

Internally Matched Power GaAs FETs (C-Band)

Features

- High power
 - $P_{1dB} = 42.5$ dBm at 6.4 GHz to 7.2 GHz
- High gain
 - $G_{1dB} = 6.5$ dB at 6.4 GHz to 7.2 GHz
- Broad band internally matched
- Hermetically sealed package

RF Performance Specifications ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Condition	Unit	Min.	Typ.	Max
Output Power at 1dB Compression Point	P_{1dB}	$V_{DS} = 10V$ $f = 6.4 \sim 7.2$ GHz	dBm	41.5	42.5	–
Power Gain at 1dB Compression Point	G_{1dB}		dB	5.5	6.5	–
Drain Current	I_{DS}		A	–	4.8	5.5
Power Added Efficiency	η_{add}		%	–	29	–
Channel-Temperature Rise	ΔT_{ch}	$V_{DS} \times I_{DS} \times R_{th(c-c)}$	$^\circ\text{C}$	–	–	80

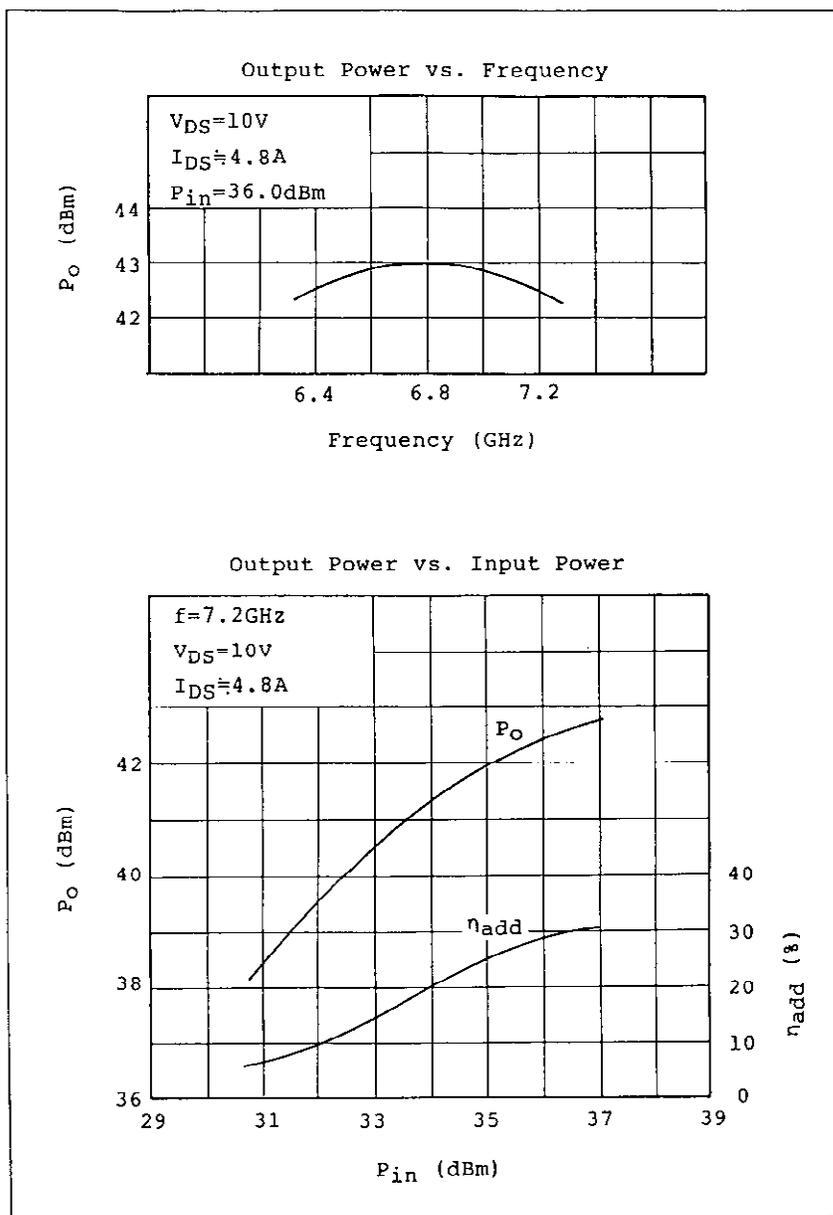
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Trans-conductance	gm	$V_{DS} = 3V$ $I_{DS} = 6.0$ A	mS	–	3600	–
Pinch-off Voltage	V_{GSoff}	$V_{DS} = 3V$ $I_{DS} = 80$ mA	V	-2	-3.5	-5
Saturated Drain Current	I_{DSS}	$V_{DS} = 3V$ $V_{GS} = 0V$	A	–	11.6	15.0
Gate to Source Breakdown Voltage	V_{GSO}	$I_{GS} = -240$ μA	V	-5	–	–
Thermal Resistance	$R_{th(c-c)}$	Channel to case	$^\circ\text{C/W}$	–	1.4	1.8

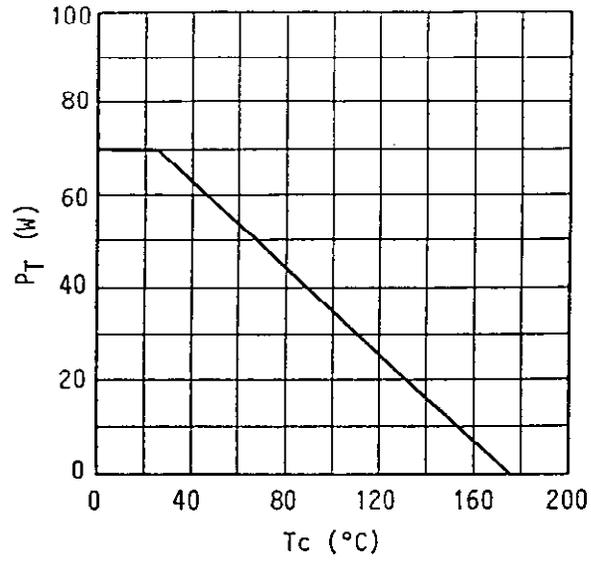
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RF Performances

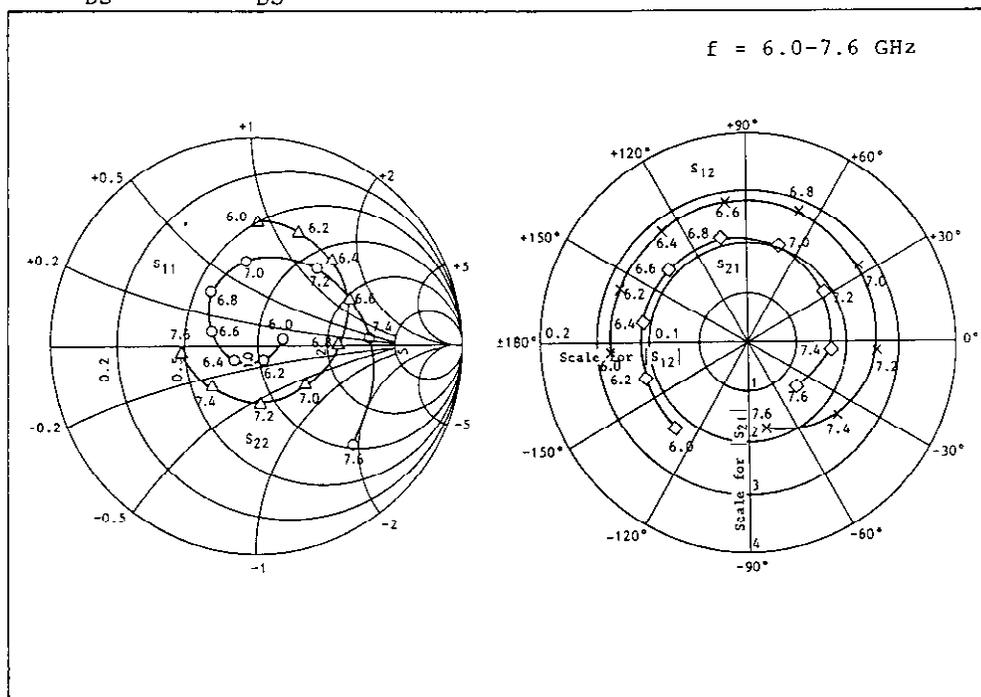


Power Dissipation vs. Case Temperature



TIM6472-16 S-Parameters
(MAGN. and ANGLES)

$V_{DS} = 10 \text{ V}, I_{DS} = 4.0 \text{ A}$



FREQUENCY (GHz)	S_{11}		S_{12}		S_{21}		S_{22}	
6.0	0.14	12	0.141	-175	2.31	-131	0.61	89
6.2	0.07	-62	0.140	157	2.23	-162	0.60	69
6.4	0.13	-146	0.142	127	2.23	169	0.56	47
6.6	0.22	164	0.144	98	2.13	138	0.51	25
6.8	0.35	131	0.144	67	2.13	104	0.40	-1
7.0	0.42	96	0.137	34	2.02	71	0.31	-40
7.2	0.48	51	0.130	-2	1.85	35	0.28	-88
7.4	0.57	3	0.114	-39	1.65	-4	0.31	-137
7.6	0.67	-46	0.087	-80	1.30	-41	0.38	-174