

FEATURES

- High Output Power: $P_{1dB} = 36.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 36\%$ (Typ.)
- Low $IM_3 = -45\text{dBc}@P_o = 25.5\text{dBm}$
- Broad Band: 5.9 to 7.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package

DESCRIPTION

The FLM5972-4F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

SEDI's stringent Quality Assurance Program assures the highest reliability and consistent performance.



ABSOLUTE MAXIMUM RATING (Case Temperature $T_c=25\text{deg.C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_c = 25\text{deg.C}$	25	W
Storage Temperature	T_{stg}		-65 to +175	deg.C
Channel Temperature	T_{ch}		175	deg.C

SEDI recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 16.0 and -2.2 mA respectively with gate resistance of 100ohm.

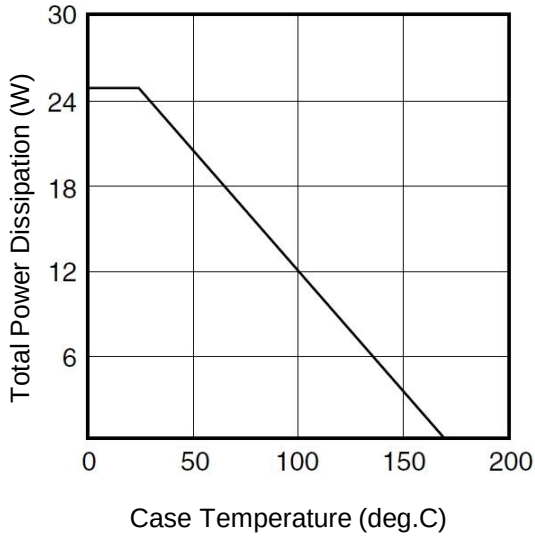
ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25\text{deg.C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	1700	2600	mA
Transconductance	g_m	$V_{DS}=5V, I_{DS}=1100\text{mA}$	-	1700	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=85\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-85\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V,$ $I_{DS}=0.65 I_{DSS}$ (Typ.), $f=5.9$ to 7.2 GHz, $Z_S=Z_L=50\text{ohm}$	35.5	36.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{DSR}		-	1100	1300	mA
Power-added Efficiency	η_{add}		-	36	-	%
Gain Flatness	ΔG		-	-	1.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 7.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 25.5\text{dBm}$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	5.0	6.0	deg.C/W
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{DSR} \times R_{th}$	-	-	80	deg.C

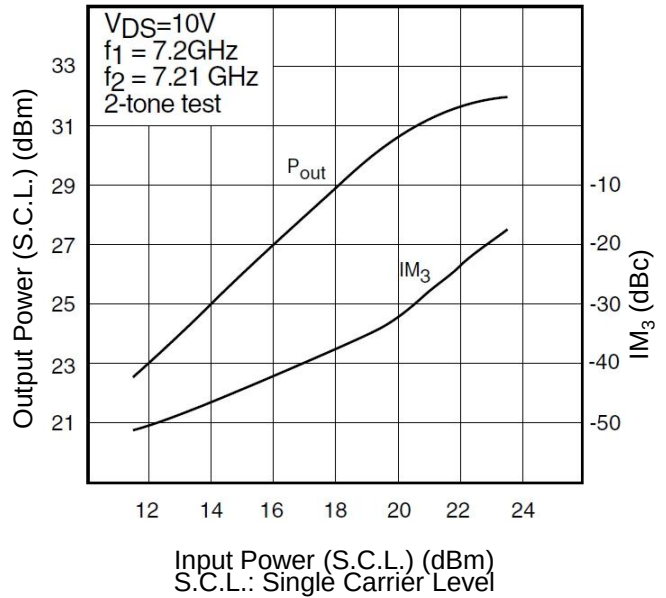
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

CASE STYLE	IB	
ESD	Class 3A	4000V to 8000V
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)		
RoHS Compliance	Yes	

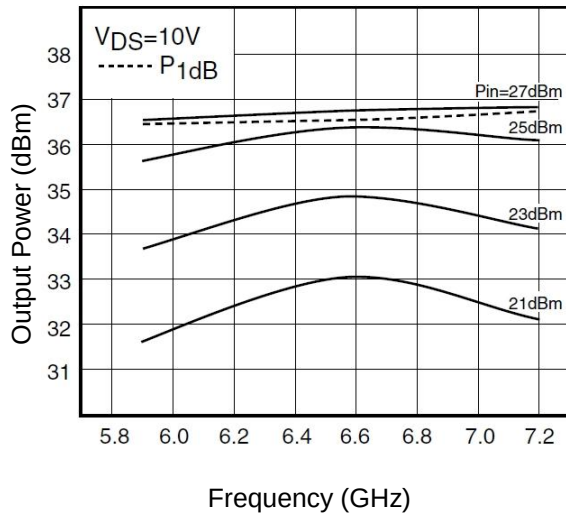
POWER DERATING CURVE



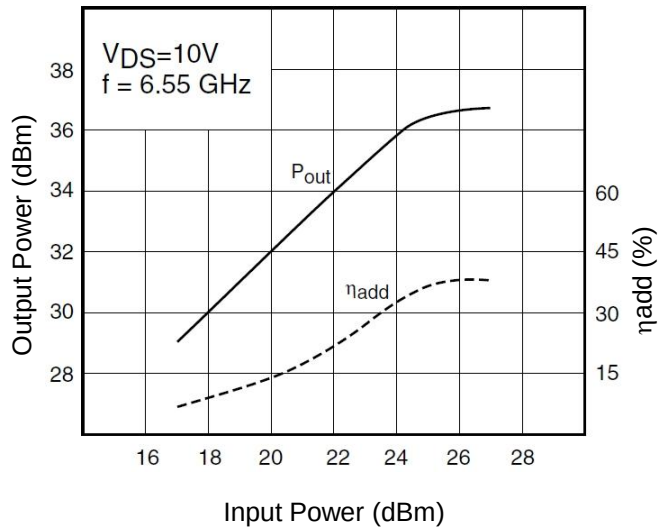
OUTPUT POWER & IM_3 vs. INPUT POWER

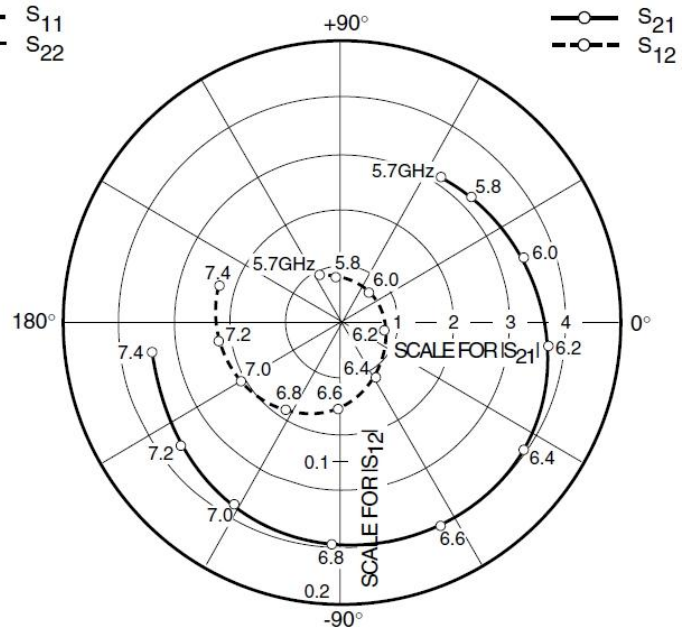
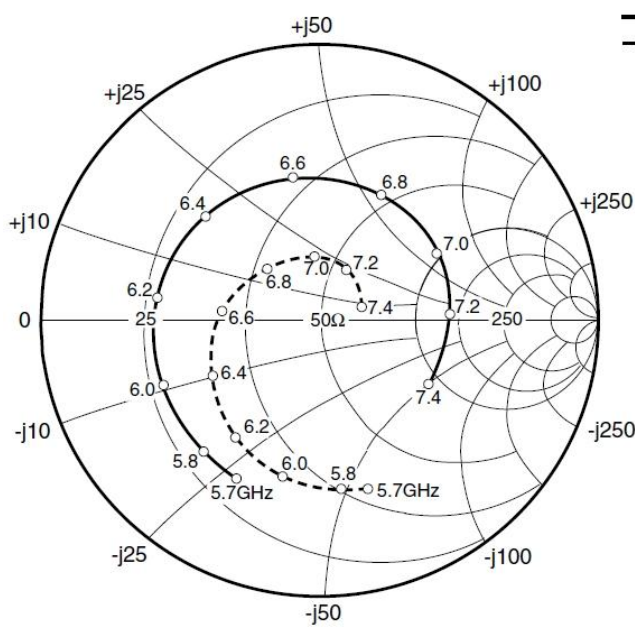


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



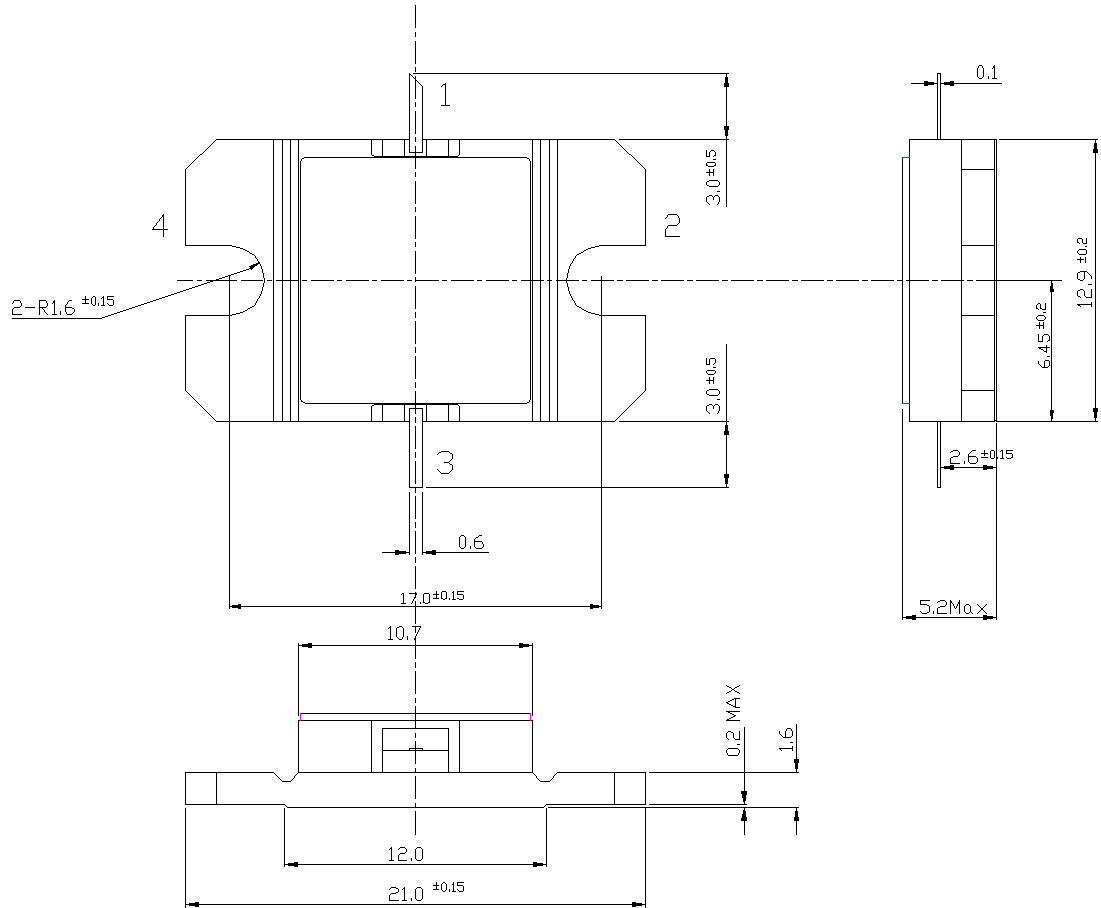


S-PARAMETERS

V_{DS} = 10V, I_{DS} = 1100mA

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5700	0.648	-118.1	3.136	55.3	0.038	117.9	0.634	-74.1
5800	0.637	-130.5	3.237	43.8	0.032	98.9	0.614	-83.1
5900	0.625	-143.4	3.362	32.1	0.029	76.0	0.601	-93.0
6000	0.614	-157.3	3.490	19.7	0.028	46.5	0.585	-103.1
6100	0.600	-172.2	3.617	6.8	0.027	15.1	0.557	-113.7
6200	0.587	172.1	3.746	-6.1	0.031	-11.3	0.526	-125.2
6300	0.572	155.4	3.847	-20.0	0.037	-36.3	0.482	-138.4
6400	0.558	137.6	3.939	-34.3	0.046	-58.4	0.438	-152.9
6500	0.543	119.4	3.992	-48.8	0.052	-76.8	0.396	-168.3
6600	0.530	100.7	4.011	-63.6	0.062	-92.8	0.350	175.1
6700	0.518	82.1	3.980	-78.4	0.069	-108.7	0.306	156.9
6800	0.506	64.2	3.914	-92.9	0.074	-123.5	0.274	136.2
6900	0.495	46.6	3.828	-107.2	0.080	-137.5	0.253	114.7
7000	0.485	30.1	3.735	-121.3	0.084	-150.1	0.231	95.0
7100	0.478	19.6	3.672	-129.7	0.087	-157.0	0.223	81.0
7200	0.467	3.2	3.586	-143.5	0.090	-171.1	0.204	61.9
7300	0.458	-13.4	3.507	-157.4	0.091	175.6	0.181	41.4
7400	0.453	-30.9	3.436	-171.7	0.092	163.5	0.156	18.7

■ Package Outline
Case Style : IB



Pin Assignment

- 1 : Gate
- 2 : Source
- 3 : Drain
- 4 : Source

Unit : mm

For further information please contact:

<http://global-sei.com/Electro-optic/about/office.html>

CAUTION

This product contains **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put these products into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.