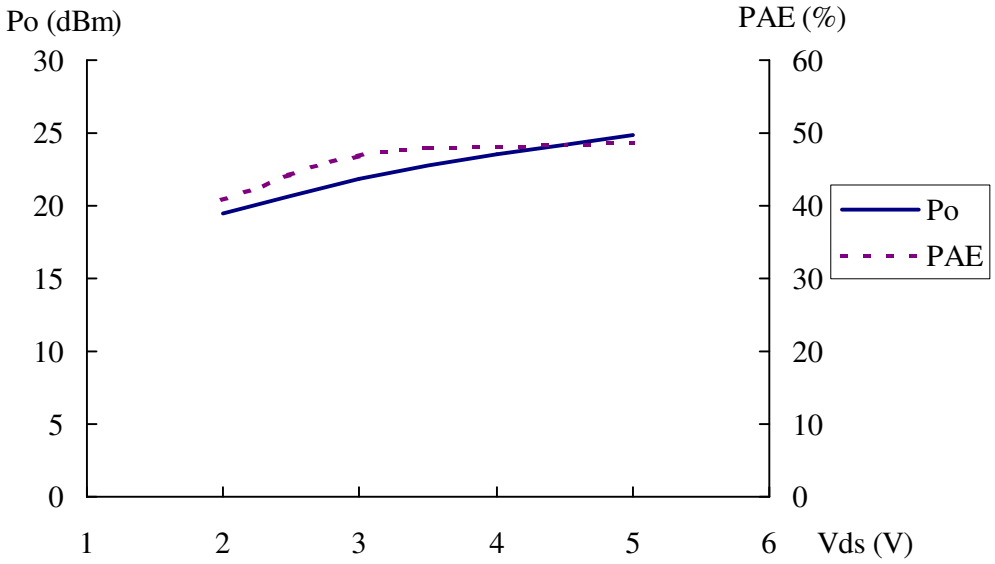
Symbol	Parameters & Conditions	Units	Min.	Typ.	Max.
I_{DSS}	Saturated Current at V_{DS}=5V, V_{GS}=0V	mA	150	220	-
V_P	Pinch-off Voltage at V_{DS}=5V, I_D=11mA	V	-3.5	-2.0	-1.5
gm	Transconductance at V_{DS}=5V, I_D=110mA	mS	-	120	-
R_{th}	Thermal Resistance	°C/W	-	100	-
P_{1dB}	Power Output at Test Points V_{DS}=3V, I_D=0.5I_{DSS} V_{DS}=5V, I_D=0.5I_{DSS}	dBm	 21.0 23.0	 21.5 24.5	 - -
G_{1dB}	Gain at 1dB Compression Point V_{DS}=3V, I_D=0.5I_{DSS} V_{DS}=5V, I_D=0.5I_{DSS}	dB	 9.0 10.0	 10.0 11.0	 - -
PAE	Power-Added Efficiency (P_{OUT} = P_{1dB}) V_{DS}=3V, I_D=0.5I_{DSS} V_{DS}=5V, I_D=0.5I_{DSS}	%	 	 40.0 45.0	 - -

Typical Performance at 25°C

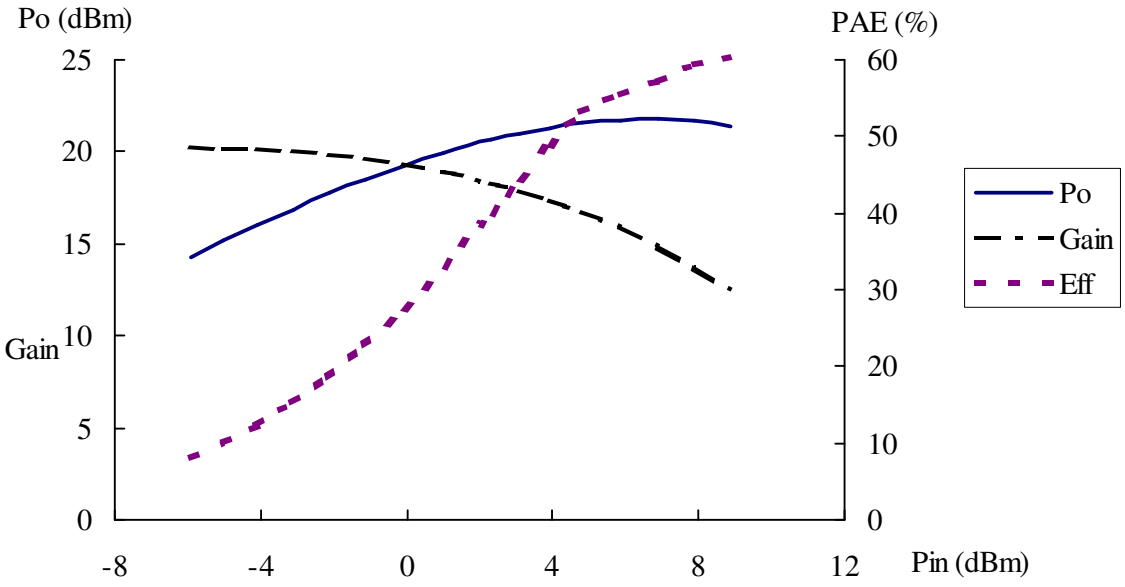
Output Power & Efficiency vs Vds
@ f=0.9GHz,Ids=110mA



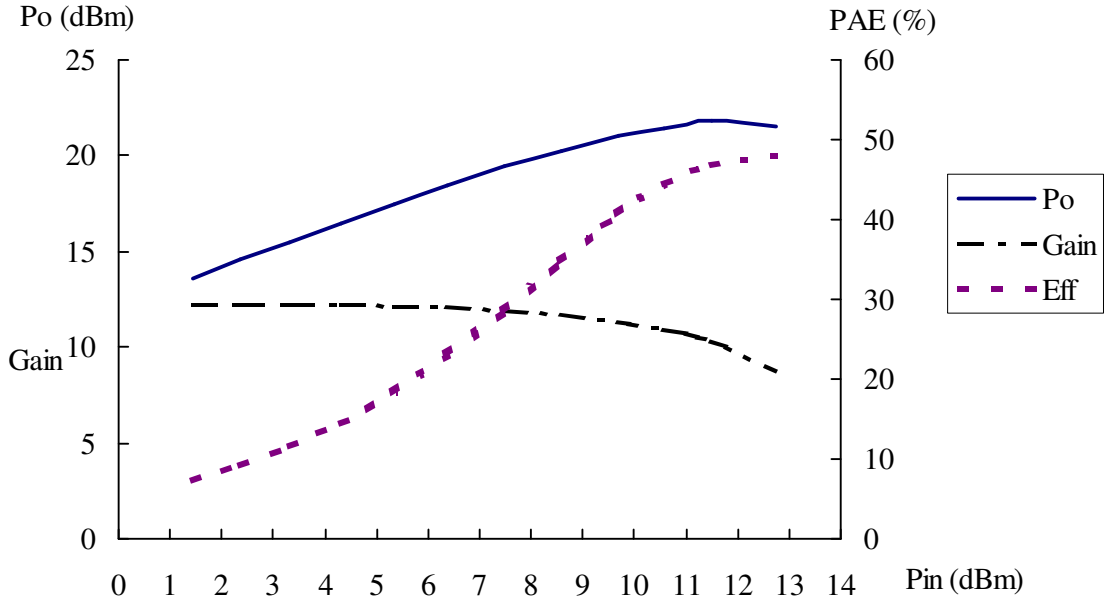
Output Power & Efficiency vs Vds
@ f=1.9GHz,Ids=110mA



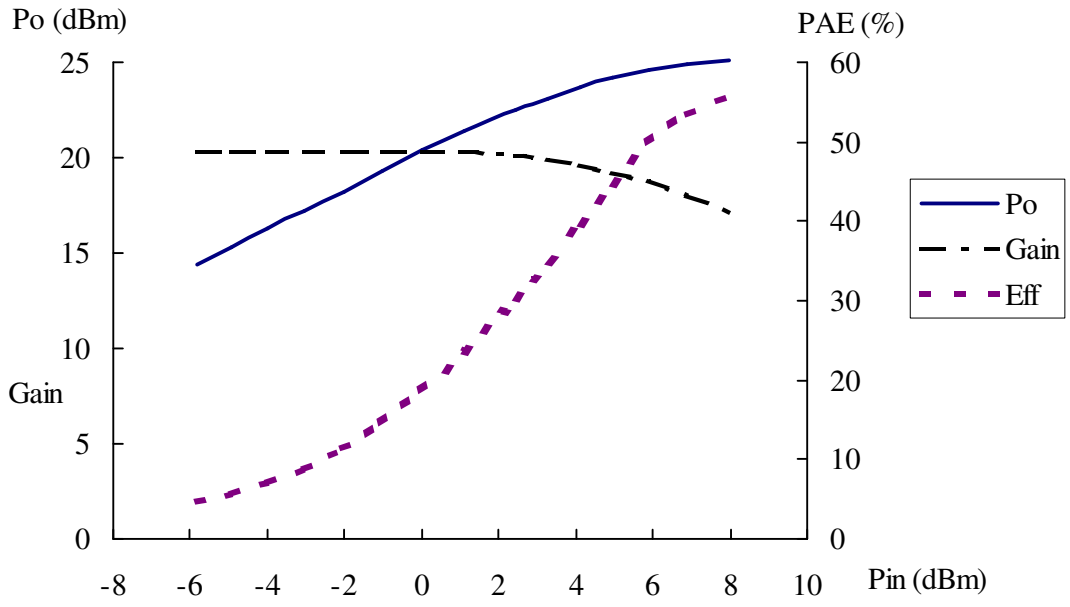
Output Power & Efficiency & Gain vs Input Power
@ f=0.9GHz, Vds=3V



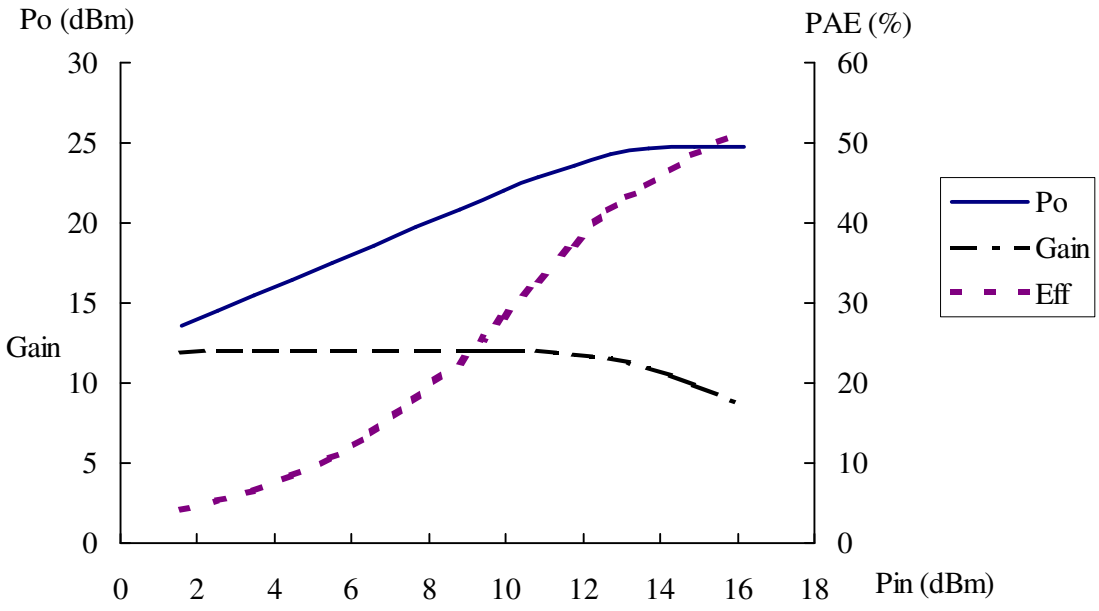
Output Power & Efficiency & Gain vs Input Power
@ f=1.9GHz, Vds=3V



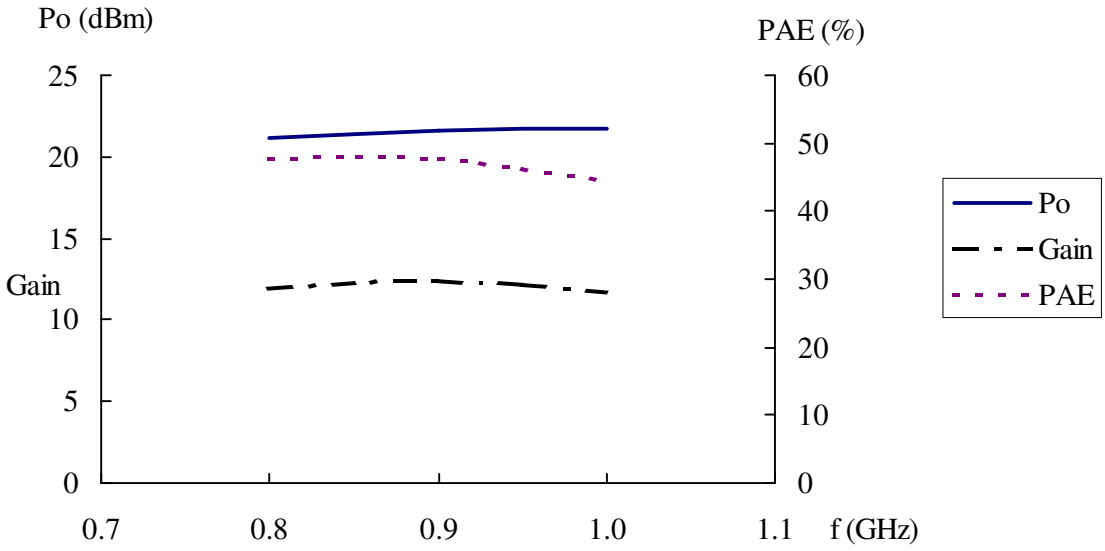
Output Power & Efficiency & Gain vs Input Power
@ f=0.9GHz, Vds=5V



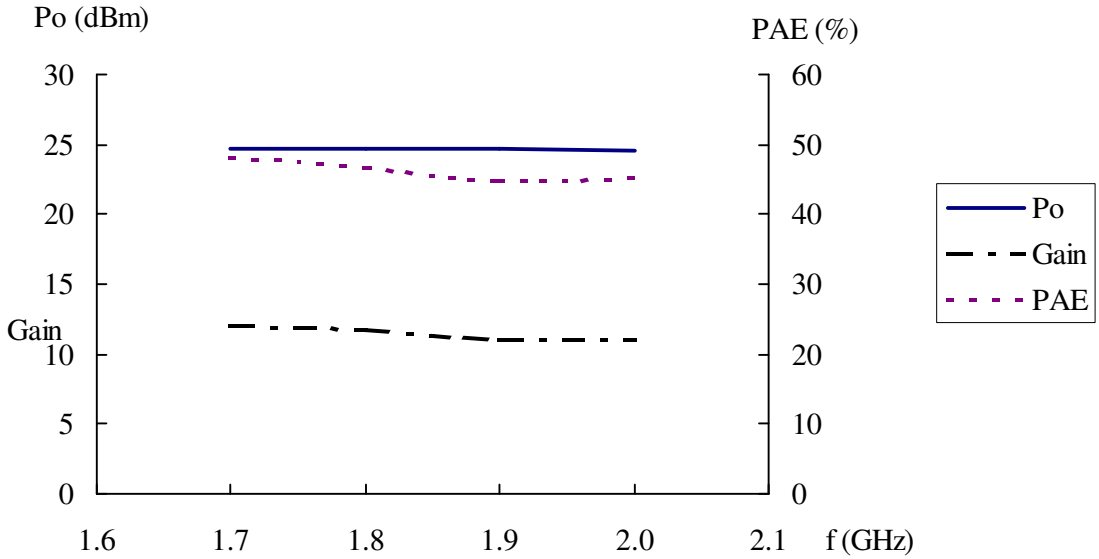
Output Power & Efficiency & Gain vs Input Power
@ f=1.9GHz, Vds=5V



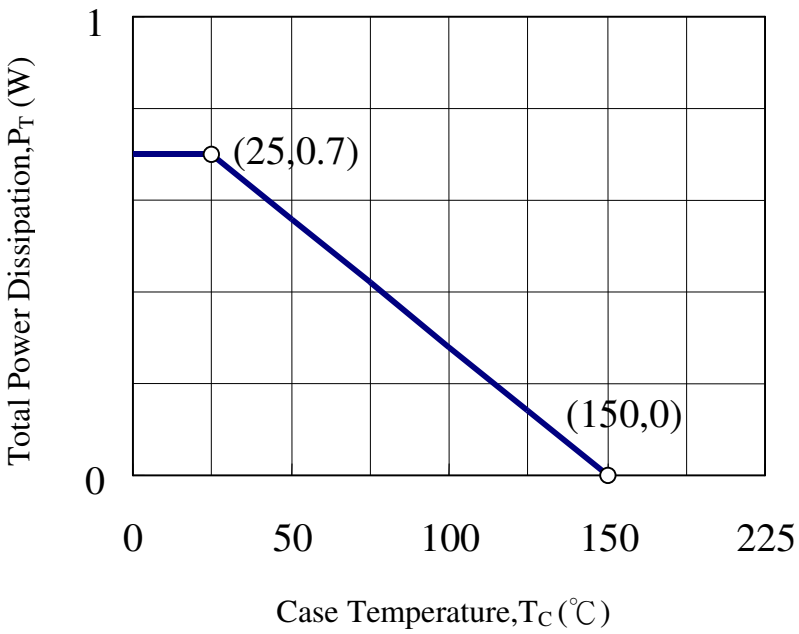
Output Power & Efficiency & Gain vs Frequency
@ Vds=3V, Ids=110mA



Output Power & Efficiency & Gain vs Frequency
@ Vds=5V, Ids=110mA



Power Derating Curve



Small Signal Common Source Scattering Parameters

S-MAGN AND ANGLES

V_{DS}=3V, I_{DS}=0.5I_{DSS}

(GHz)	IS11I	∠ANG	IS21I	∠ANG	IS12I	∠ANG	IS22I	∠ANG
0.70	0.852	-45.16	6.569	139.76	0.034	78.69	0.365	-7.33
0.80	0.838	-50.62	6.407	135.18	0.038	77.75	0.366	-10.69
0.90	0.792	-57.11	6.197	130.67	0.043	76.01	0.361	-10.33
1.00	0.771	-62.51	5.979	125.61	0.046	75.65	0.343	-13.91
1.10	0.737	-68.57	5.765	121.30	0.051	74.78	0.340	-14.06
1.20	0.709	-74.22	5.553	117.28	0.055	73.97	0.327	-14.50
1.30	0.680	-79.64	5.332	113.10	0.059	73.15	0.314	-16.26
1.40	0.655	-84.94	5.160	109.33	0.063	72.08	0.313	-16.89
1.50	0.634	-90.22	4.944	105.60	0.067	71.52	0.295	-18.69
1.60	0.610	-95.29	4.788	102.08	0.070	70.86	0.291	-20.05
1.70	0.594	-100.33	4.590	98.84	0.074	69.88	0.277	-21.10
1.80	0.577	-105.26	4.411	95.45	0.079	68.43	0.269	-22.33
1.90	0.563	-109.91	4.251	92.34	0.083	68.26	0.259	-23.24
2.00	0.550	-114.47	4.091	89.24	0.085	66.88	0.255	-25.65
2.10	0.539	-118.36	3.956	87.04	0.087	67.25	0.264	-26.72
2.20	0.530	-122.86	3.863	84.19	0.091	66.75	0.248	-27.74
2.30	0.518	-126.15	3.734	81.65	0.095	66.03	0.245	-28.92
2.40	0.512	-129.86	3.607	79.03	0.100	65.10	0.236	-30.17
2.50	0.502	-133.25	3.498	76.52	0.100	65.41	0.248	-31.31
2.60	0.498	-136.45	3.414	74.44	0.103	65.37	0.249	-33.33
2.70	0.493	-139.43	3.316	71.73	0.108	63.76	0.233	-34.51
2.80	0.489	-142.25	3.227	69.73	0.113	63.88	0.235	-36.37
2.90	0.484	-145.43	3.125	67.19	0.117	63.15	0.223	-37.89
3.00	0.476	-148.68	3.054	65.02	0.117	63.33	0.246	-38.91

S-MAGN AND ANGLES

V_{DS}=5V, I_{DS}=0.5I_{DSS}

(GHz)	IS11I	∠ANG	IS21I	∠ANG	IS12I	∠ANG	IS22I	∠ANG
0.7	0.825	-42.252	6.263	133.606	0.039	81.786	0.419	-7.727
0.8	0.769	-47.655	5.963	128.049	0.044	81.199	0.424	-6.680
0.9	0.729	-52.237	5.737	122.885	0.050	80.755	0.426	-9.362
1.0	0.687	-56.789	5.502	117.922	0.055	77.832	0.423	-11.601
1.1	0.654	-61.609	5.246	113.612	0.060	77.832	0.421	-9.403
1.2	0.618	-66.532	5.018	108.590	0.066	75.990	0.403	-11.206
1.3	0.580	-70.139	4.813	104.780	0.072	75.660	0.412	-11.638
1.4	0.553	-73.857	4.626	100.689	0.077	73.599	0.401	-13.466
1.5	0.513	-78.045	4.436	96.782	0.082	73.032	0.404	-14.595
1.6	0.488	-81.656	4.270	92.983	0.089	71.453	0.395	-16.103
1.7	0.455	-84.840	4.102	89.628	0.095	70.808	0.394	-16.862
1.8	0.430	-89.067	3.955	86.122	0.099	69.222	0.387	-17.974
1.9	0.405	-92.816	3.822	82.645	0.105	67.634	0.384	-19.888
2.0	0.381	-96.275	3.702	79.500	0.111	66.740	0.378	-21.572
2.1	0.357	-99.787	3.566	76.269	0.117	65.899	0.371	-22.786
2.2	0.336	-103.803	3.457	73.178	0.123	64.208	0.367	-24.877
2.3	0.313	-107.867	3.348	70.291	0.128	63.071	0.359	-26.341
2.4	0.294	-112.058	3.250	67.164	0.135	61.964	0.357	-27.997
2.5	0.274	-116.074	3.151	64.479	0.140	60.489	0.348	-29.149
2.6	0.258	-120.528	3.059	61.696	0.146	59.346	0.346	-30.774
2.7	0.243	-125.779	2.976	58.966	0.152	58.126	0.336	-32.702
2.8	0.231	-130.737	2.897	56.260	0.159	56.710	0.332	-34.200
2.9	0.218	-136.317	2.825	53.532	0.164	55.492	0.327	-35.797
3.0	0.207	-142.442	2.753	51.009	0.170	54.069	0.317	-37.416