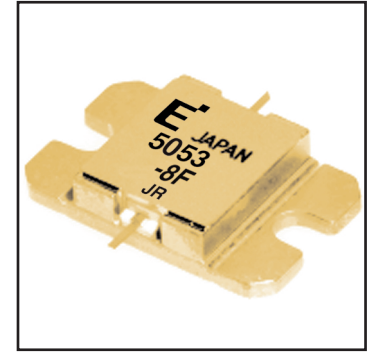


FEATURES

- High Output Power: $P_{1dB} = 39.5dBm$ (Typ.)
- High Gain: $G_{1dB} = 9.5dB$ (Typ.)
- High PAE: $\eta_{add} = 36%$ (Typ.)
- Low $IM_3 = -46dBc@P_o = 28.5dBm$
- Broad Band: 5.0 ~ 5.3GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$



DESCRIPTION

The FLM5053-8F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Eudyna's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ C$	42.8	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ C$
Channel Temperature	T_{ch}		175	$^\circ C$

Eudyna 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 100 Ω .

ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

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	$V_{DS} = 5V, I_{DS} = 2200mA$	-	2000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 180mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -180\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 5.0 \sim 5.3$ GHz, $Z_S = Z_L = 50$ ohm	38.5	39.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{dsr}		-	2200	2600	mA
Power-added Efficiency	η_{add}		-	36	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 5.3$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 28.5dBm$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	$^\circ C/W$
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	80	$^\circ C$

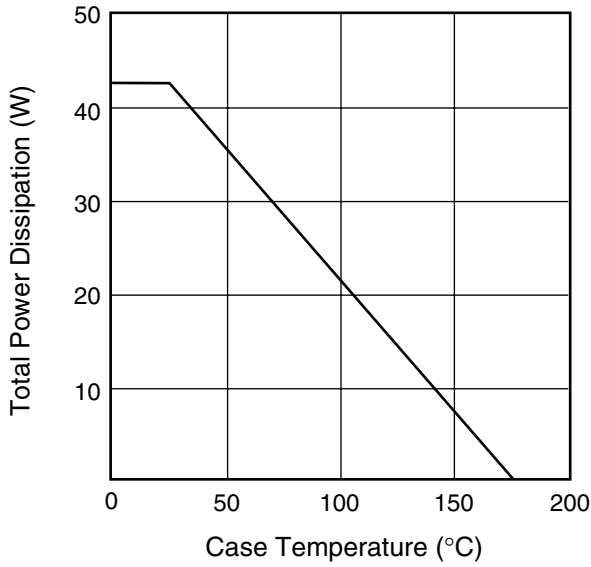
CASE STYLE: IB

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

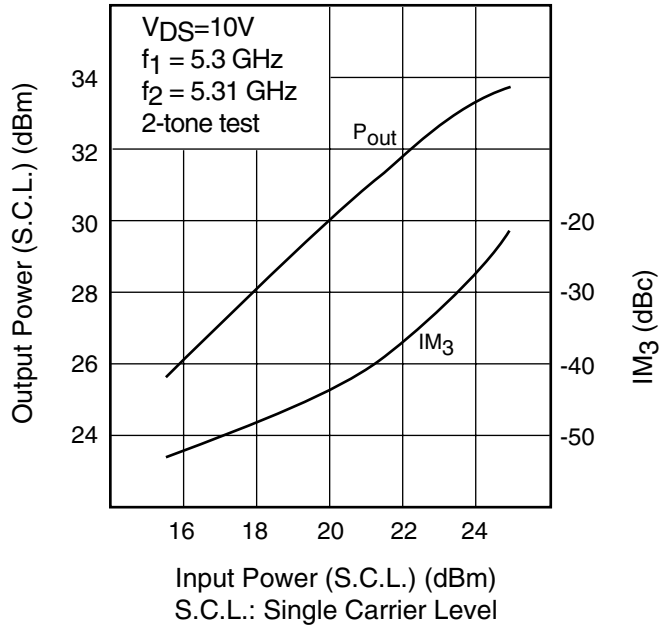
FLM5053-8F

C-Band Internally Matched FET

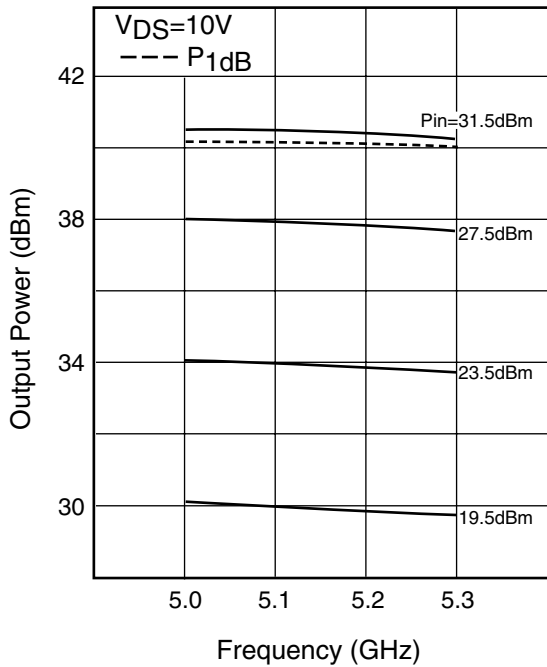
POWER DERATING CURVE



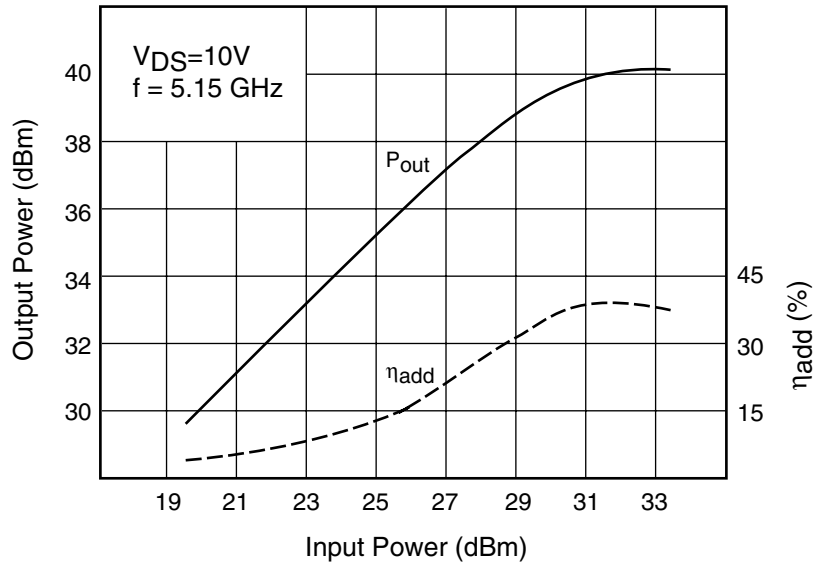
OUTPUT POWER & IM₃ vs. INPUT POWER

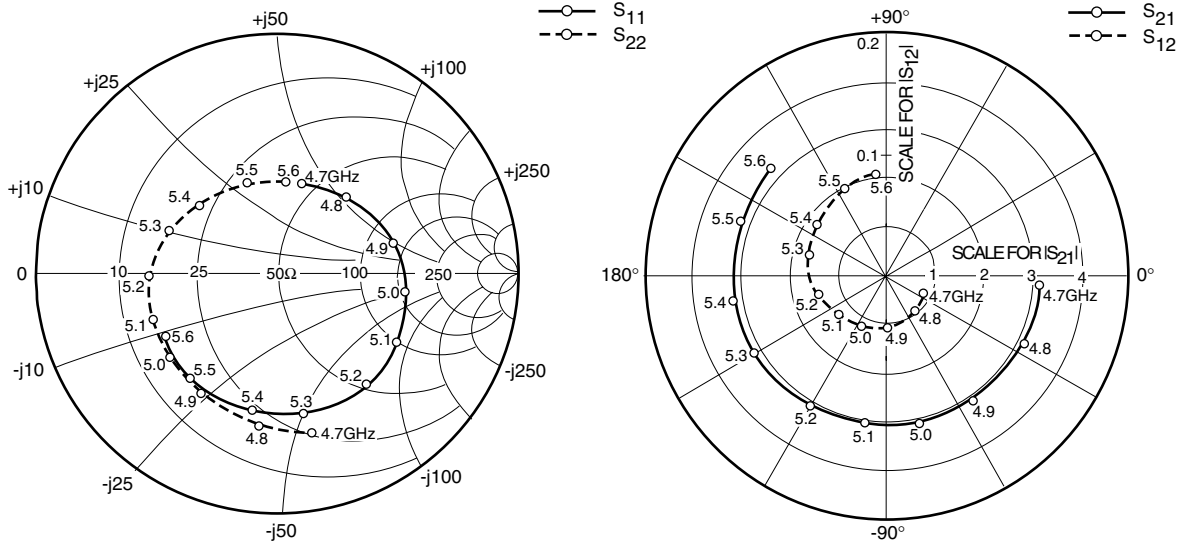


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

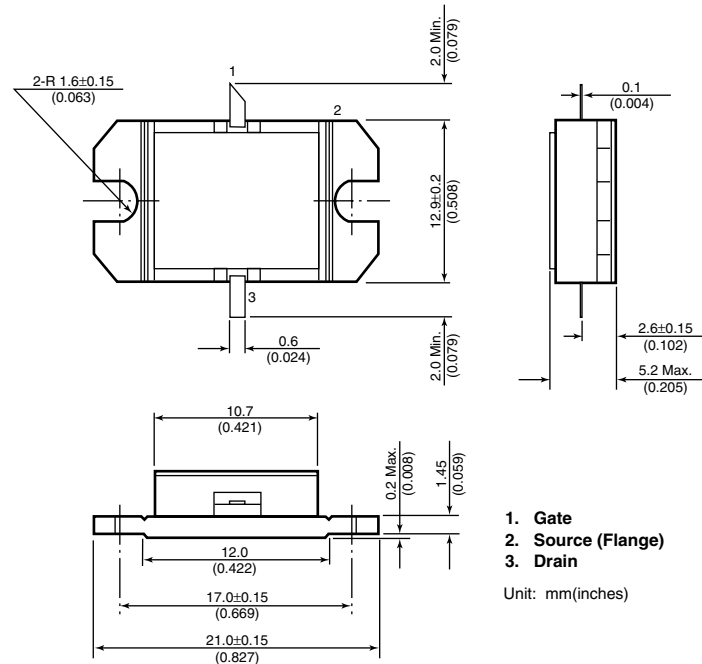
$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4700	.377	74.8	3.164	-4.1	.034	-25.8	.684	-78.4
4800	.434	46.3	3.173	-26.8	.039	-54.3	.644	-96.8
4900	.501	13.3	3.148	-56.4	.045	-91.3	.600	-121.9
5000	.543	-9.7	3.128	-77.9	.050	-117.6	.570	-140.8
5100	.574	-31.2	3.130	-99.2	.055	-140.2	.547	-159.7
5200	.597	-52.3	3.146	-120.8	.060	-163.7	.526	-177.8
5300	.606	-80.0	3.170	-149.3	.068	167.2	.482	158.1
5400	.600	-100.7	3.213	-171.0	.073	145.0	.445	137.6
5500	.569	-128.6	3.205	159.8	.078	117.6	.389	108.0
5600	.532	-149.8	3.234	137.5	.083	97.6	.373	83.1

FLM5053-8F

C-Band Internally Matched FET

Case Style "IB" Metal-Ceramic Hermetic Package



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CAUTION

Eudyna Devices Inc. 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 this product 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.

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