TPM1919-40-311

FEATURES :

- HIGH POWER
  P_{1dB} = 47.0 dBm at 1.9 GHz
- HIGH GAIN
  G_{1dB} = 13 dB at 1.9 GHz
- PARTIALLY MATCHED TYPE
- HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Compression Point	P_{1dB}	V_{DS} = 10 V f = 1.9 GHz	dBm	46.0	47.0	–
Power Gain at 1dB Compression Point	G_{1dB}		dB	12.0	13.0	–
Drain Current	I_{DS}		A	–	9.6	11.0
Power Added Efficiency	η_{add}		%	–	49	–
Channel-Temperature Rise	ΔTch	$V_{DS} \times I_{DS} \times R_{th(c-o)}$	°C	–	–	100

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

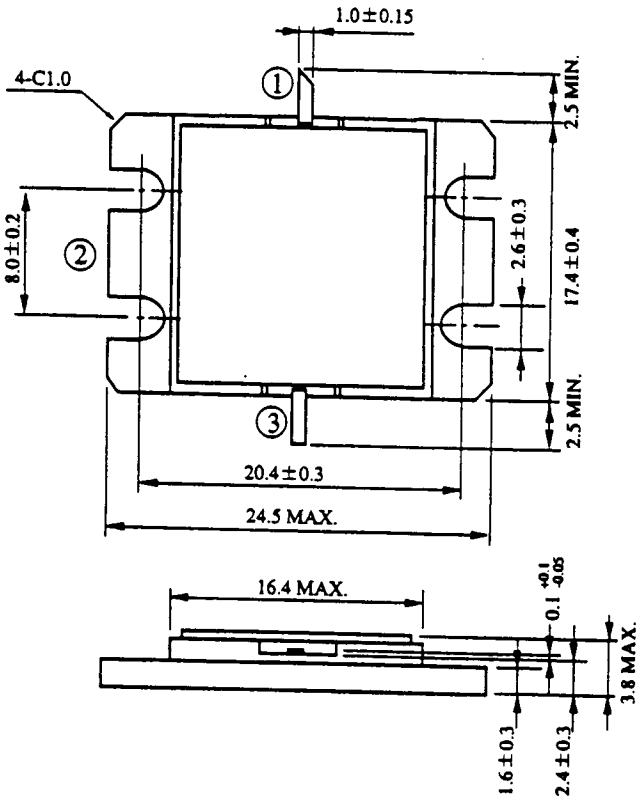
CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V_{DS} = 3 V I_{DS} = 11.0A	mS	–	8800	–
Pinch-off Voltage	V_{GSoff}	V_{DS} = 3 V I_{DS} = 170 mA	V	−1.0	-2.5	−4.0
Saturated Drain Current	I_{DSS}	V_{DS} = 3 V V_{GS} = 0 V	A	–	24	31
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS} = −500 μA	V	−5	–	–
Thermal Resistance	$R_{th(c-c)}$	Channel to Case	°C/W	–	0.8	1.2

*RECOMMENDED GATE RESISTANCE (Rg) : Rg=30 Ω (MAX.)

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V_{DS}	V	15
Gate-Source Voltage	V_{GS}	V	−5
Drain Current	I_{DS}	A	31
Total Power Dissipation (T_C = 25°C)	P_T	W	125
Channel Temperature	T_{ch}	°C	175
Storage Temperature	T_{stg}	°C	−65~175

PACKAGE OUTLINE (2-16G6A)



Unit in mm

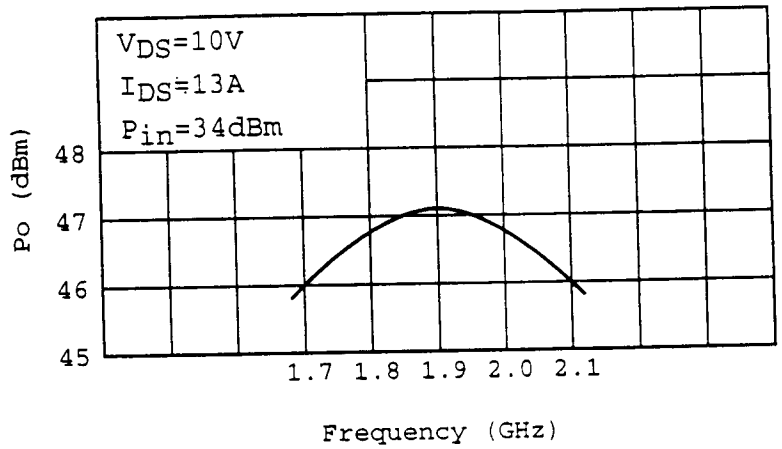
① Gate
② Source
③ Drain

HANDLING PRECAUTIONS FOR PACKAGED TYPE

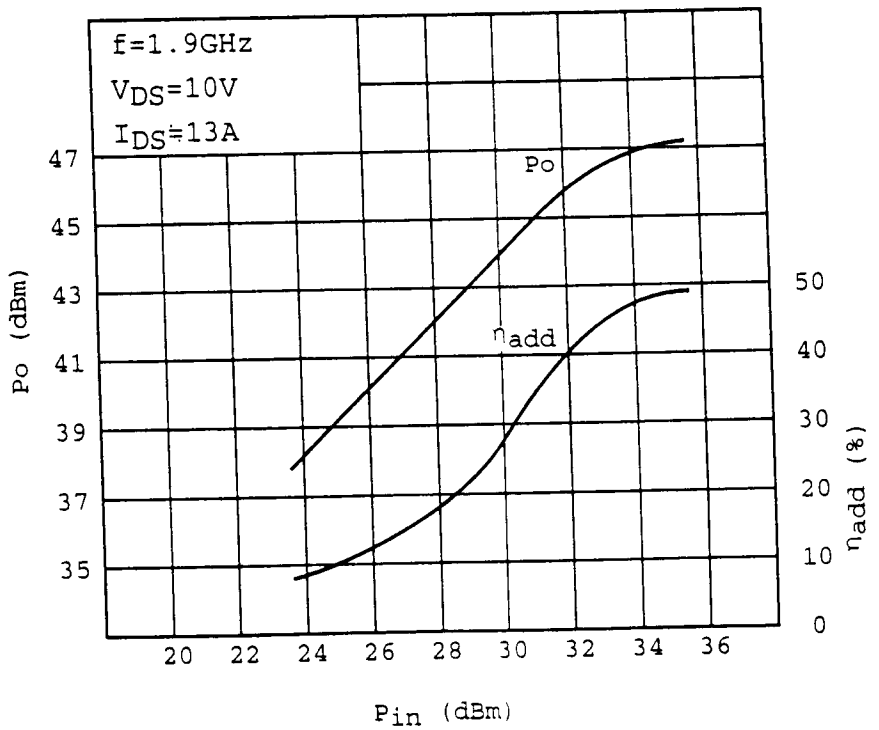
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES.

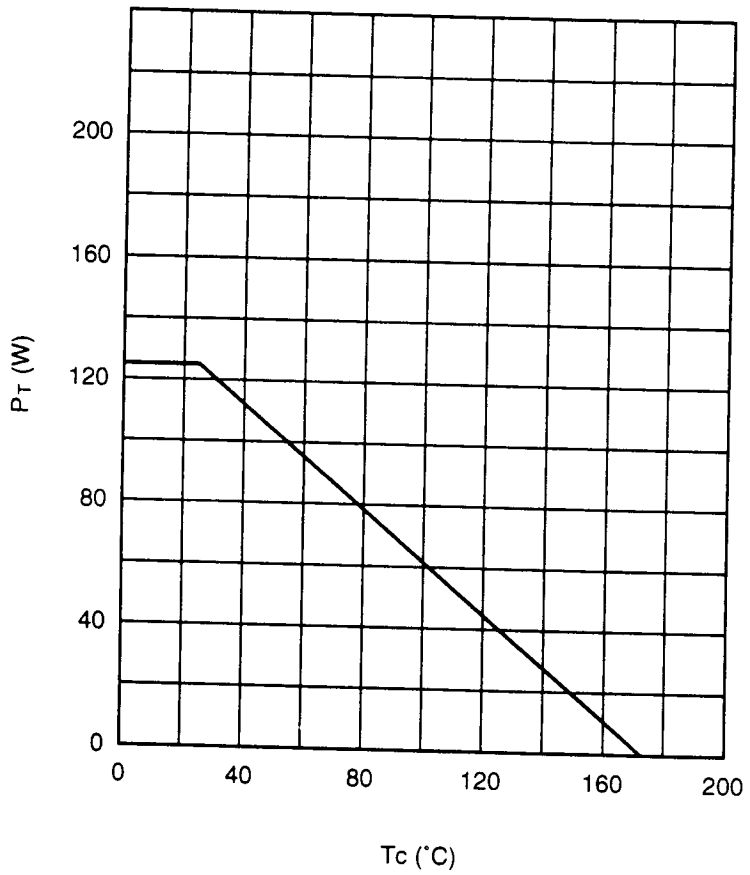
Output Power vs. Frequency



Output Power vs. Input Power



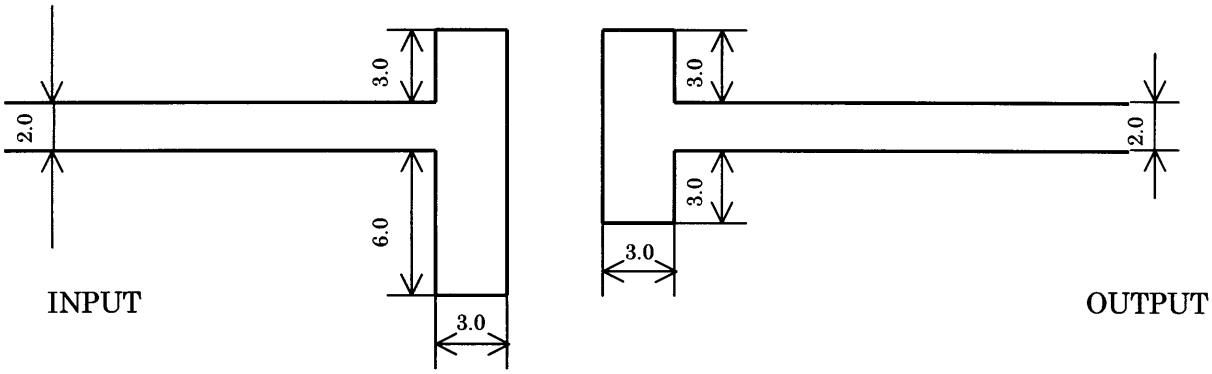
POWER DISSIPATION VS. CASE TEMPERATURE



1919-40-311(F9834#3)S10V/-1.05V/10A

Freq. [GHz]	S11		S21		S12		S22	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1.835	.746	109	3.771	-78	.020	-132	.647	130
1.840	.737	108	3.855	-80	.020	-134	.644	129
1.845	.728	106	3.943	-82	.021	-136	.642	129
1.850	.718	105	4.033	-83	.021	-138	.639	128
1.855	.707	104	4.128	-85	.022	-140	.636	127
1.860	.696	103	4.226	-87	.022	-142	.634	127
1.865	.684	102	4.327	-89	.023	-144	.631	126
1.870	.671	101	4.430	-91	.024	-147	.628	125
1.875	.657	99	4.536	-93	.024	-149	.624	125
1.880	.643	98	4.644	-95	.025	-151	.620	124
1.885	.628	96	4.755	-97	.026	-154	.616	123
1.890	.612	95	4.870	-99	.026	-156	.612	122
1.895	.594	93	4.989	-101	.027	-158	.608	121
1.900	.576	91	5.110	-103	.028	-161	.602	120
1.905	.556	90	5.234	-105	.029	-164	.597	119
1.910	.536	88	5.354	-107	.029	-166	.590	118
1.915	.514	86	5.481	-110	.030	-169	.583	117
1.920	.490	84	5.607	-112	.031	-172	.575	116
1.925	.466	81	5.734	-115	.032	-175	.566	114
1.930	.439	79	5.862	-118	.033	-178	.557	112
1.935	.412	77	5.989	-120	.034	179	.546	111
1.940	.382	74	6.114	-123	.035	176	.535	109
1.945	.351	71	6.237	-126	.035	173	.522	108
1.950	.319	68	6.357	-129	.036	170	.507	106
1.955	.285	65	6.475	-132	.037	166	.492	104
1.960	.249	61	6.582	-135	.038	163	.476	102
1.965	.212	56	6.686	-138	.039	159	.457	100
1.970	.175	51	6.777	-141	.040	156	.438	98
1.975	.136	44	6.860	-145	.040	152	.417	96
1.980	.098	33	6.929	-148	.041	149	.394	94
1.985	.063	13	6.987	-151	.041	145	.371	92
1.990	.044	-33	7.026	-155	.042	141	.346	90
1.995	.060	-82	7.057	-158	.042	137	.320	88
2.000	.095	-104	7.070	-162	.043	134	.293	86
2.005	.135	-115	7.071	-165	.043	130	.265	84
2.010	.177	-123	7.054	-169	.043	126	.236	82
2.015	.218	-128	7.024	-172	.043	122	.207	80
2.020	.259	-133	6.976	-176	.043	119	.177	79
2.025	.299	-137	6.911	-179	.043	115	.147	78
2.030	.337	-141	6.840	177	.043	111	.118	78
2.035	.375	-145	6.753	174	.042	108	.089	79
2.040	.410	-148	6.658	171	.042	104	.060	84
2.045	.444	-151	6.556	168	.042	101	.035	99
2.050	.477	-154	6.445	164	.041	98	.022	150
2.055	.507	-157	6.324	161	.041	94	.036	-152
2.060	.536	-160	6.201	158	.040	91	.060	-148
2.065	.563	-162	6.080	156	.040	88	.084	-143
2.070	.588	-165	5.951	153	.039	85	.109	-141
2.075	.611	-167	5.815	150	.038	82	.133	-141
2.080	.632	-169	5.679	147	.038	79	.156	-142
2.085	.653	-171	5.548	145	.037	76	.178	-142

DRAWING OF RECOMMENDE MATCHING NETWORK (TPM1919-40-311)



Substrate Material: Teflon (Er=2.8)

Thickness: 0.76 mm

Unit in mm