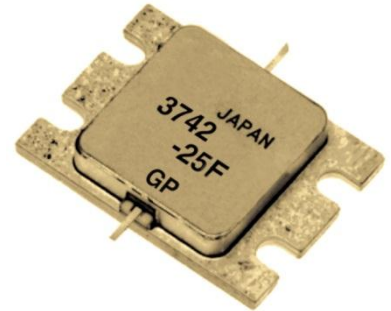


FEATURES

- High Output Power: $P_{1dB} = 44.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 10.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 41\%$ (Typ.)
- Low IM3 = $-46\text{dBc}@P_o = 33.5\text{dBm}$
- Broad Band: 3.7 to 4.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



DESCRIPTION

The FLM3742-25F 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	$T_c = 25\text{deg.C}$	93.7	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 64.0 and -11.2 mA respectively with gate resistance of 25ohm.

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

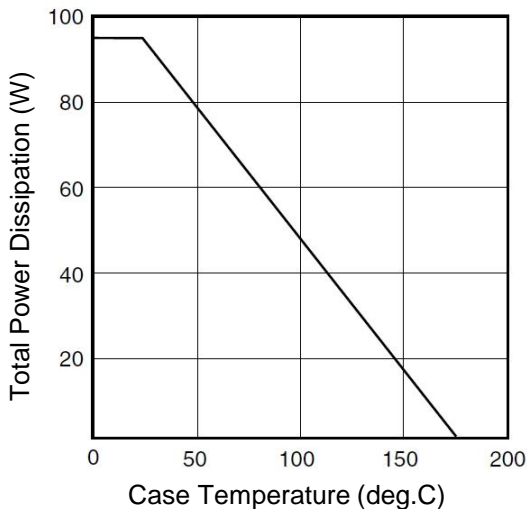
Item	Symbol	Test Conditions	Limit			Unit	
			Min.	Typ.	Max.		
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	11.6	17.4	A	
Transconductance	g_m	$V_{DS}=5V, I_{DS}=6800\text{mA}$	-	5800	-	mS	
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=600\text{mA}$	-1.0	-2.0	-3.5	V	
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-600\mu\text{A}$	-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, $Z_S=Z_L=50\text{ohm}$	43.5	44.5	-	dBm	
Power Gain at 1dB G.C.P.	G_{1dB}		9.5	10.5	-	dB	
Drain Current	I_{dsr}		-	6200	7600	mA	
Power-added Efficiency	η_{add}		-	41	-	%	
Gain Flatness	ΔG		-	-	+/-0.6	dB	
3rd Order Intermodulation Distortion	IM_3		$f = 4.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 33.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}		Channel to Case	-	1.4	1.6	deg.C/W
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	100	deg.C	

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

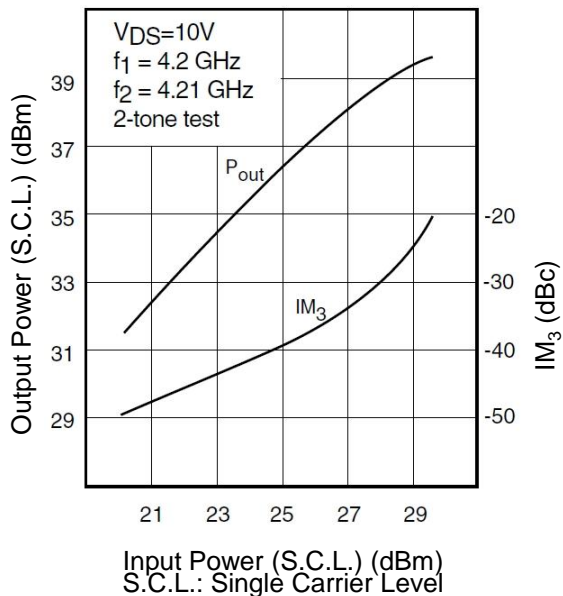
CASE STYLE	IK	
ESD	Class 3A	4000V to 8000V
RoHS Compliance	Yes	

Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)

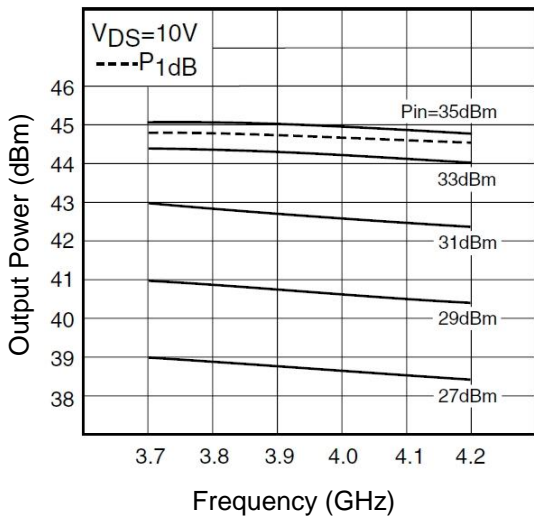
POWER DERATING CURVE



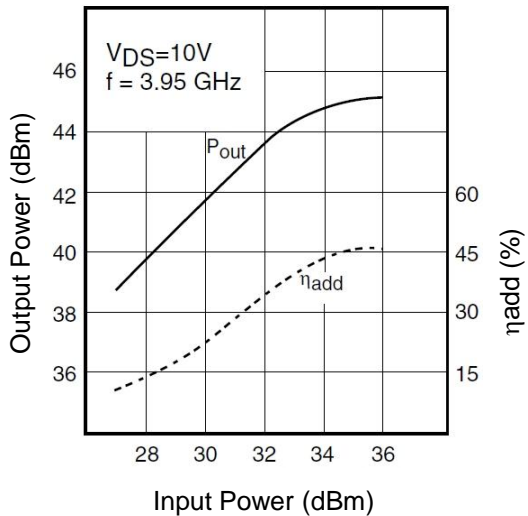
OUTPUT POWER & IM₃ vs. INPUT POWER

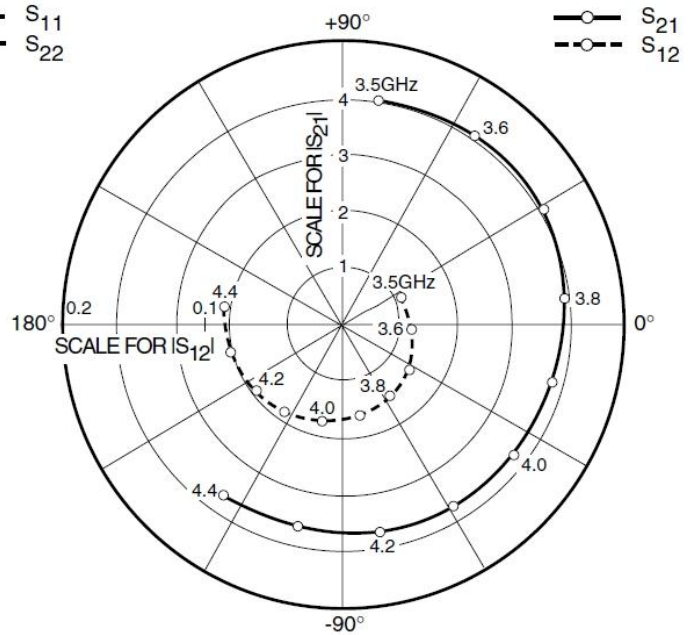
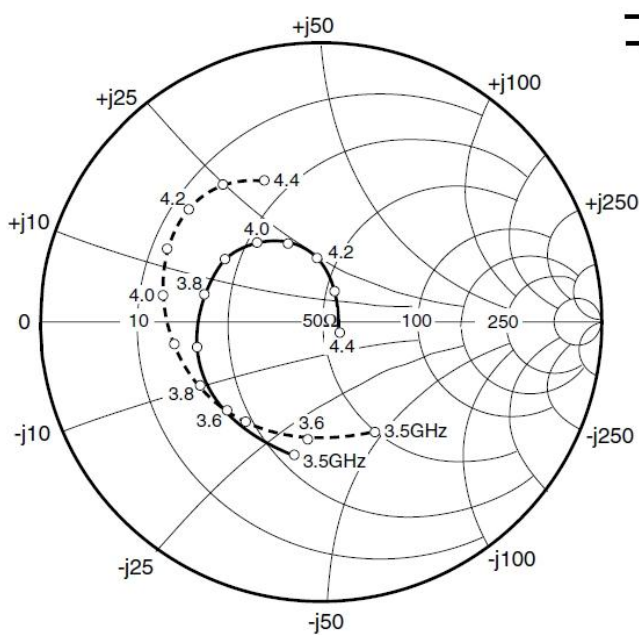


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



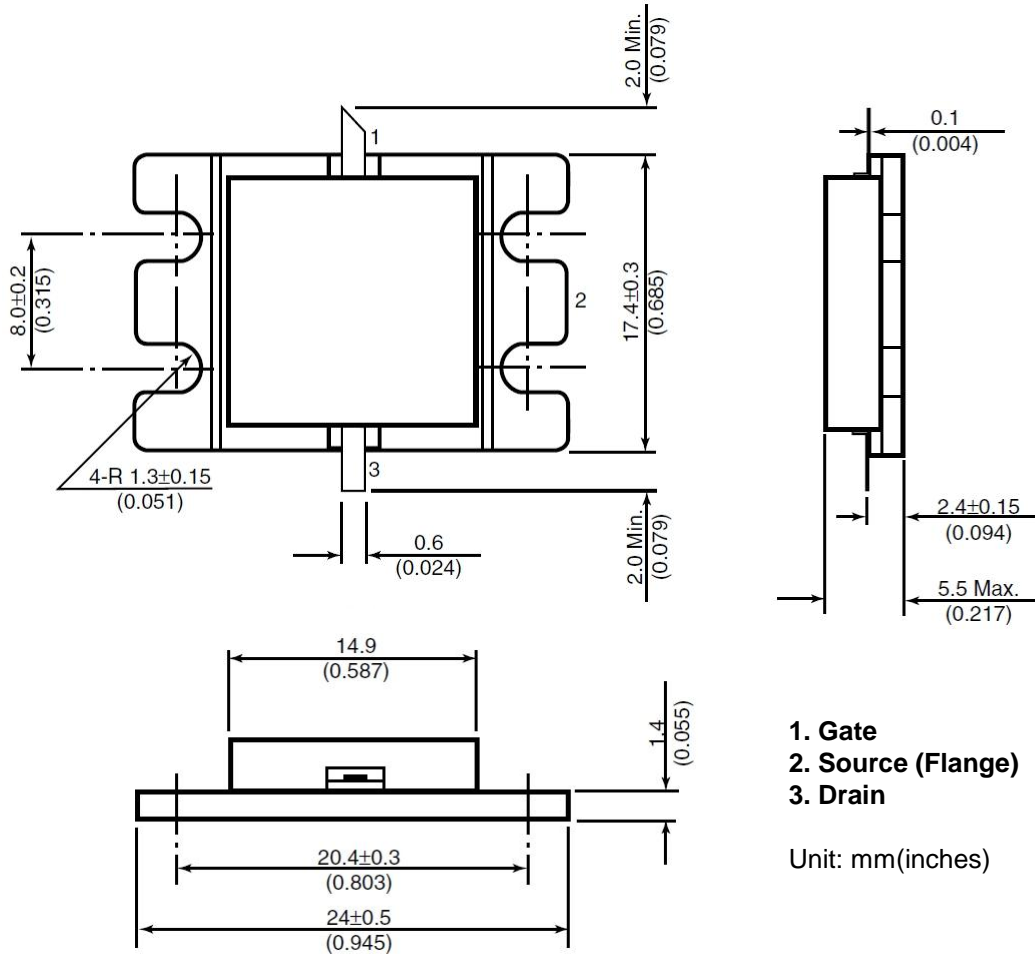


S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 6800mA$

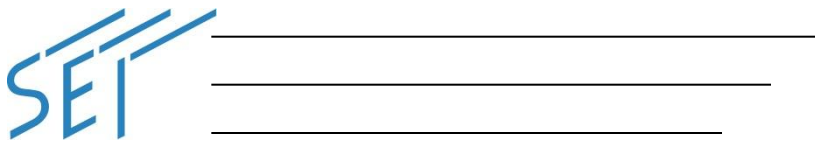
FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3500	0.486	-101.4	3.980	80.7	0.045	25.6	0.441	-64.1
3600	0.455	-137.6	4.079	54.6	0.050	-4.6	0.428	-96.2
3700	0.450	-168.5	4.043	29.5	0.057	-32.7	0.444	-125.9
3800	0.433	166.6	3.969	6.5	0.060	-57.3	0.489	-150.8
3900	0.413	146.8	3.862	-15.8	0.065	-79.9	0.532	-171.5
4000	0.366	128.7	3.792	-37.3	0.070	-102.7	0.579	170.7
4100	0.307	112.4	3.757	-58.6	0.074	-123.4	0.609	154.7
4200	0.227	93.0	3.723	-80.1	0.078	-143.5	0.618	139.8
4300	0.123	65.0	3.735	-102.6	0.083	-165.8	0.602	125.7
4400	0.072	-27.3	3.709	-125.6	0.087	172.0	0.546	112.7

Case Style "IK"
Metal-Ceramic Hermetic Package



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

Unit: mm(inches)



FLM3742-25F
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.