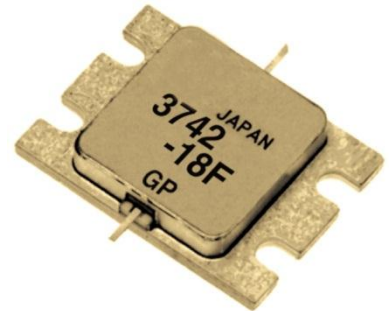


FEATURES

- High Output Power: $P_{1dB} = 43.0\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 10.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low IM3 = $-46\text{dBc}@P_o = 32.0\text{dBm}$
- Broad Band: 3.7 to 4.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



DESCRIPTION

The FLM3742-18F 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	$T_c = 25\text{deg.C}$	83.3	W
Storage Temperature	T_{stq}		-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 26.0 and -11.6 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}	$V_{DS}=5V, V_{GS}=0V$	-	9.0	13.5	A
Transconductance	g_m	$V_{DS}=5V, I_{DS}=4800\text{mA}$	-	4000	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=480\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-480\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V,$	42.0	43.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}	$I_{DS}=0.55 I_{DSS}$ (Typ.),	9.5	10.5	-	dB
Drain Current	I_{dsr}	$f=3.7$ to 4.2 GHz,	-	4800	6000	mA
Power-added Efficiency	η_{add}	$Z_S=Z_L=50\text{ohm}$	-	37	-	%
Gain Flatness	ΔG		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 4.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 32.0\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.6	1.8	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

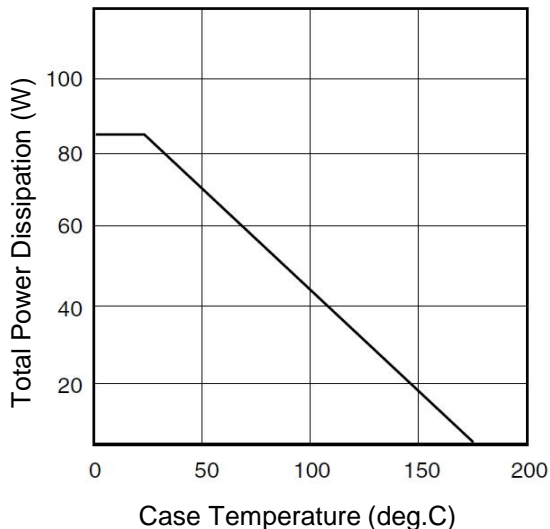
CASE STYLE	IK
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ESD	Class 3A	4000V to 8000V
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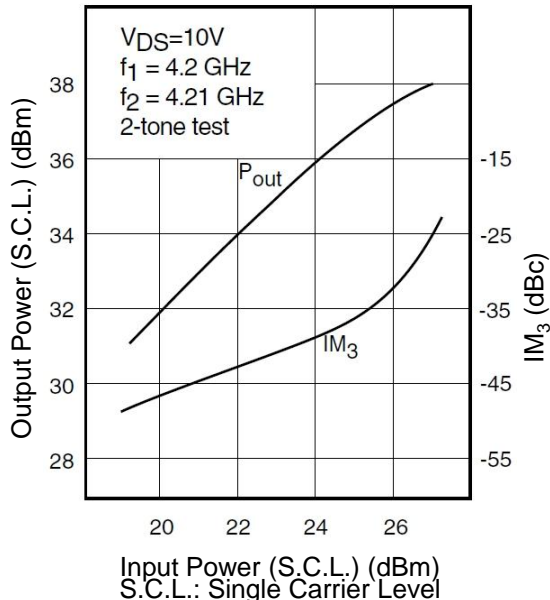
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)

RoHS Compliance	Yes
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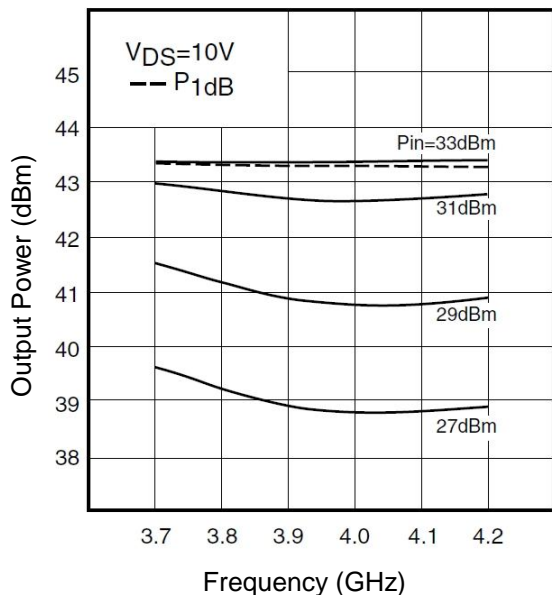
POWER DERATING CURVE



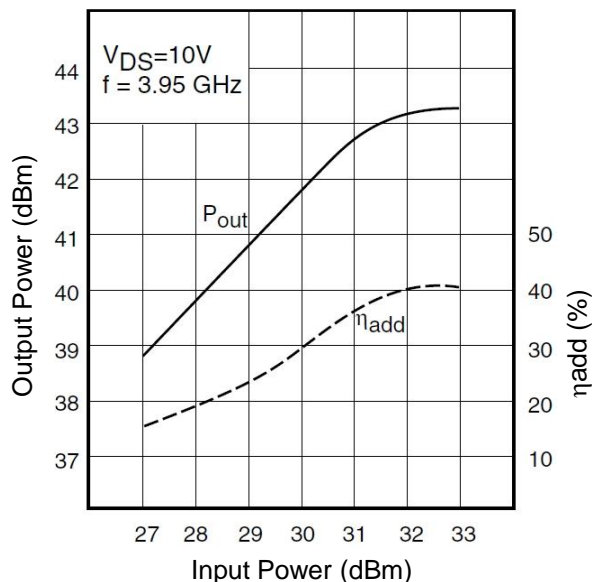
OUTPUT POWER & IM₃ vs. INPUT POWER

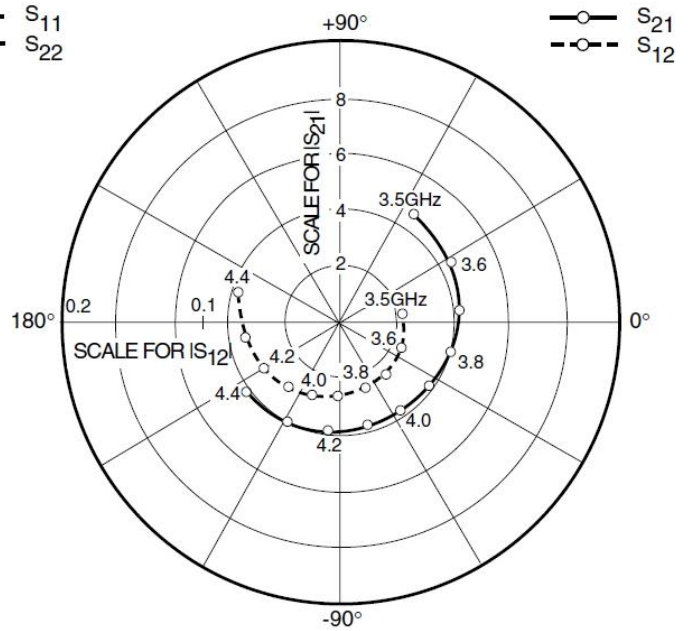
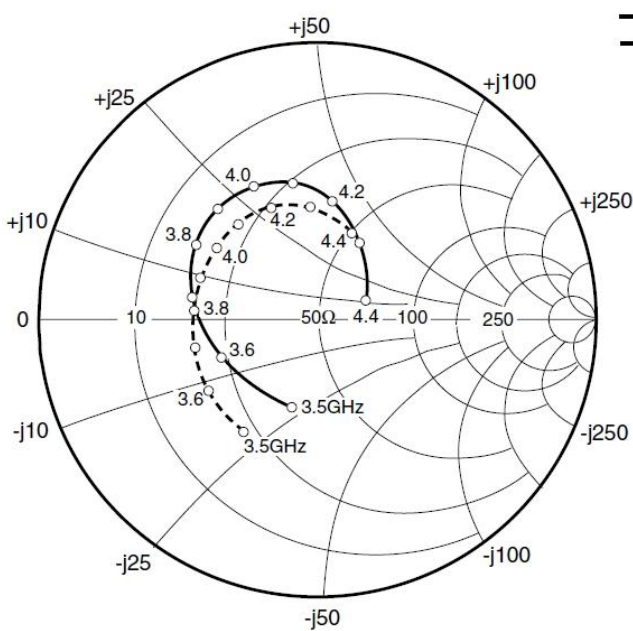


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



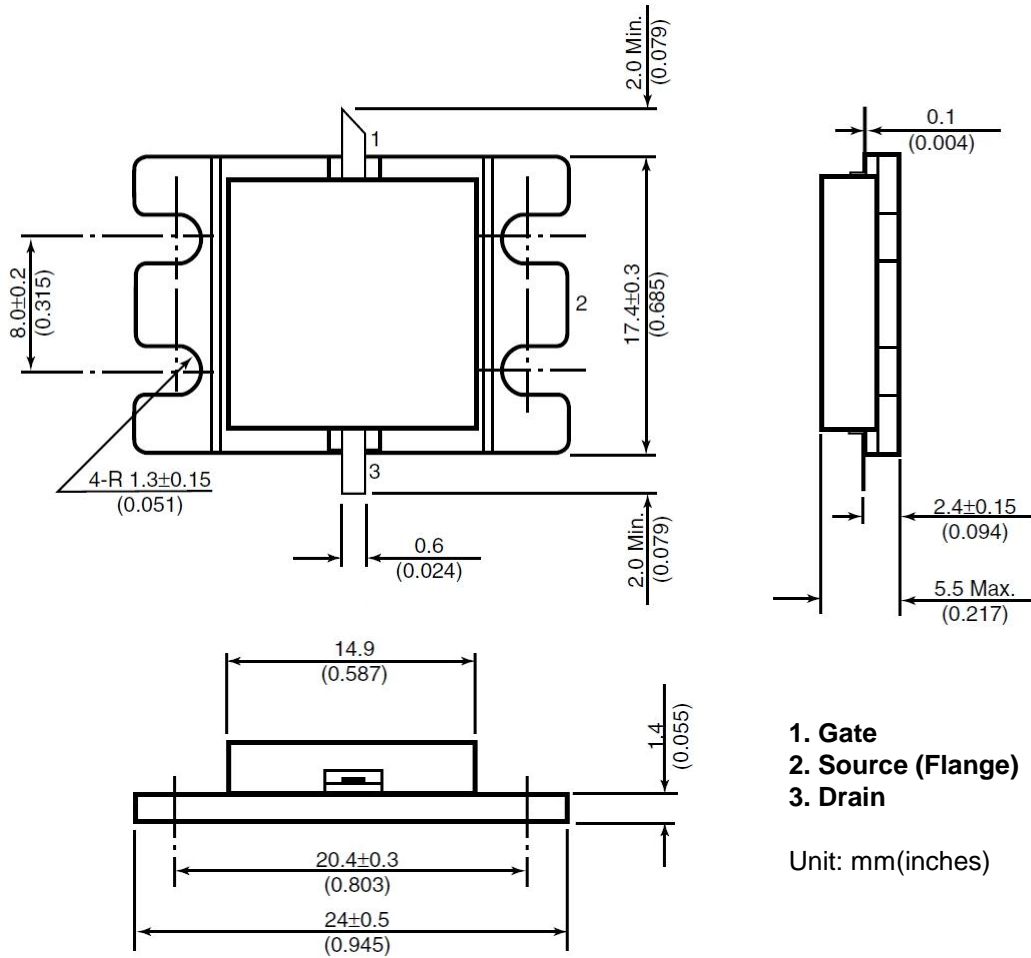


S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 4800mA$

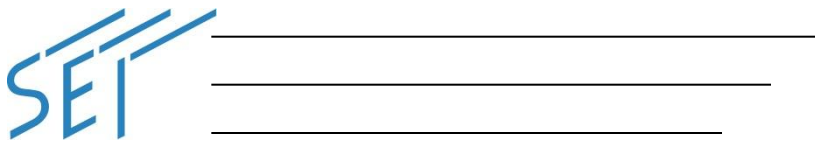
FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3500	0.326	-106.3	4.659	55.5	0.043	5.6	0.489	-123.6
3600	0.371	-157.9	4.532	29.1	0.046	-24.1	0.465	-146.9
3700	0.455	170.2	4.275	5.2	0.049	-48.6	0.453	-166.9
3800	0.507	147.9	4.060	-16.0	0.050	-70.0	0.452	176.1
3900	0.537	131.1	3.891	-36.0	0.053	-91.5	0.452	160.6
4000	0.531	115.5	3.821	-55.4	0.056	-111.7	0.453	145.6
4100	0.498	100.4	3.838	-75.1	0.060	-129.2	0.450	130.5
4200	0.432	82.7	3.934	-95.6	0.066	-149.3	0.438	113.5
4300	0.318	60.9	4.062	-118.4	0.071	-170.9	0.405	93.9
4400	0.180	19.6	4.174	-143.4	0.077	164.6	0.341	68.4

Case Style "IK"
Metal-Ceramic Hermetic Package



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

Unit: mm(inches)



FLM3742-18F

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.