

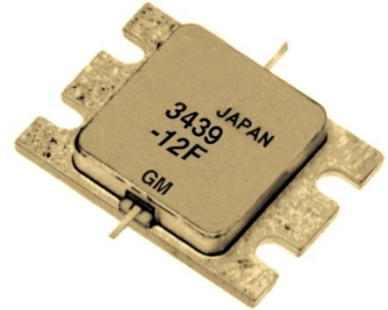
FEATURES

- High Output Power: $P_{1dB} = 41.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 11.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 40\%$ (Typ.)
- Low IM3: $-46\text{dBc}@P_o = 30.5\text{dBm}$
- Broad Band: 3.4 to 3.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package

DESCRIPTION

The FLM3439-12F 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 (Ambient Temperature $T_a=25\text{deg.C}$)

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.

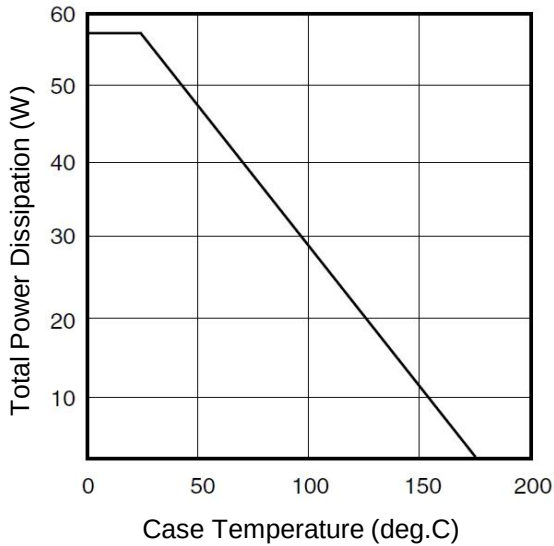
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25\text{deg.C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	5800	8700	mA
Transconductance	g_m	$V_{DS}=5V, I_{DS}=3400\text{mA}$	-	2900	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=300\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-300\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V,$ $I_{DS}=0.55 I_{DSS}$ (Typ.), $f=3.4$ to 3.9 GHz, $Z_S=Z_L=50\text{ohm}$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10.5	11.5	-	dB
Drain Current	I_{dsr}		-	3250	3800	mA
Power-added Efficiency	η_{add}		-	40	-	%
Gain Flatness	ΔG		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 3.9$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 30.5\text{dBm S.C.L.}$	-44	-46	-	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

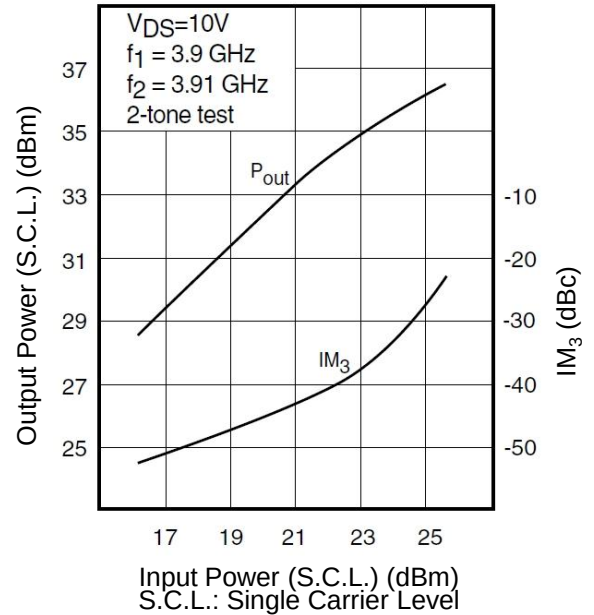
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

CASE STYLE	IK	
ESD	Class 3A	4000V to 8000V
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)		
RoHS Compliance	Yes	

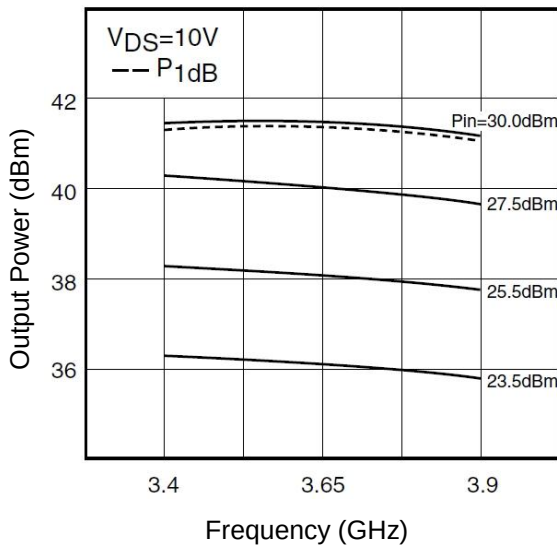
POWER DERATING CURVE



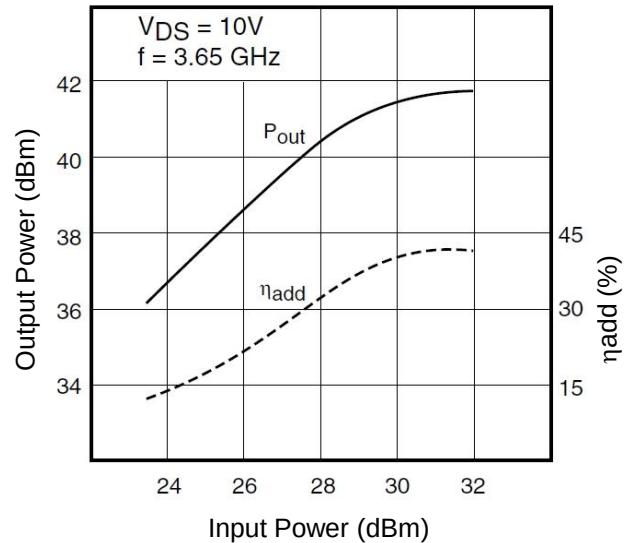
OUTPUT POWER & IM_3 vs. INPUT POWER

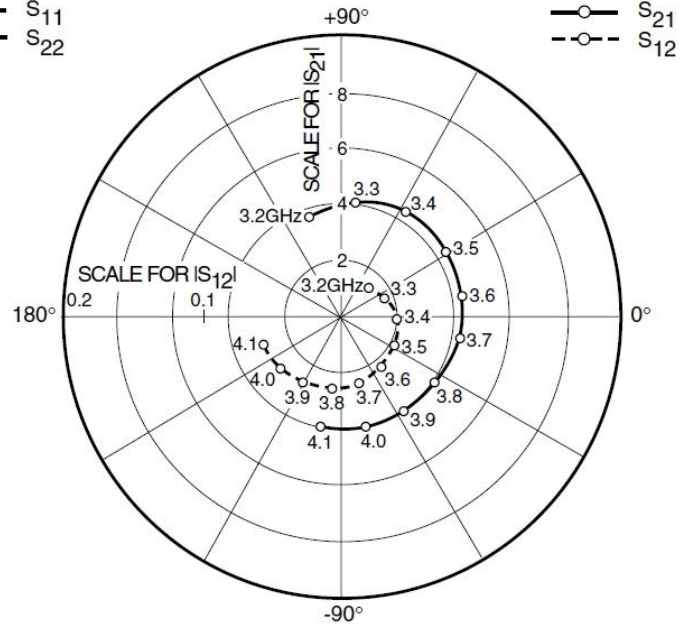
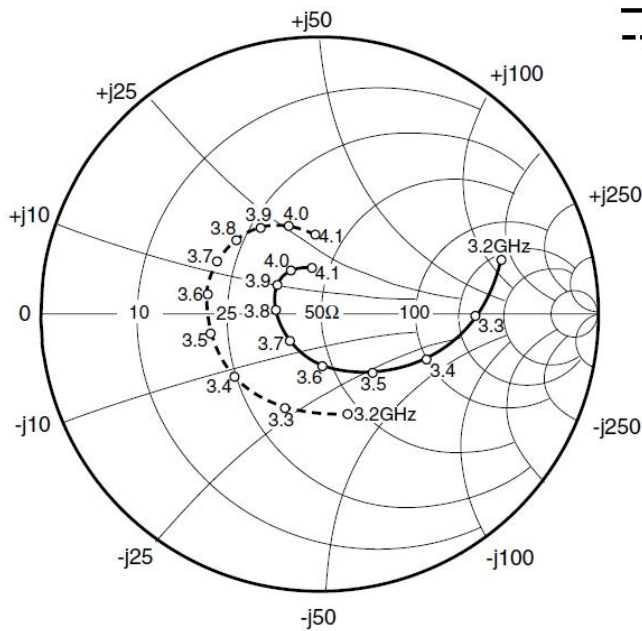


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



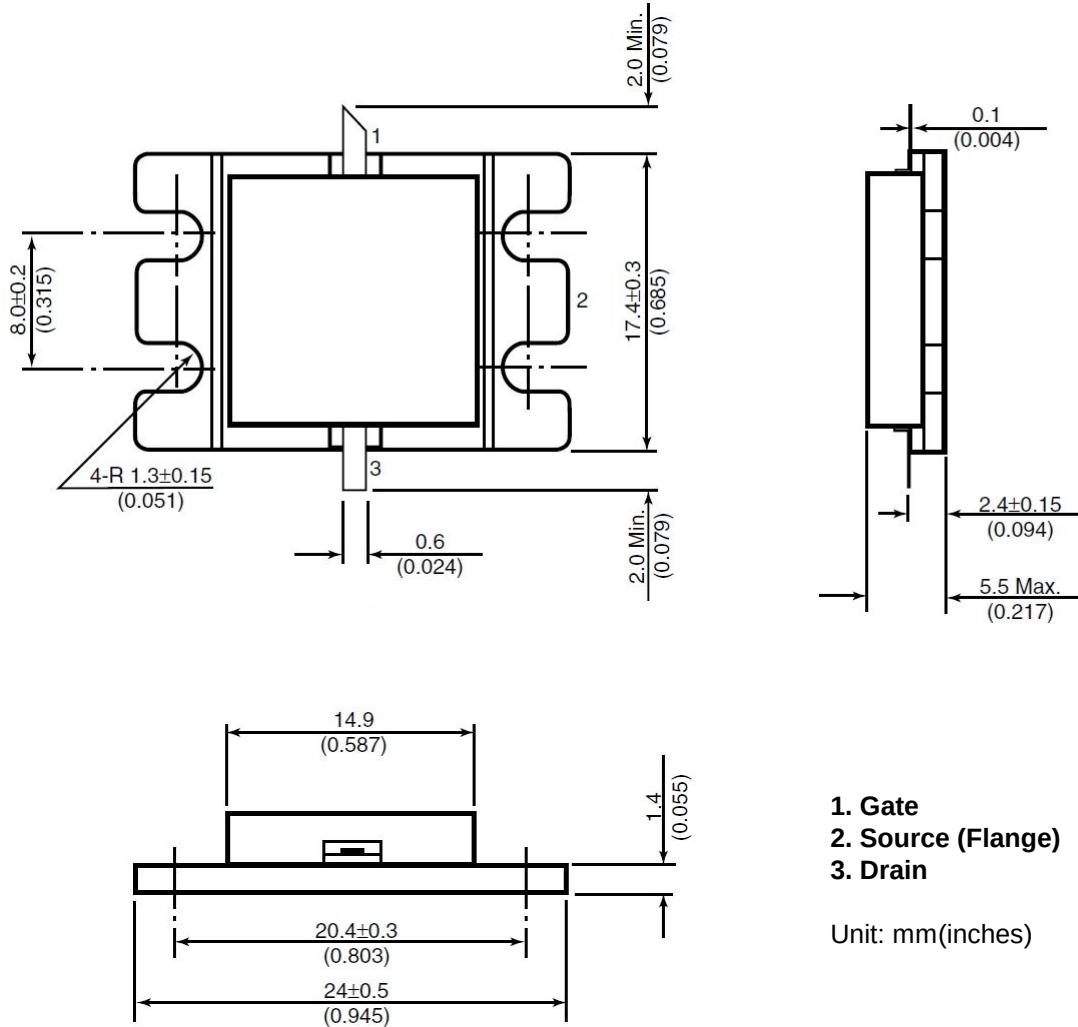


S-PARAMETERS

V_{DS} = 10V, I_{DS} = 3400mA

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3200	0.683	16.5	3.715	107.6	0.028	47.1	0.373	-74.2
3300	0.559	-1.1	4.086	83.3	0.034	23.4	0.365	-110.6
3400	0.420	-23.1	4.330	57.8	0.038	-3.5	0.383	-143.1
3500	0.287	-48.8	4.423	32.6	0.044	-28.7	0.403	-169.5
3600	0.188	-86.9	4.378	8.7	0.047	-51.8	0.414	169.9
3700	0.143	-137.1	4.282	-14.2	0.049	-75.8	0.411	153.0
3800	0.161	177.8	4.198	-36.0	0.052	-97.8	0.398	138.2
3900	0.183	146.4	4.113	-57.4	0.055	-120.1	0.374	124.6
4000	0.191	123.4	4.050	-78.6	0.057	-139.5	0.337	110.0
4100	0.167	99.4	4.022	-100.2	0.059	-160.1	0.285	93.1
4200	0.106	73.5	4.009	-122.8	0.062	177.8	0.217	70.1

Case Style "IK"
Metal-Ceramic Hermetic Package



1. Gate
2. Source (Flange)
3. Drain

Unit: mm(inches)



FLM3439-12F

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.