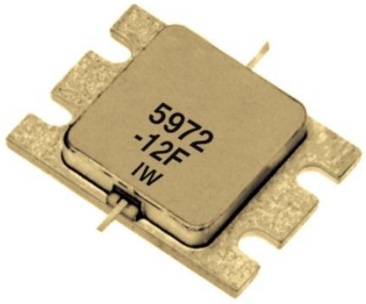
FLM5972-12F

C-Band Internally Matched FET



FEATURES

- High Output Power: P_{1dB} = 41.5dBm (Typ.)
- High Gain: G_{1dB} = 9.5dB (Typ.)
- High PAE: η_{add} = 37% (Typ.)
- Low IM_3 = -45dBc@Po = 30.5dBm
- Broad Band: 5.9 to 7.2GHz
- Impedance Matched Zin/Zout = 50ohm
- 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 Tc=25deg.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 = 25deg.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 Tc=25deg.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}=3250mA	-	5000	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=250mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS}=-250uA	-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=50ohm	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, Δf = 10 MHz 2-Tone Test Pout = 30.5dBm 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 x I_{dsr} x R_{th}	-	-	80	deg.C

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

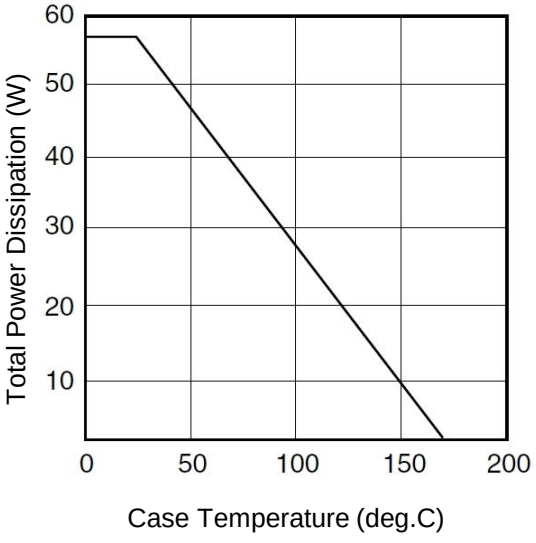
CASE STYLE	IK

ESD	Class 3A	4000V to 8000V

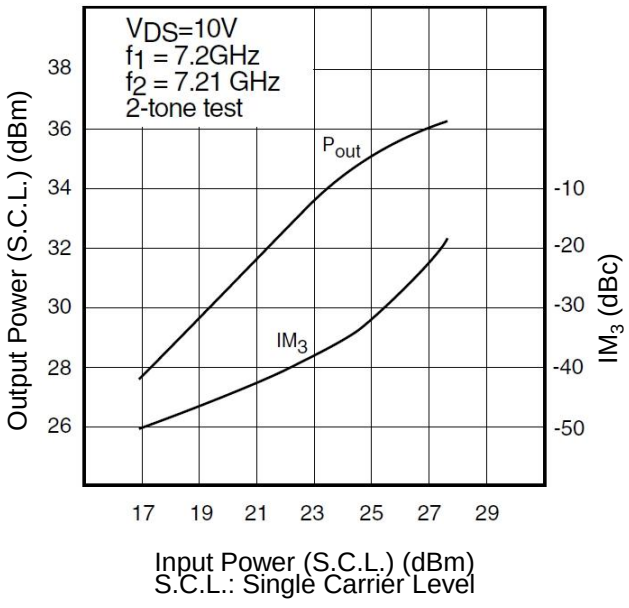
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes

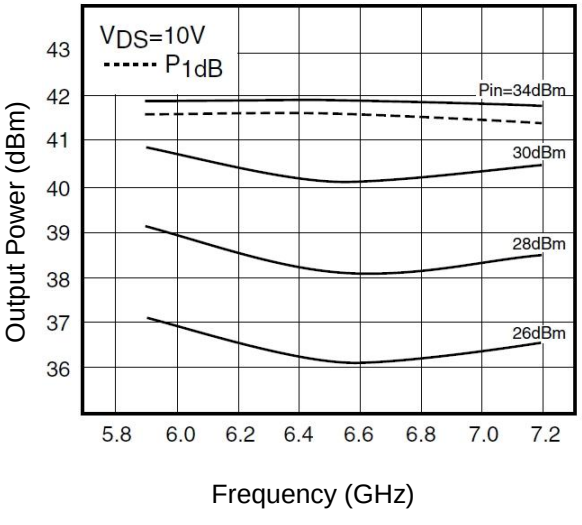
POWER DERATING CURVE



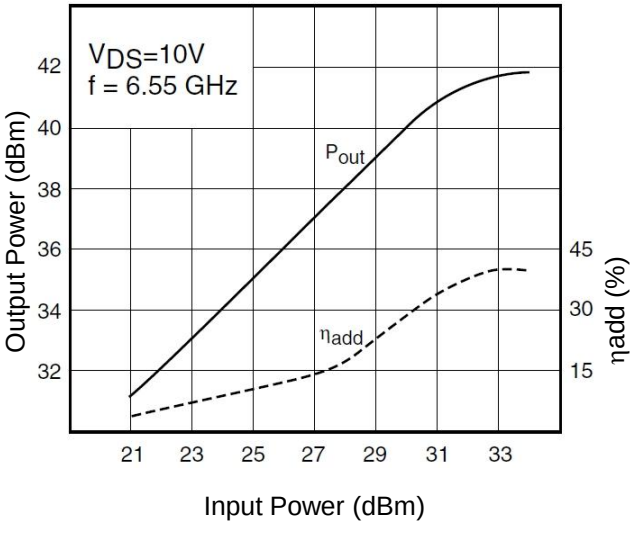
OUTPUT POWER & IM_3 vs. INPUT POWER

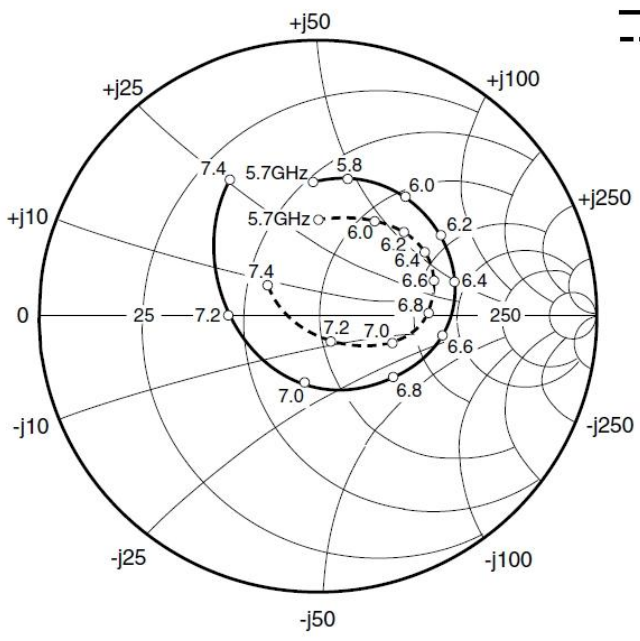


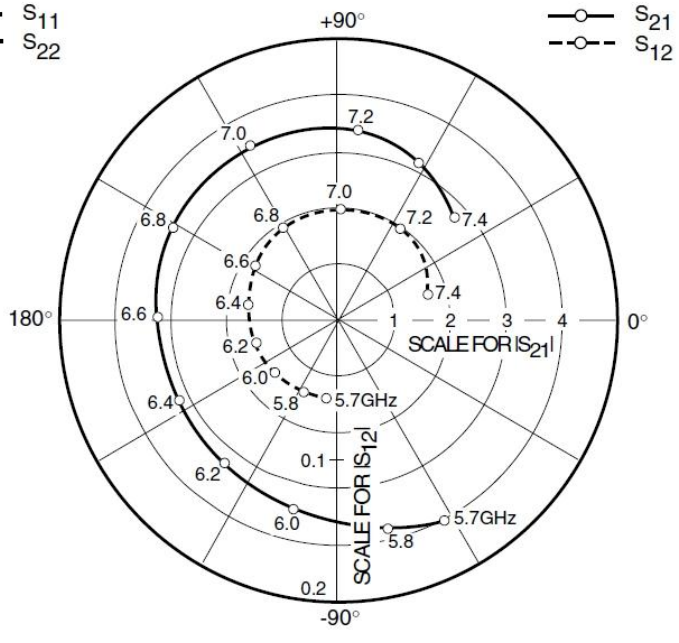
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





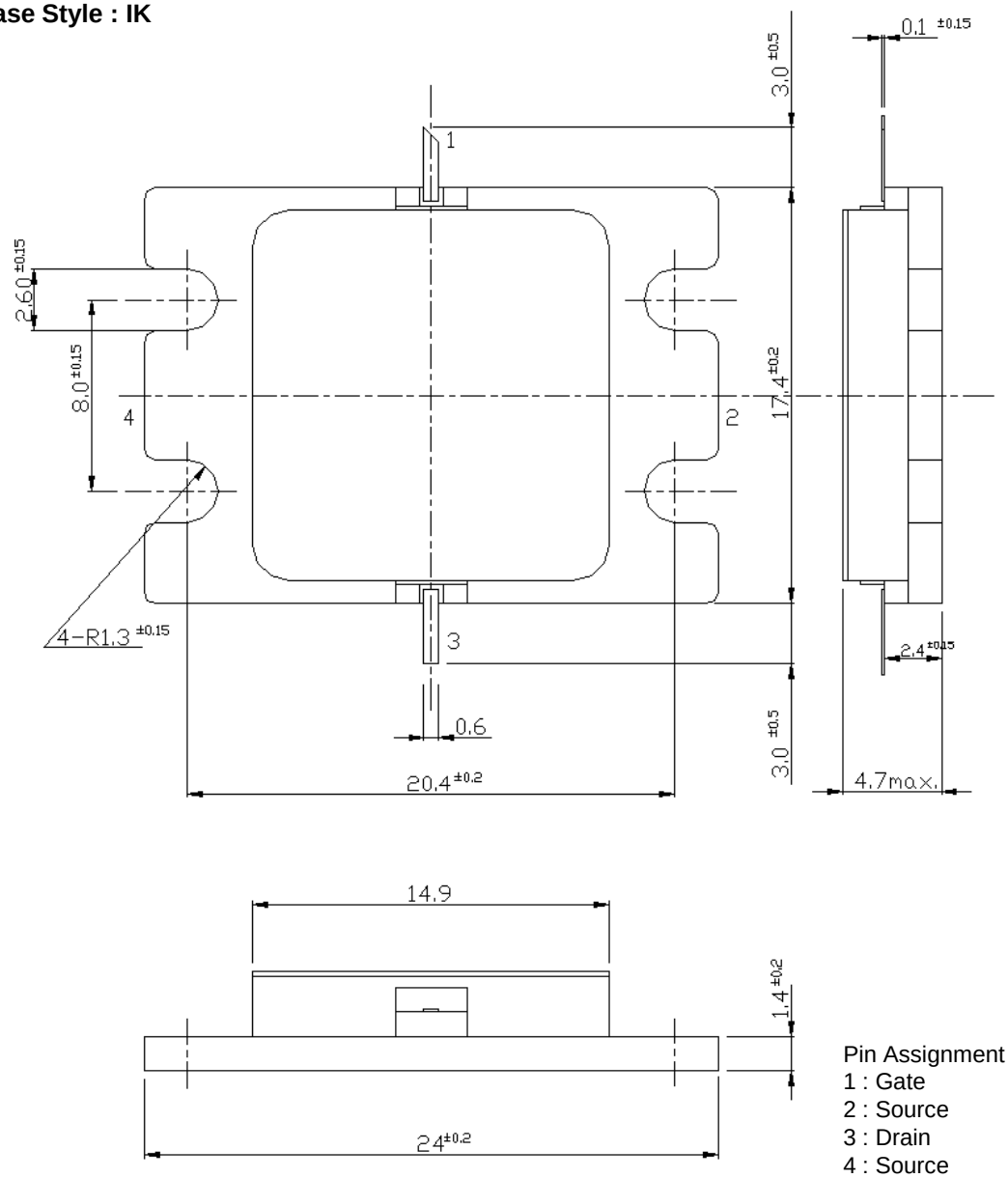


S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHz)	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

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.