

# FLM5964-35F

## C-Band Internally Matched FET

### FEATURES

- High Output Power: P<sub>1dB</sub>=45.5dBm(Typ.)
- High Gain: G<sub>1dB</sub>=9.0dB(Typ.)
- High PAE:  $\eta_{add}$ =36%(Typ.)
- Broad Band: 5.9~6.4GHz
- Impedance Matched Z<sub>in</sub>/Z<sub>out</sub> = 50 $\Omega$
- Hermetically Sealed Package



### DESCRIPTION

The FLM5964-35F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 $\Omega$  system.

### ABSOLUTE MAXIMUM RATINGS (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	15	V
Gate-Source Voltage	V <sub>GS</sub>	-5	V
Total Power Dissipation	P <sub>T</sub>	115	W
Storage Temperature	T <sub>stg</sub>	-65 to +175	°C
Channel Temperature	T <sub>ch</sub>	175	°C

### RECOMMENDED OPERATING CONDITION(Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V <sub>DS</sub>		≤10	V
Forward Gate Current	I <sub>GF</sub>	RG=10 $\Omega$	≤108	mA
Reverse Gate Current	I <sub>GR</sub>	RG=10 $\Omega$	≥-23.2	mA

### ELECTRICAL CHARACTERISTICS (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V	-	16	-	A
Transconductance	g <sub>m</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =8.0A	-	16	-	S
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =480mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =-480 $\mu$ A	-5.0	-	-	V
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =10V	45.0	45.5	-	dBm
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>	f=5.9 - 6.4 GHz	8.0	9.0	-	dB
Drain Current	I <sub>DSr</sub>	I <sub>DS</sub> (DC)=8.0A (typ.)	-	8.5	9.5	A
Power-added Efficiency	$\eta_{add}$	Z <sub>s</sub> =Z <sub>L</sub> =50 ohm	-	36	-	%
Gain Flatness	$\Delta$ G		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM <sub>3</sub>	f=6.4 GHz $\Delta$ f=10MHz, 2-tone Test P <sub>out</sub> =35.0dBm(S.C.L.)	-38	-40	-	dBc
Thermal Resistance	R <sub>th</sub>	Channel to Case	-	1.1	1.3	°C/W
Channel Temperature Rise	$\Delta$ T <sub>ch</sub>	10V x I <sub>DS</sub> (DC) X R <sub>th</sub>	-	-	100	°C

### CASE STYLE: IK

G.C.P.: Gain Compression Point

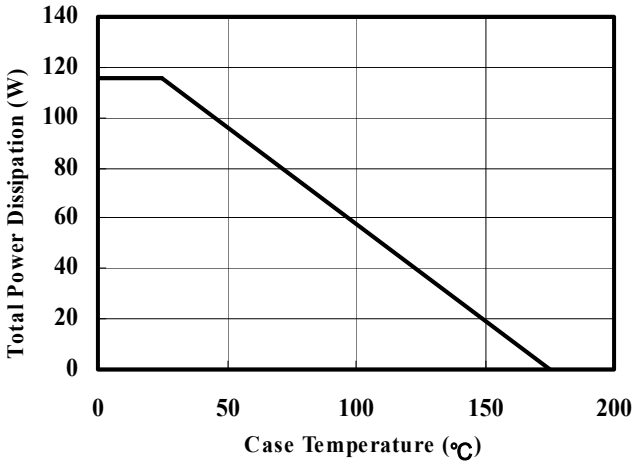
ESD	Class III	2000V	~
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Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5k $\Omega$ )

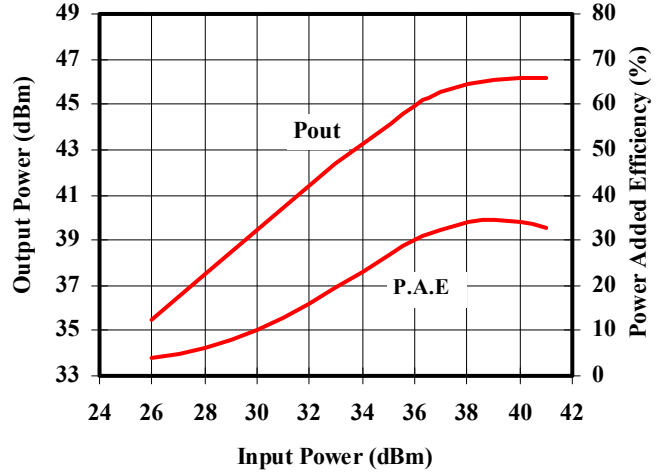
# FLM5964-35F

C-Band Internally Matched FET

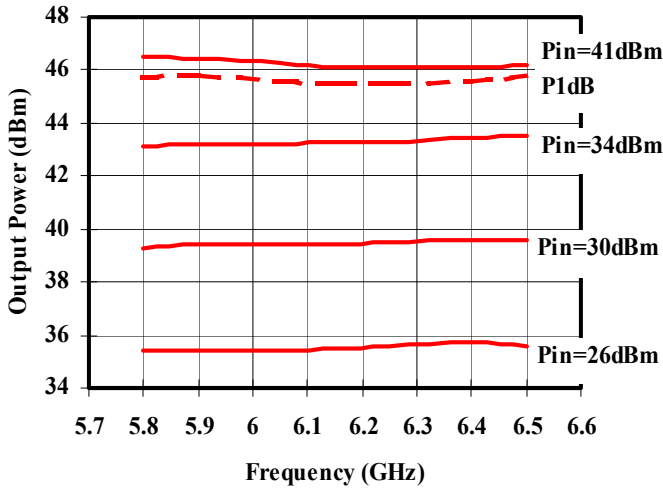
Power Derating Curve



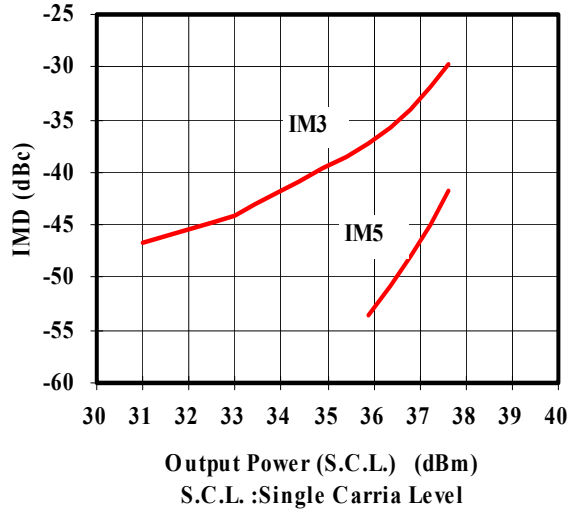
Output Power & P.A.E. vs. Input Power  
VDS=10V, IDS(DC)=8A, F=6.15GHz



Output Power vs. Frequency  
VDS=10V, IDS(DC)=8A



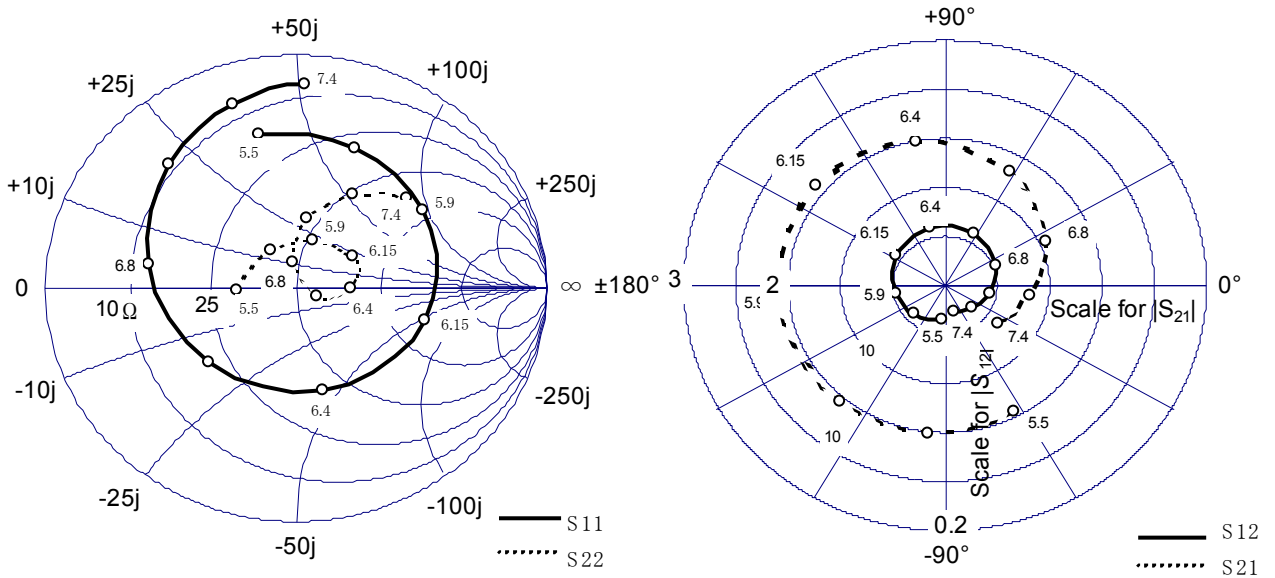
IMD vs. Output Power  
VDS=10V, IDS(DC)=8A  
f1=6.40GHz, f2=6.41GHz



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### ■ S-PARAMETER



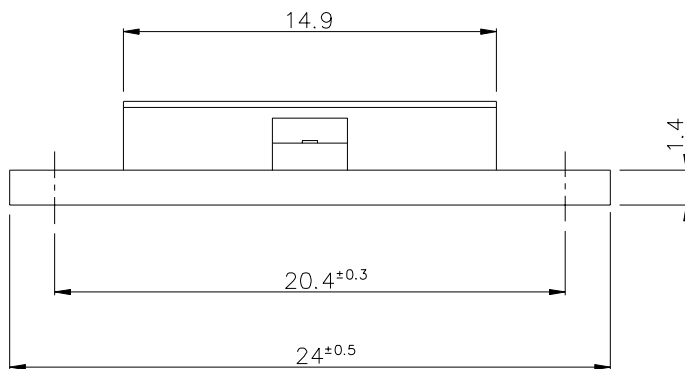
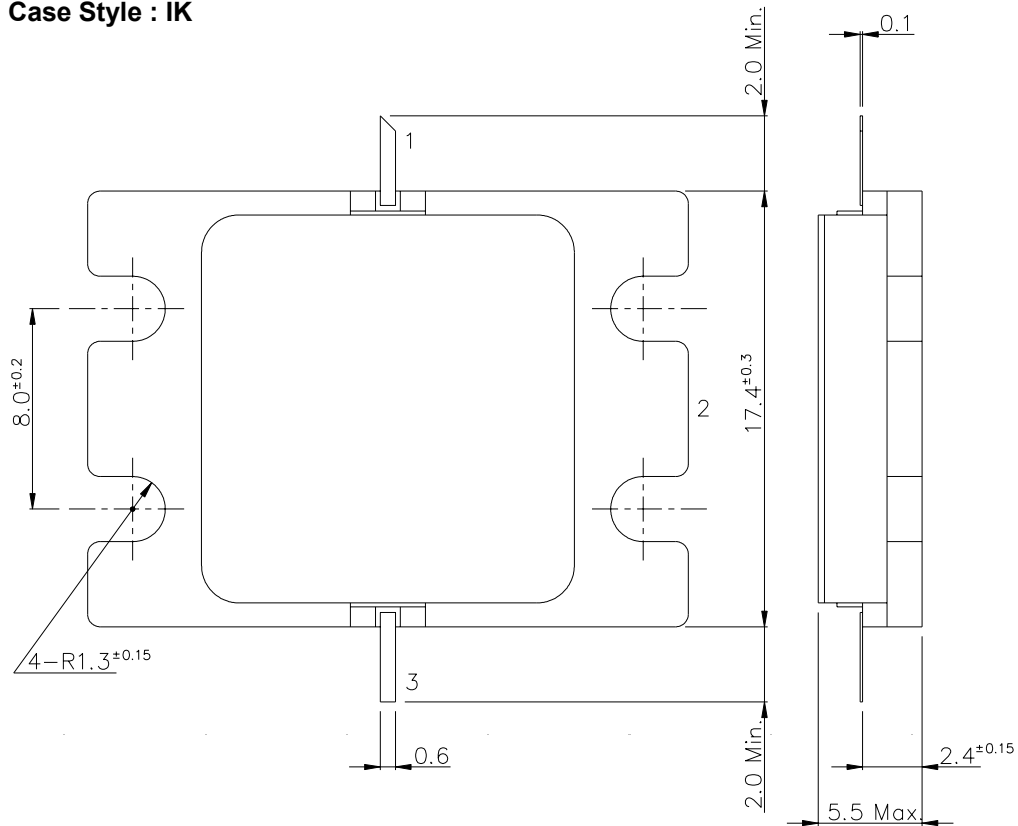
VDS=10V, IDS(DC)=8.0A

Freq. [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.50	0.67	102.87	2.88	-62.72	0.04	-95.54	0.24	-177.89
5.60	0.66	85.51	2.95	-79.17	0.05	-114.71	0.20	153.50
5.70	0.65	68.42	3.02	-96.11	0.05	-134.53	0.19	122.57
5.80	0.63	50.90	3.06	-113.27	0.05	-153.13	0.20	95.12
5.90	0.61	33.18	3.11	-130.34	0.06	-169.44	0.22	72.18
6.00	0.58	14.84	3.14	-147.42	0.06	172.50	0.24	52.33
6.10	0.55	-4.44	3.18	-165.14	0.06	155.67	0.26	37.03
6.20	0.52	-25.22	3.20	177.48	0.07	138.90	0.26	24.21
6.30	0.47	-49.01	3.20	159.01	0.07	120.83	0.25	12.17
6.40	0.45	-76.47	3.19	140.15	0.07	103.25	0.22	-0.99
6.50	0.44	-106.87	3.12	120.73	0.07	83.21	0.16	-13.32
6.60	0.47	-137.61	3.00	100.85	0.07	62.73	0.09	-19.73
6.70	0.52	-166.01	2.82	81.21	0.07	42.98	0.03	45.23
6.80	0.59	170.37	2.62	62.01	0.06	23.63	0.11	95.85
6.90	0.67	150.03	2.36	43.29	0.06	6.16	0.21	91.96
7.00	0.73	133.37	2.13	24.82	0.05	-11.73	0.30	81.85
7.10	0.79	119.68	1.89	8.66	0.05	-26.89	0.38	71.10
7.20	0.83	107.43	1.66	-7.74	0.04	-41.76	0.46	60.22
7.30	0.86	97.28	1.45	-22.74	0.04	-60.07	0.53	50.29
7.40	0.87	87.88	1.26	-36.91	0.03	-69.68	0.59	41.32

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■ Package Out Line  
Case Style : IK



PIN ASSIGNMENT

- 1 : GATE
- 2 : SOURCE
- 3 : DRAIN
- 4 : SOURCE

Unit : mm

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## C-Band Internally Matched FET

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- 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.

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