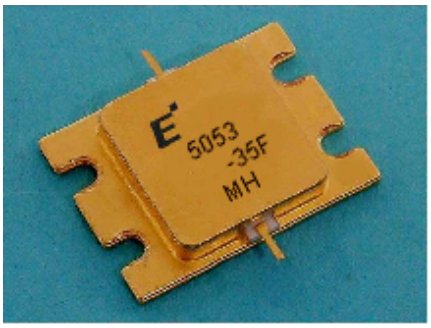
FLM5053-35F

C-Band Internally Matched FET



FEATURES

- High Output Power: P1dB=45.5dBm(Typ.)
- High Gain: G1dB=8.0dB(Typ.)
- High PAE: ηadd=35%(Typ.)
- Broad Band: 5.0～5.3GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package

DESCRIPTION

The FLM5053-35F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50Ω system.

ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	15	V
Gate-Source Voltage	V_{GS}	-5	V
Total Power Dissipation	P_T	115.4	W
Storage Temperature	T_{stg}	-65 to +175	°C
Channel Temperature	T_{ch}	175	°C

RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V_{DS}		≦10	V
Forward Gate Current	I_{GF}	R_G=25 ohm	≦52.0	mA
Reverse Gate Current	I_{GR}	R_G=25 ohm	≧-23.2	mA
Storage Temperature	T_{stg}	-55 to +125		°C

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS}=5V , V_{GS}=0V	-	16.0	-	A
Trans conductance	g_m	V_{DS}=5V , I_{DS}=8.0A	-	8.0	-	S
Pinch-off Voltage	V_p	V_{DS}=5V , I_{DS}=960mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}=-960uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS}=10V f= 5.0 ~ 5.3 GHz I_{DS}DC=8.5A (typ.) Zs=Z_L=50 ohm	44.5	45.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.0	8.0	-	dB
Drain Current	I_{dsr}		-	8.0	9.0	A
Power-added Efficiency	N_{add}		-	35	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM_3	f=5.3 GHz Δf=10MHz ,2-tone Test Pout=34.5dBm (S.C.L.)	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.1	1.3	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} X R_{th}	-	-	100	°C

CASE STYLE : IK **G.C.P.: Gain Compression Point**

ESD	Class III	2000V ~

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

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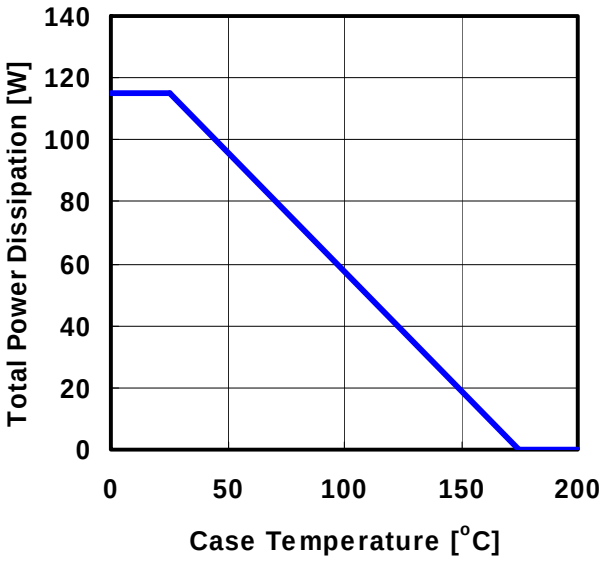
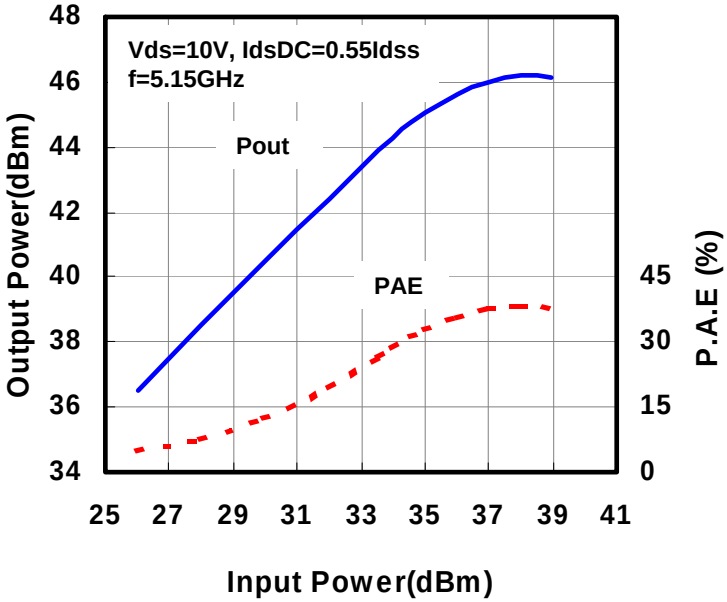
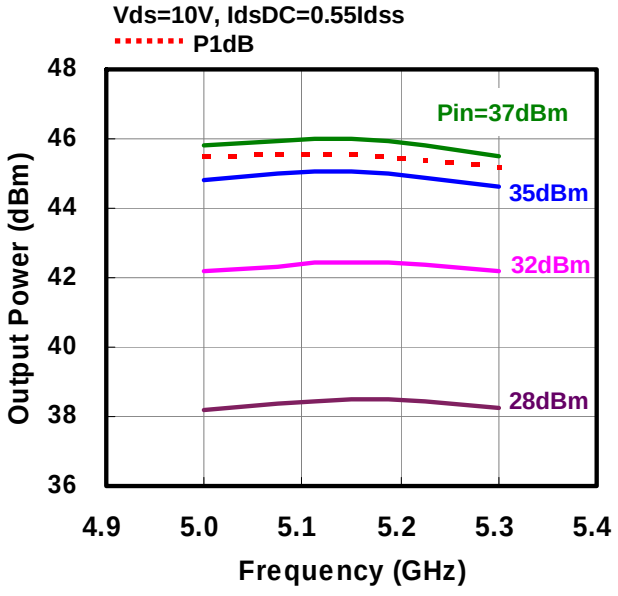
POWER DERATING CURVE



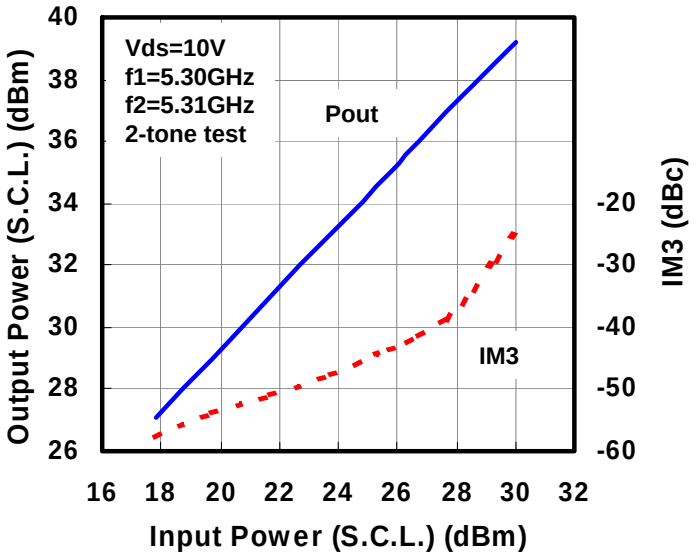
OUTPUT POWER & POWER ADDED EFFICIENCY vs INPUT POWER



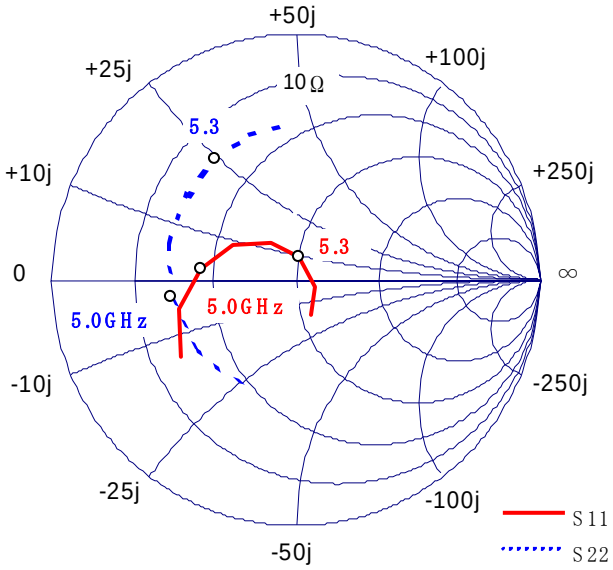
OUTPUT POWER vs FREQUENCY

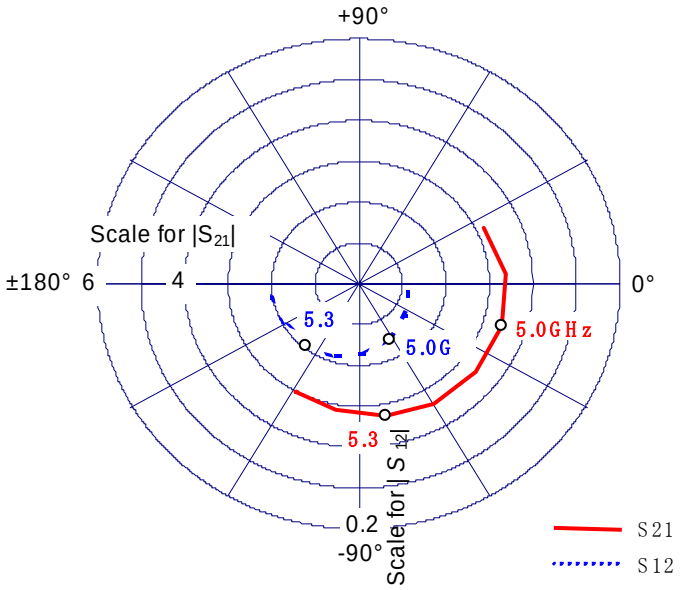


OUTPUT POWER & IM3 vs INPUT POWER



■ S-PARAMETER

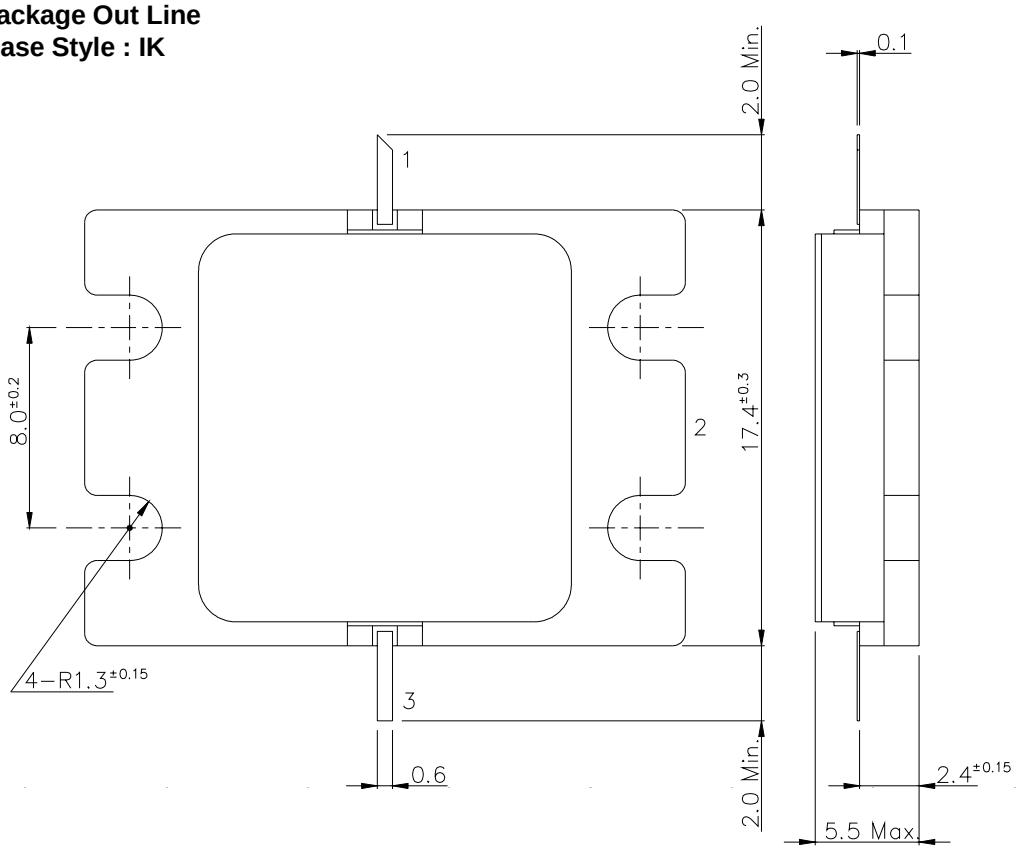


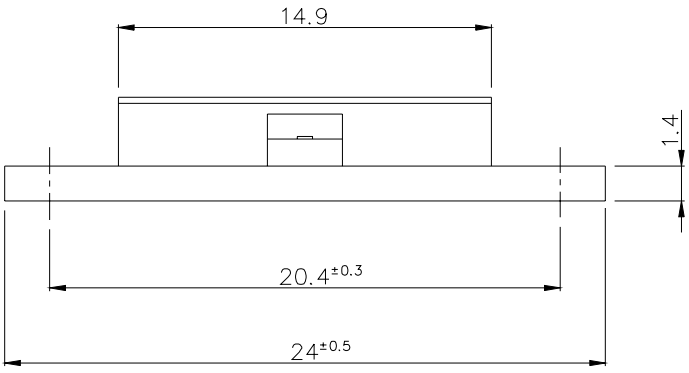


VDS=10.0V , IDS=0.55Idss

Freq	S11		S21		S12		S22	
[GHz]	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4.8	0.563	-146.2	3.204	25.6	0.038	-10.4	0.485	-118.5
4.9	0.490	-166.4	3.365	4.4	0.045	-36.7	0.486	-146.4
5.0	0.394	173.6	3.453	-17.1	0.051	-62.3	0.515	-172.7
5.1	0.296	151.1	3.454	-38.6	0.057	-86.5	0.543	163.8
5.2	0.180	125.3	3.392	-59.6	0.062	-109.4	0.564	142.4
5.3	0.091	81.9	3.281	-79.5	0.064	-129.1	0.589	123.8
5.4	0.080	-19.9	3.146	-99.6	0.066	-149.9	0.618	107.6
5.5	0.155	-65.3	3.003	-118.9	0.068	-169.8	0.630	93.8

■ **Package Out Line**
Case Style : IK





PIN ASSIGNMENT
1 : GATE
2 : SOURCE
3 : DRAIN
4 : SOURCE

Unit : mm

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CAUTION

Eudyna Devices Compound Semiconductor Products contain **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.