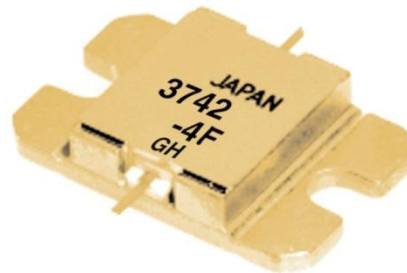


### FEATURES

- High Output Power:  $P_{1dB} = 36.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 12.0\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 38\%$  (Typ.)
- Low IM3 =  $-46\text{dBc}@P_o = 25.5\text{dBm}$
- Broad Band: 3.7 to 4.2GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



### DESCRIPTION

The FLM3742-4F 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 (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	$P_T$	$T_c = 25\text{deg.C}$	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.

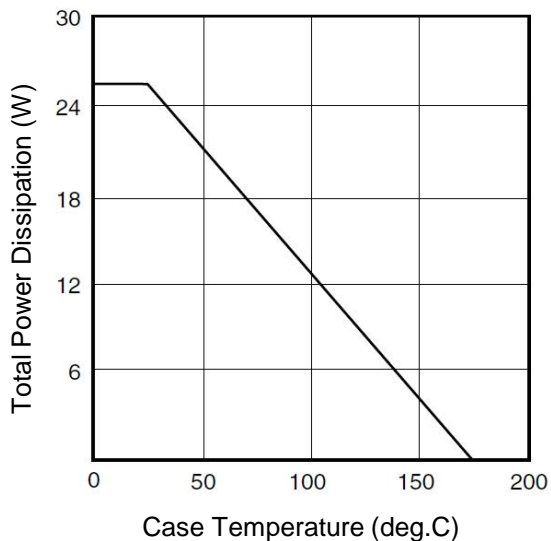
### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25\text{deg.C}$ )

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	1950	2900	mA
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=1100\text{mA}$	-	1000	-	mS
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=90\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-90\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS}=10V,$	35.5	36.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$	$I_{DS}=0.55 I_{DSS}$ (Typ.),	11.0	12.0	-	dB
Drain Current	$I_{dsr}$	$f=3.7$ to $4.2$ GHz,	-	1100	1300	mA
Power-added Efficiency	$\eta_{add}$	$Z_S=Z_L=50\text{ohm}$	-	38	-	%
Gain Flatness	$\Delta G$		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 4.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 25.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	5.0	6.0	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

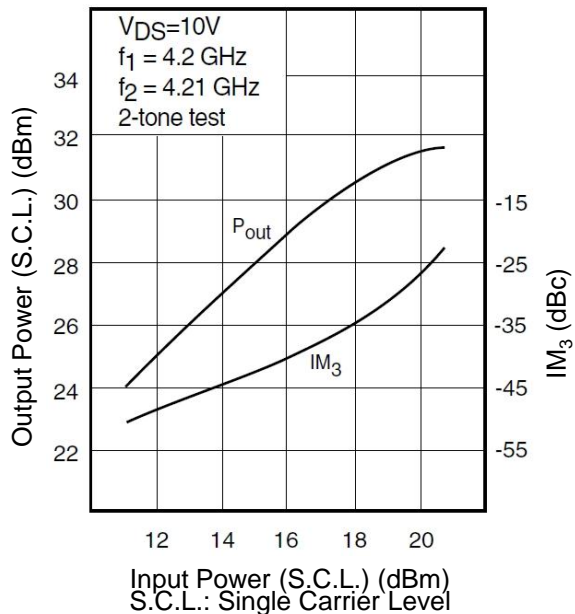
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

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

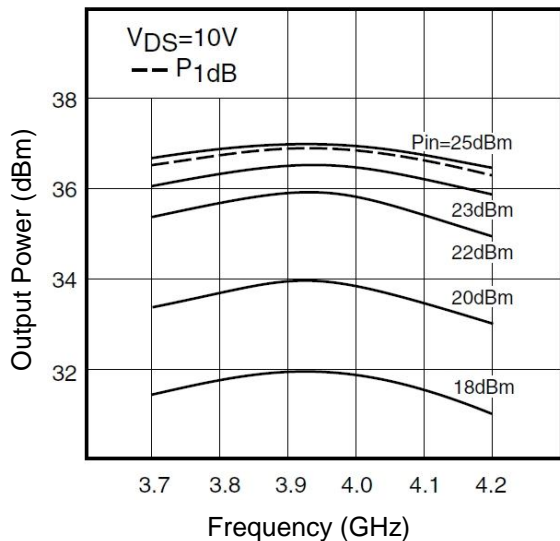
### POWER DERATING CURVE



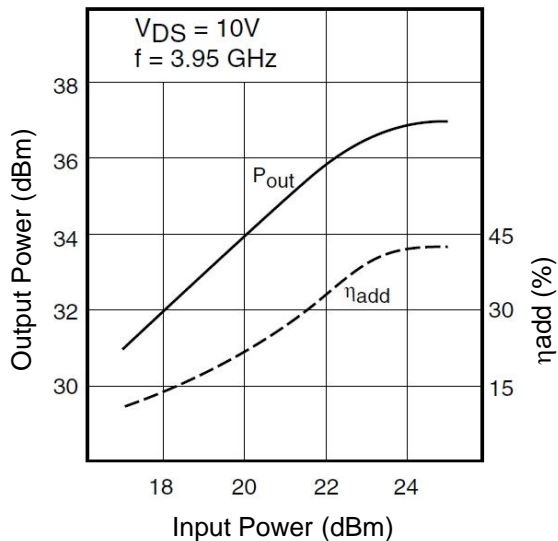
### OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER

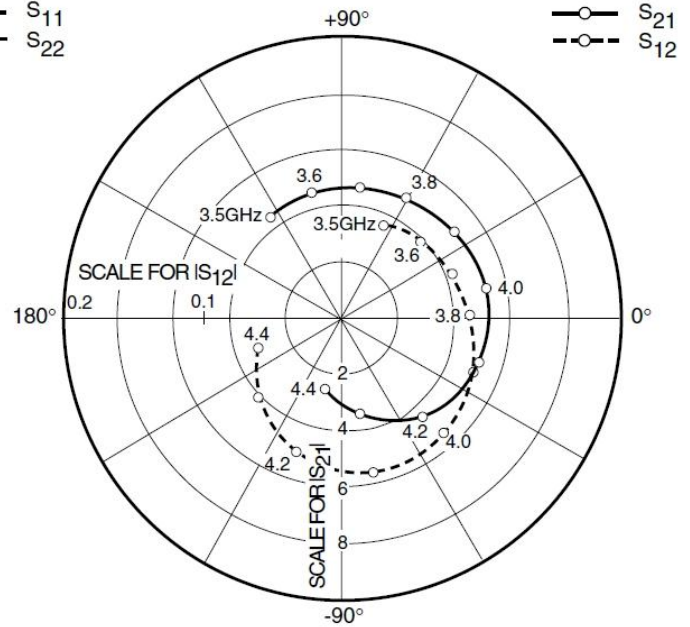
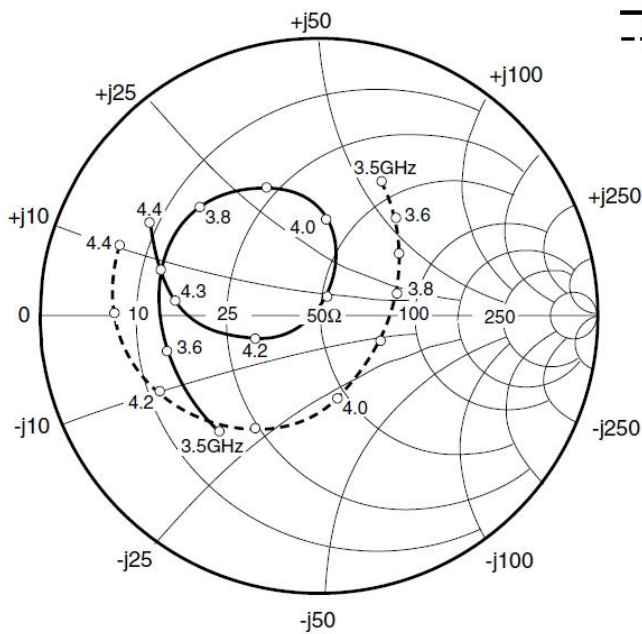


### OUTPUT POWER vs. FREQUENCY



### OUTPUT POWER vs. INPUT POWER



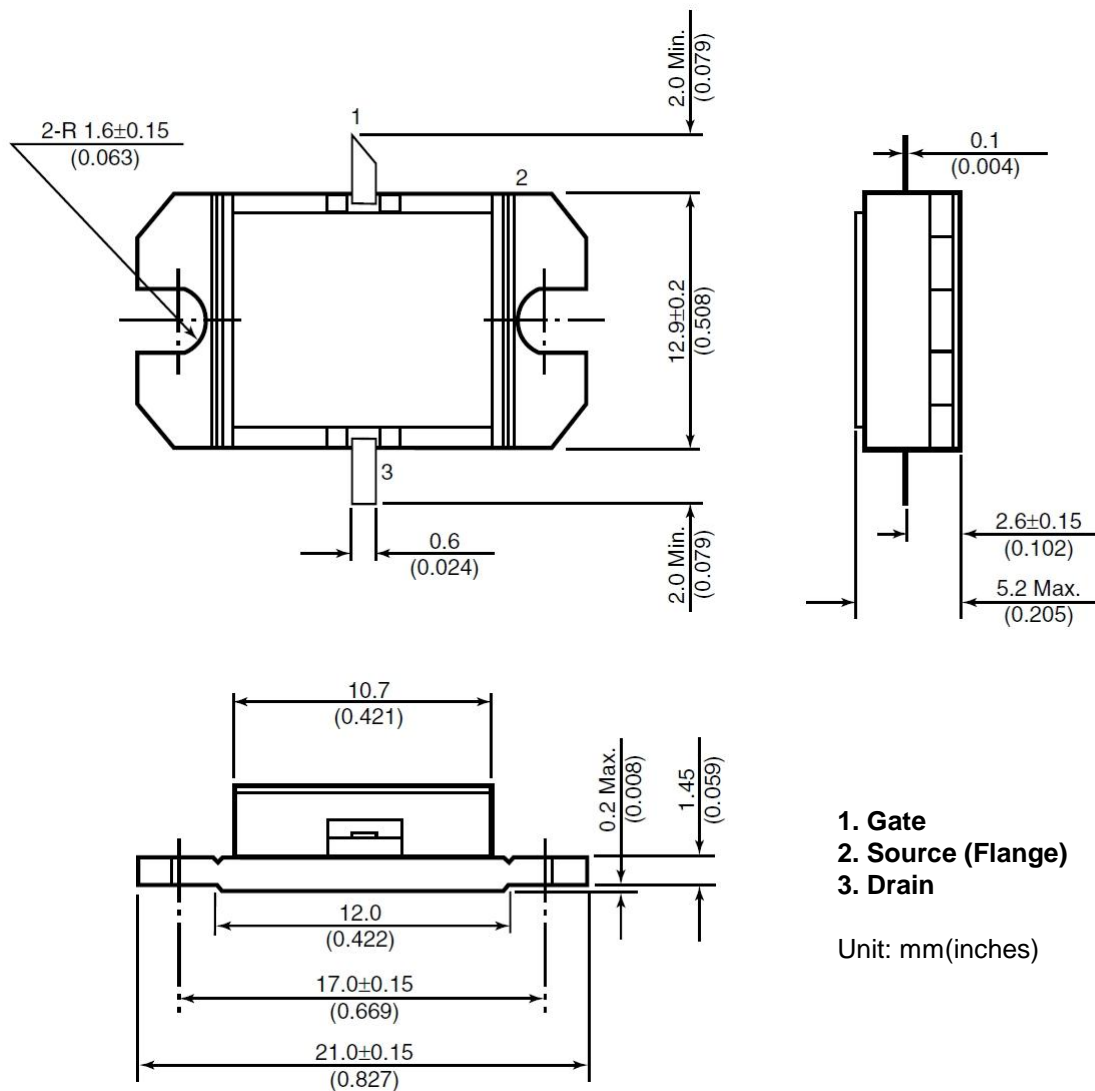


### S-PARAMETERS

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

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3500	0.544	-131.8	4.422	126.1	0.072	66.8	0.525	65.0
3600	0.565	-167.2	4.582	104.0	0.079	44.5	0.445	53.3
3700	0.592	163.0	4.706	82.3	0.084	21.8	0.359	38.8
3800	0.578	137.2	4.824	60.9	0.092	0.5	0.287	15.8
3900	0.503	112.5	4.999	37.4	0.101	-22.7	0.245	-23.6
4000	0.354	86.5	5.190	11.5	0.109	-48.7	0.306	-76.9
4100	0.079	69.5	5.088	-18.7	0.111	-78.8	0.468	-119.9
4200	0.248	-160.8	4.476	-51.1	0.102	-109.3	0.634	-154.3
4300	0.526	173.3	3.516	-80.5	0.082	-137.0	0.730	179.6
4400	0.698	151.1	2.594	-104.6	0.064	-160.3	0.757	160.6

**Case Style "IB"**  
**Metal-Ceramic Hermetic Package**





**FLM3742-4F**

***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.