

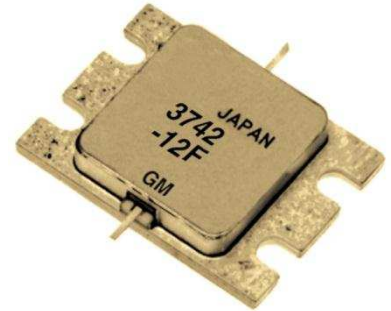
FEATURES

- 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: 3.7 to 4.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package

DESCRIPTION

The FLM3742-12F 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.

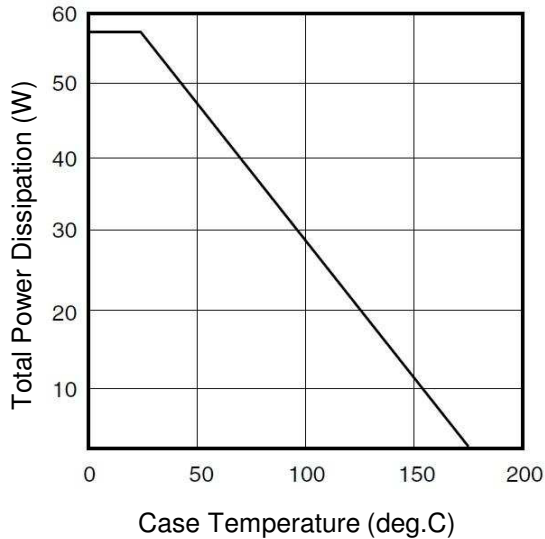
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25\text{deg.C}$)

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}	$I_{GS}=-300\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V,$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}	$I_{DS}=0.55 I_{DSS}$ (Typ.),	10.5	11.5	-	dB
Drain Current	I_{dsr}	$f=3.7$ to 4.2 GHz,	-	3250	3800	mA
Power-added Efficiency	η_{add}	$Z_S=Z_L=50\text{ohm}$	-	40	-	%
Gain Flatness	ΔG		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 4.2$ 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

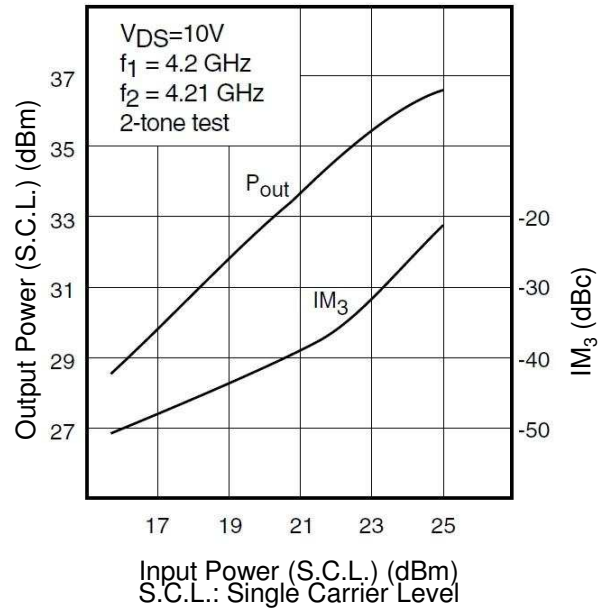
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

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	

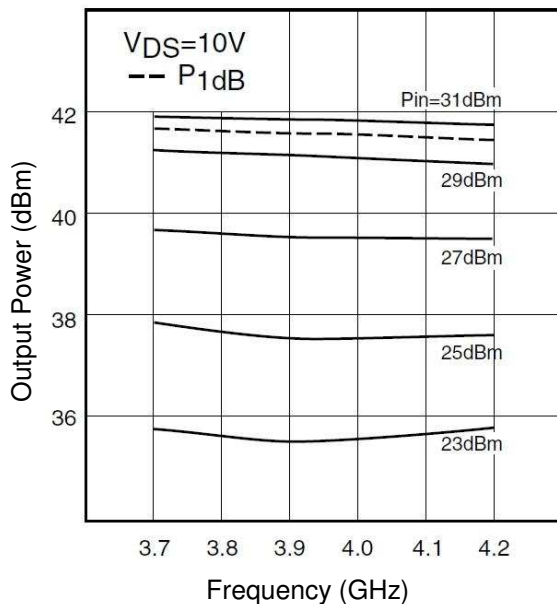
POWER DERATING CURVE



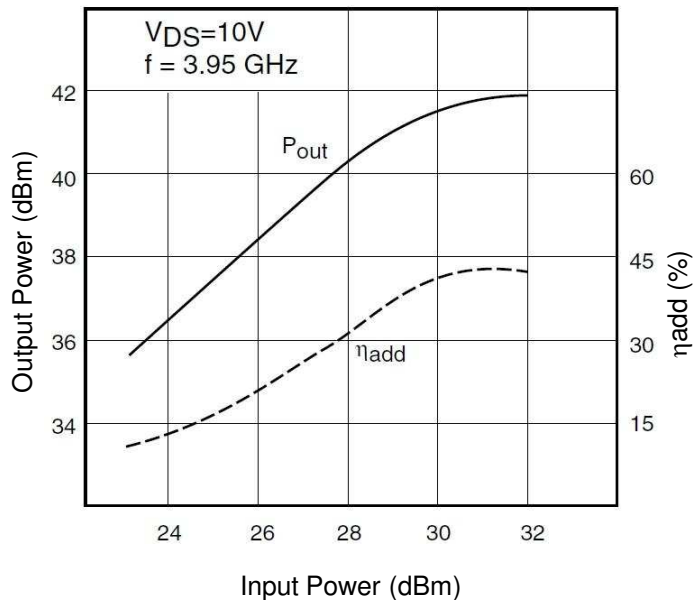
OUTPUT POWER & IM₃ vs. INPUT POWER

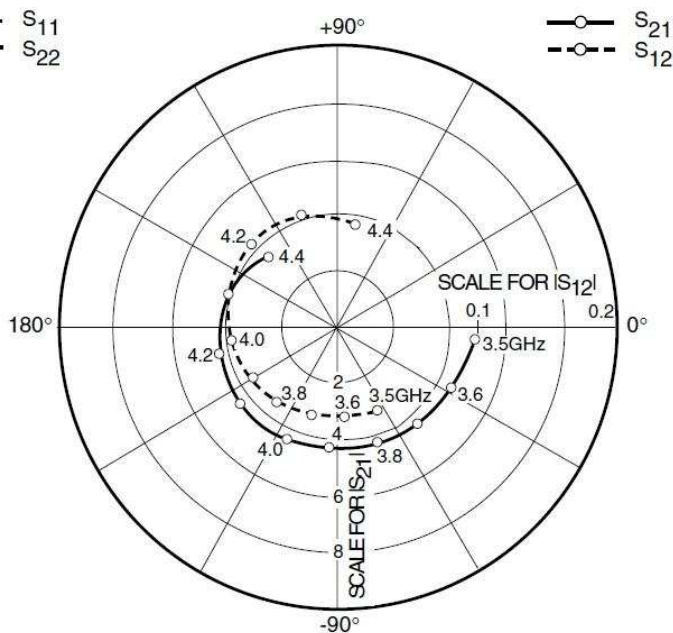
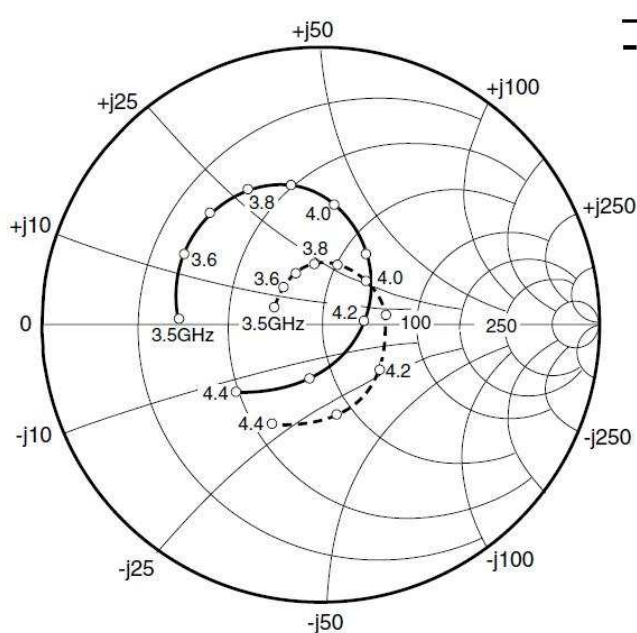


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



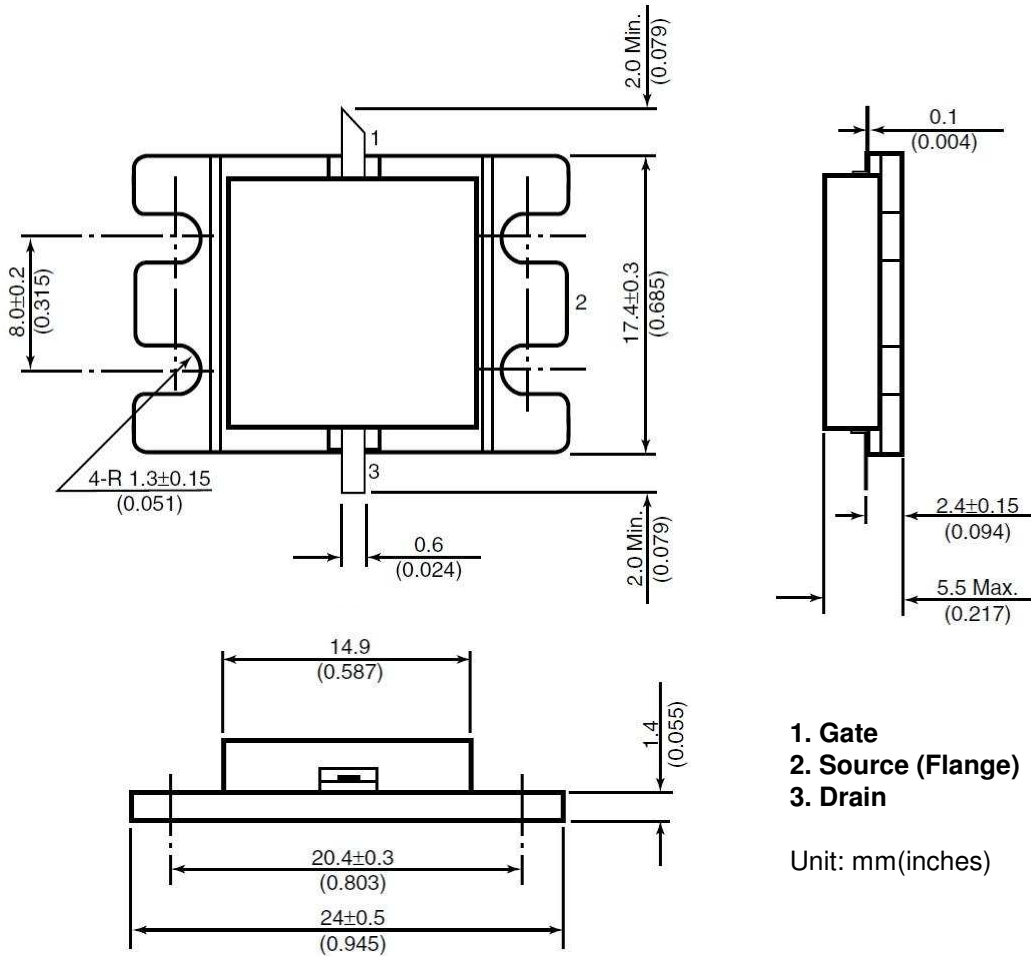


S-PARAMETERS

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

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3500	0.508	176.8	4.905	-4.5	0.066	-63.8	0.181	159.5
3600	0.551	152.3	4.604	-27.9	0.066	-86.9	0.189	136.0
3700	0.571	134.7	4.379	-49.9	0.066	-107.5	0.200	116.6
3800	0.558	118.2	4.277	-70.9	0.070	-129.0	0.214	96.9
3900	0.514	102.3	4.258	-92.5	0.072	-149.8	0.219	73.8
4000	0.434	83.6	4.333	-115.1	0.078	-172.3	0.223	44.2
4100	0.296	58.4	4.402	-140.2	0.083	163.6	0.234	7.4
4200	0.151	2.9	4.390	-167.6	0.084	137.7	0.265	-37.5
4300	0.203	-102.6	4.138	163.3	0.083	109.0	0.330	-80.1
4400	0.402	-143.5	3.626	134.3	0.074	81.6	0.401	-116.0

Case Style "IK"
Metal-Ceramic Hermetic Package





FLM3742-12F

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.