

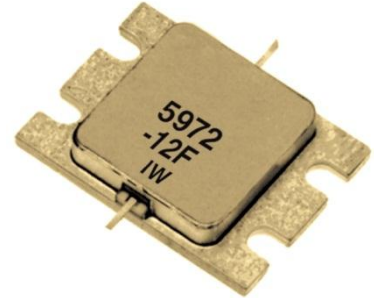
FEATURES

- High Output Power: $P_{1dB} = 41.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low $IM_3 = -45\text{dBc}@P_o = 30.5\text{dBm}$
- Broad Band: 5.9 to 7.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package

DESCRIPTION

The FLM5972-12F 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	$T_c = 25\text{deg.C}$	57.6	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 32.0 and -5.6 mA respectively with gate resistance of 50ohm.

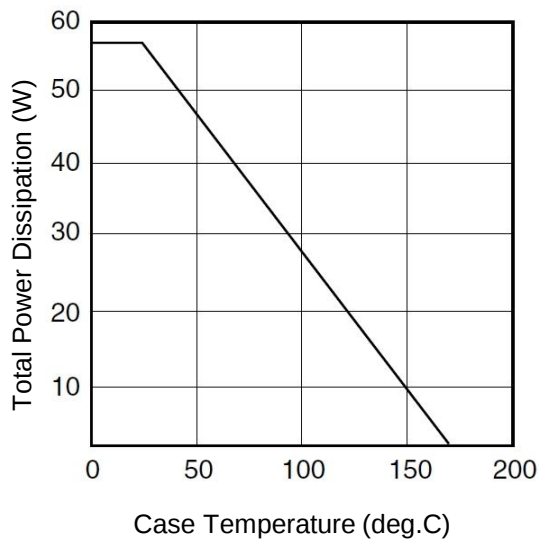
ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25\text{deg.C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	5000	7500	mA
Transconductance	g_m	$V_{DS}=5V, I_{DS}=3250\text{mA}$	-	5000	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=250\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-250\text{uA}$	-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, $Z_S=Z_L=50\text{ohm}$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{DSR}		-	3250	3800	mA
Power-added Efficiency	η_{add}		-	37	-	%
Gain Flatness	ΔG		-	-	1.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 7.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 30.5\text{dBm}$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	2.3	2.6	deg.C/W
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{DSR} \times R_{th}$	-	-	80	deg.C

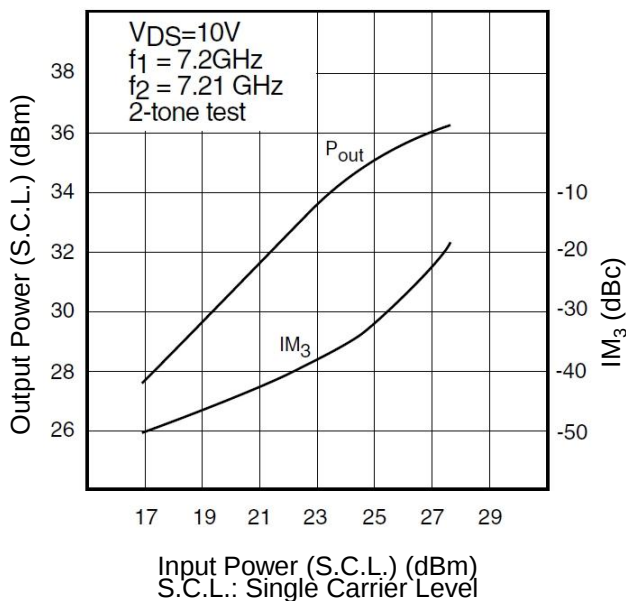
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

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

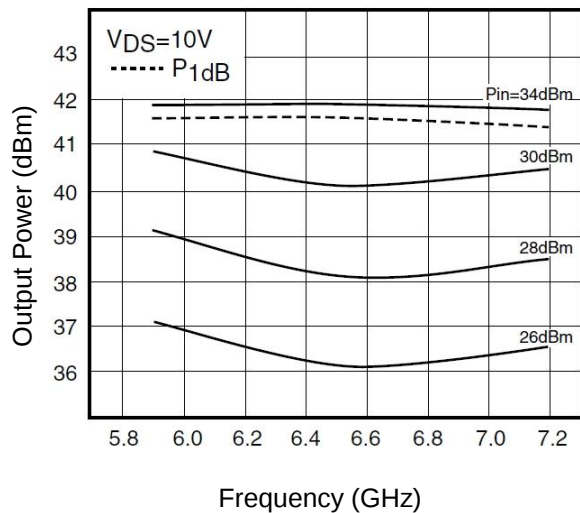
POWER DERATING CURVE



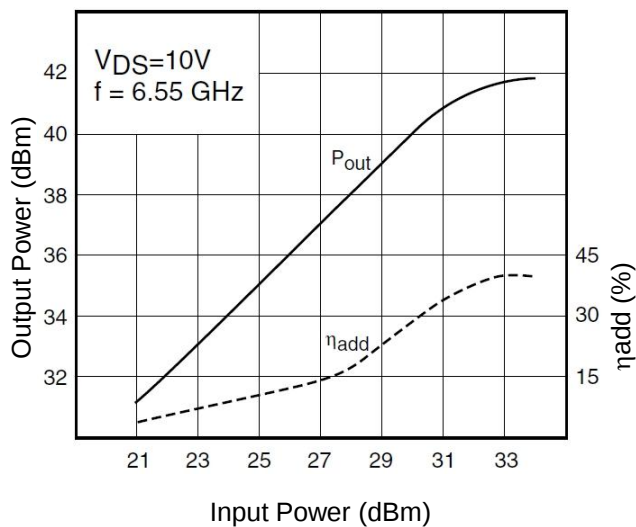
OUTPUT POWER & IM_3 vs. INPUT POWER

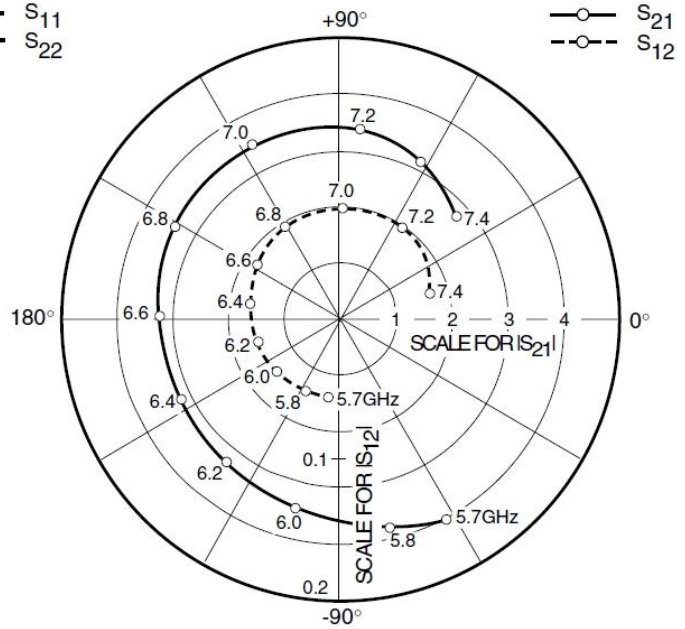
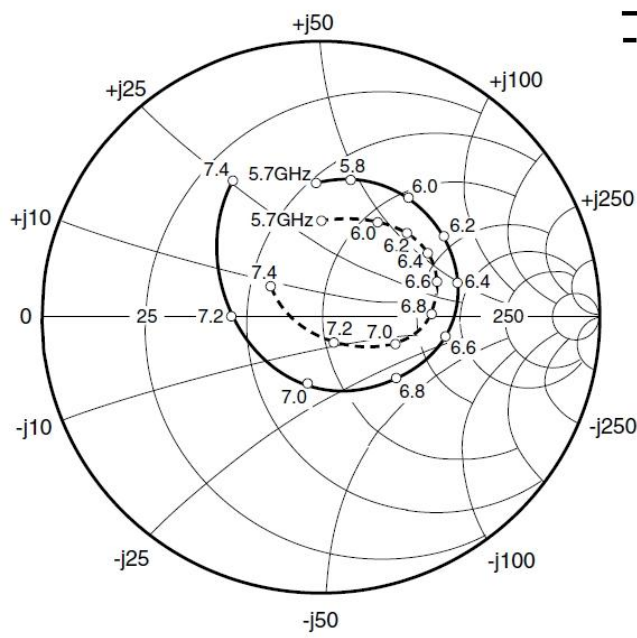


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



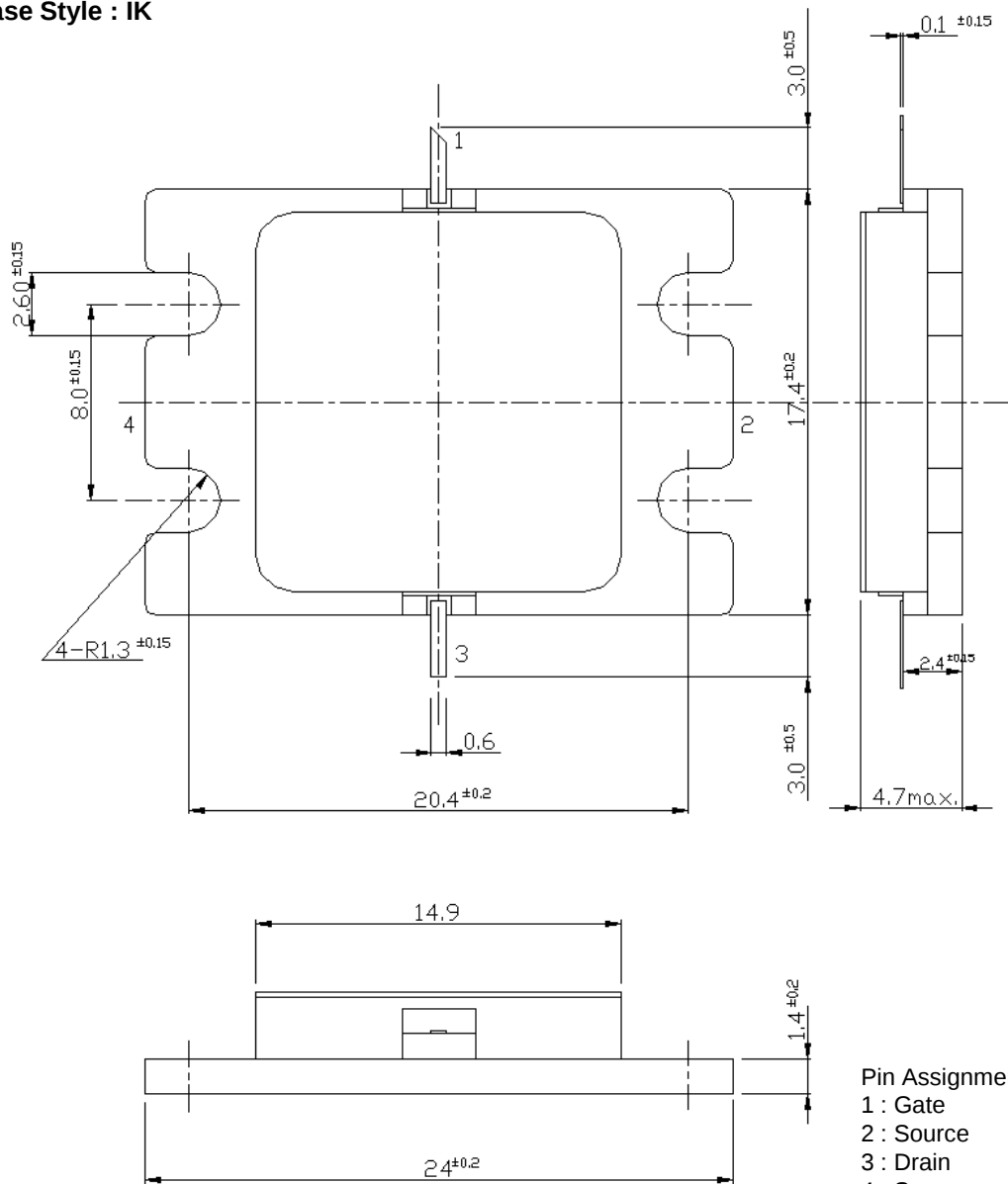


S-PARAMETERS

V_{DS} = 10V, I_{DS} = 3250mA

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5700	0.486	91.9	4.016	-62.2	0.056	-100.3	0.350	90.5
5800	0.511	77.6	3.787	-76.7	0.057	-116.1	0.367	79.0
5900	0.527	65.0	3.592	-90.5	0.057	-130.1	0.385	69.2
6000	0.536	54.0	3.443	-103.6	0.059	-141.2	0.394	59.5
6100	0.540	43.5	3.335	-116.2	0.061	-153.9	0.410	51.2
6200	0.534	33.2	3.268	-128.9	0.061	-164.8	0.426	44.8
6300	0.523	23.6	3.213	-141.4	0.063	-176.4	0.436	38.3
6400	0.505	13.3	3.197	-154.0	0.066	170.4	0.439	31.6
6500	0.479	2.4	3.206	-167.0	0.067	159.1	0.439	24.2
6600	0.447	-9.5	3.254	179.6	0.072	147.0	0.434	17.4
6700	0.404	-23.3	3.323	165.7	0.073	133.3	0.420	9.6
6800	0.354	-41.0	3.383	150.9	0.078	120.2	0.392	1.5
6900	0.296	-65.0	3.449	134.7	0.078	104.0	0.346	-6.6
7000	0.248	-100.9	3.495	116.9	0.080	88.6	0.281	-20.8
7100	0.252	-135.8	3.488	104.3	0.081	76.5	0.210	-31.6
7200	0.331	179.5	3.375	83.7	0.079	55.3	0.108	-67.2
7300	0.458	146.9	3.128	62.3	0.074	35.6	0.093	-173.8
7400	0.586	122.5	2.759	41.3	0.067	16.5	0.212	148.7

■ Package Outline
Case Style : IK



Pin Assignment

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

Unit : mm



FLM5972-12F

C-Band Internally Matched FET

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.