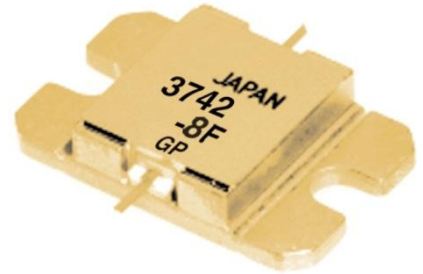


### FEATURES

- High Output Power:  $P_{1dB} = 39.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 11.0\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 37\%$  (Typ.)
- Low IM3 =  $-46\text{dBc}@P_o = 28.5\text{dBm}$
- Broad Band: 3.7 to 4.2GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



### DESCRIPTION

The FLM3742-8F 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	$P_T$	$T_c = 25\text{deg.C}$	42.8	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 -4.4 mA respectively with gate resistance of 100ohm.

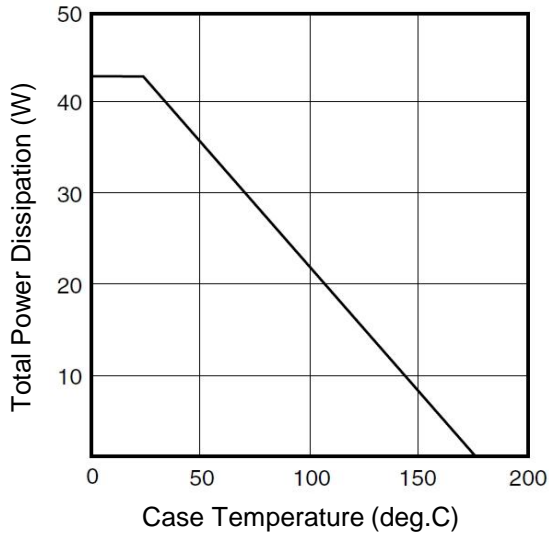
### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25\text{deg.C}$ )

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	3900	5850	mA
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=2200\text{mA}$	-	2000	-	mS
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=180\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-180\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS}=10V,$ $I_{DS}=0.55 I_{DSS}$ (Typ.), $f=3.7$ to $4.2$ GHz, $Z_S=Z_L=50\text{ohm}$	38.5	39.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		10.0	11.0	-	dB
Drain Current	$I_{dsr}$		-	2200	2600	mA
Power-added Efficiency	$\eta_{add}$		-	37	-	%
Gain Flatness	$\Delta G$		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 4.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 28.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	3.0	3.5	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

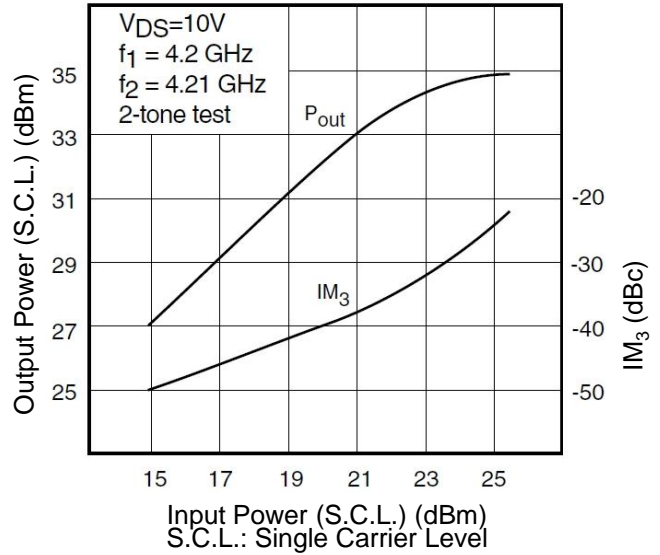
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

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

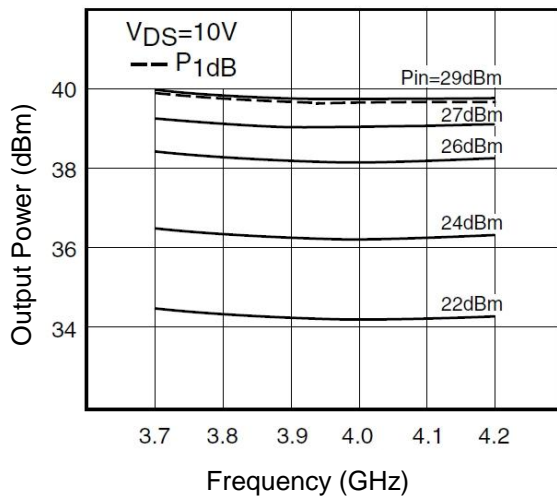
**POWER DERATING CURVE**



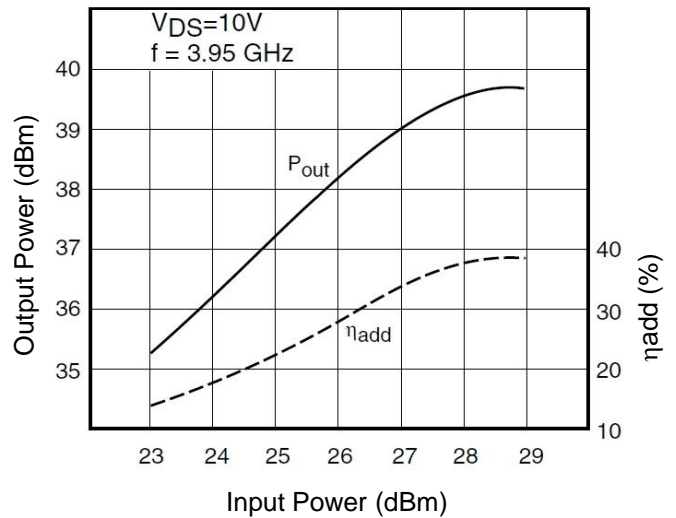
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**

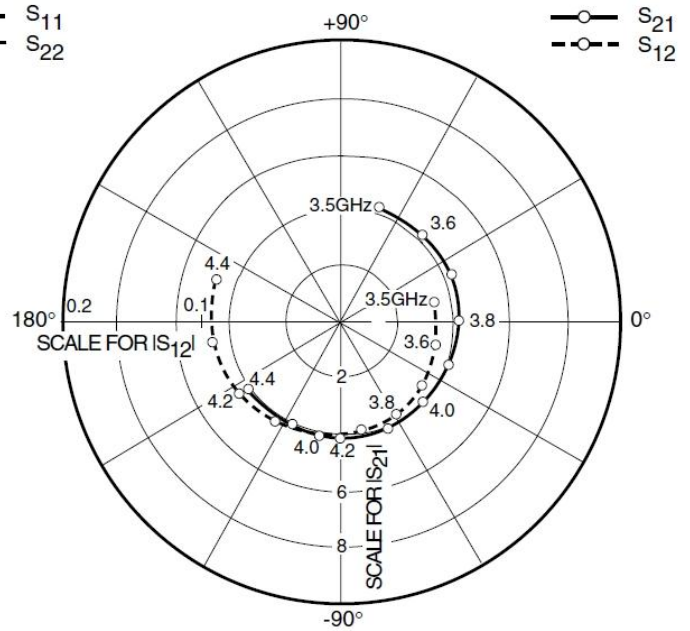
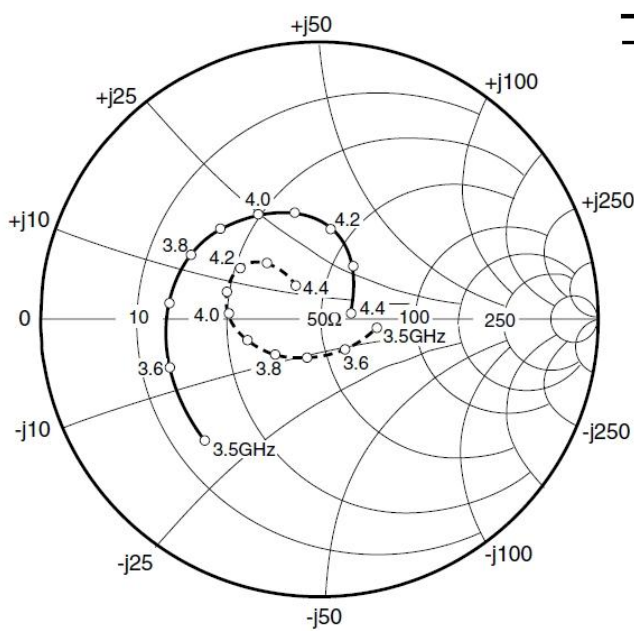


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**



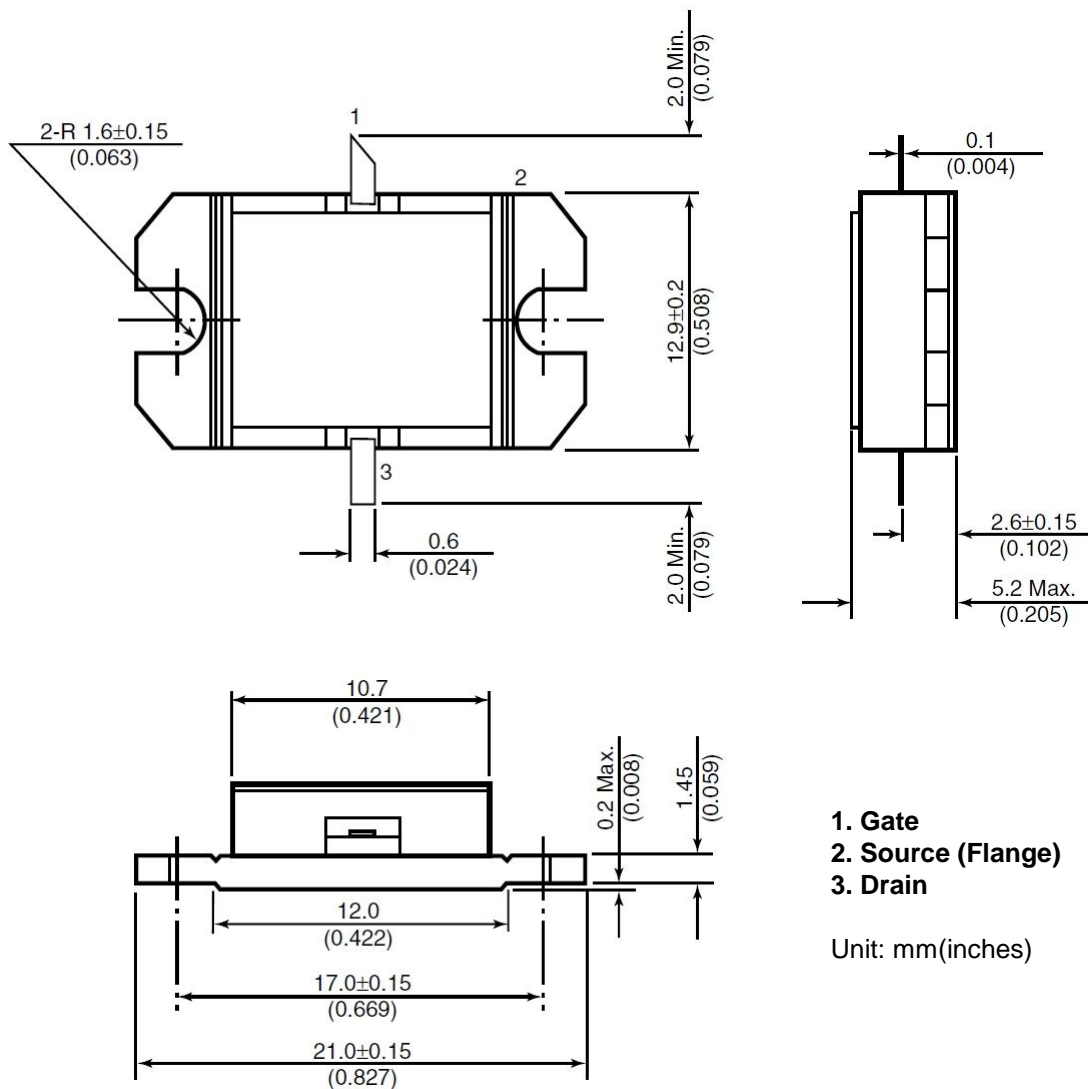


### S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3500	0.603	-133.6	4.266	71.3	0.068	11.2	0.207	-10.9
3600	0.570	-161.8	4.268	46.8	0.070	-13.5	0.145	-53.9
3700	0.549	174.4	4.221	23.1	0.073	-37.9	0.149	-106.6
3800	0.520	154.2	4.158	0.8	0.077	-59.5	0.208	-140.7
3900	0.486	137.2	4.089	-21.7	0.078	-80.1	0.270	-162.7
4000	0.444	120.1	4.074	-43.9	0.082	-102.4	0.321	179.2
4100	0.393	103.2	4.075	-66.7	0.085	-124.6	0.347	163.5
4200	0.326	83.3	4.108	-90.7	0.089	-147.0	0.334	147.6
4300	0.227	56.9	4.165	-116.5	0.093	-171.1	0.274	133.0
4400	0.112	6.8	4.141	-145.2	0.095	160.9	0.147	126.3

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





**FLM3742-8F**

***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.