

FLM3135-8F

C-Band Internally Matched FET

FEATURES

- High Output Power: $P_{1dB} = 39.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 11.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low $IM_3 = -45\text{dBc}$ @ $P_o = 28.5\text{dBm}$
- Broad Band: 3.1 ~ 3.5GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM3135-8F 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 $T_a=25^\circ\text{C}$)

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

Fujitsu recommends the following conditions for the reliable operation of GaAs FETs:

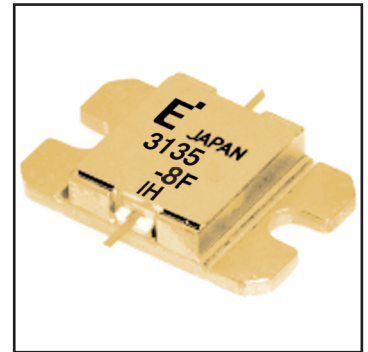
1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 32.0 and -4.4 mA respectively with gate resistance of 100 Ω .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	3900	5850	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 2200\text{mA}$	-	2000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 180\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -180\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 3.1 \sim 3.5 \text{ GHz},$ $Z_S = Z_L = 50 \text{ ohm}$	38.5	39.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10.0	11.0	-	dB
Drain Current	I_{dsr}		-	2200	2600	mA
Power-added Efficiency	η_{add}		-	37	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 3.5 \text{ GHz}, \Delta f = 10 \text{ MHz}$ 2-Tone Test $P_{out} = 28.5\text{dBm}$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

CASE STYLE: IB

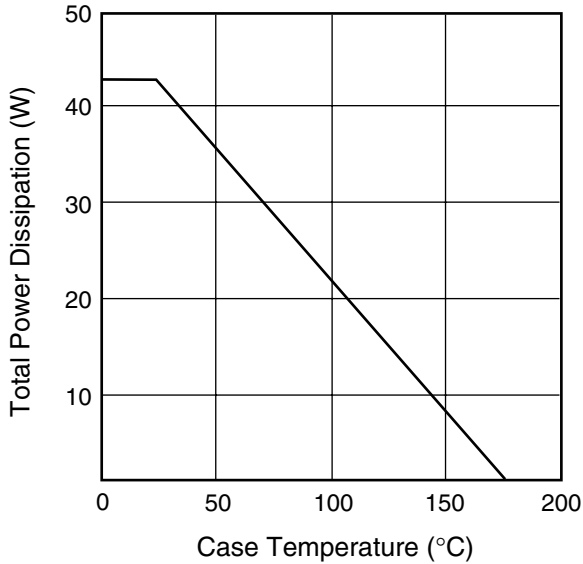
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level



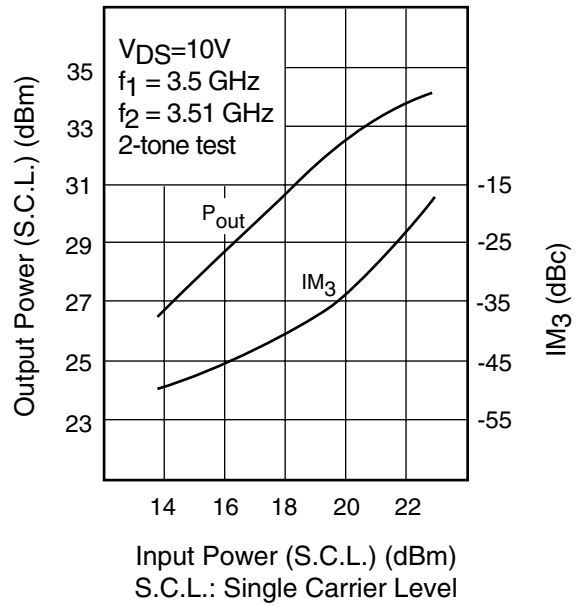
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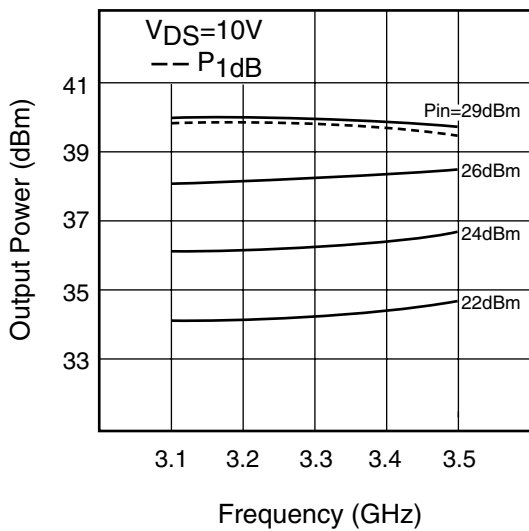
POWER DERATING CURVE



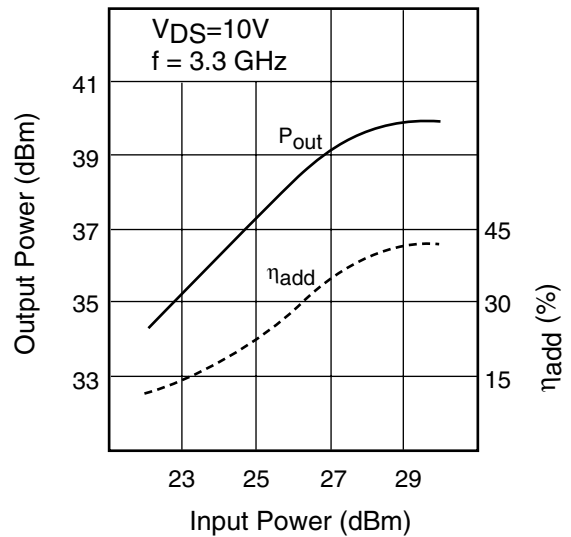
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY

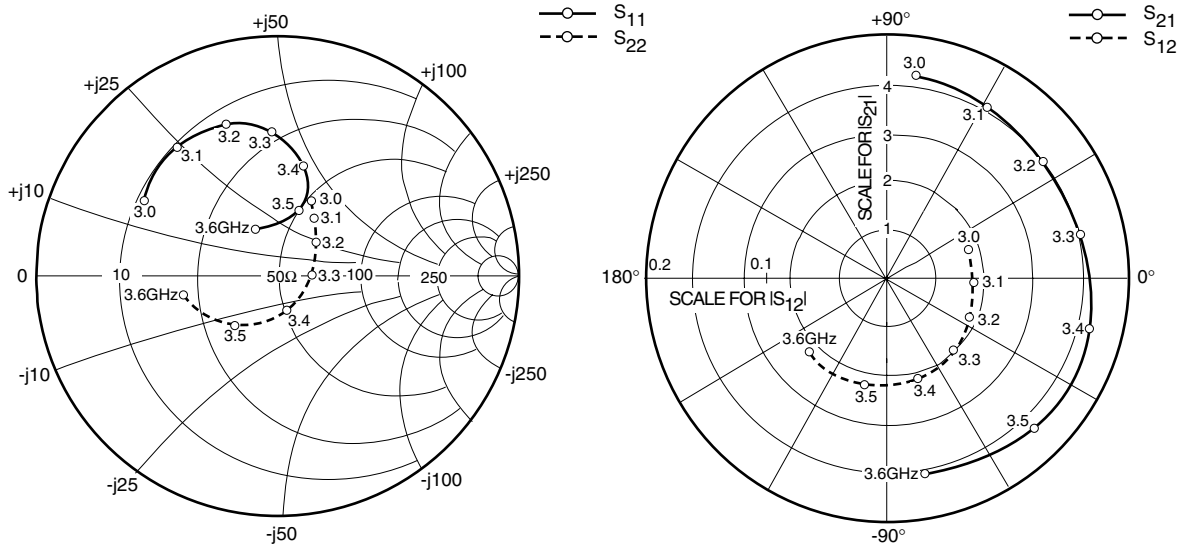


OUTPUT POWER vs. INPUT POWER



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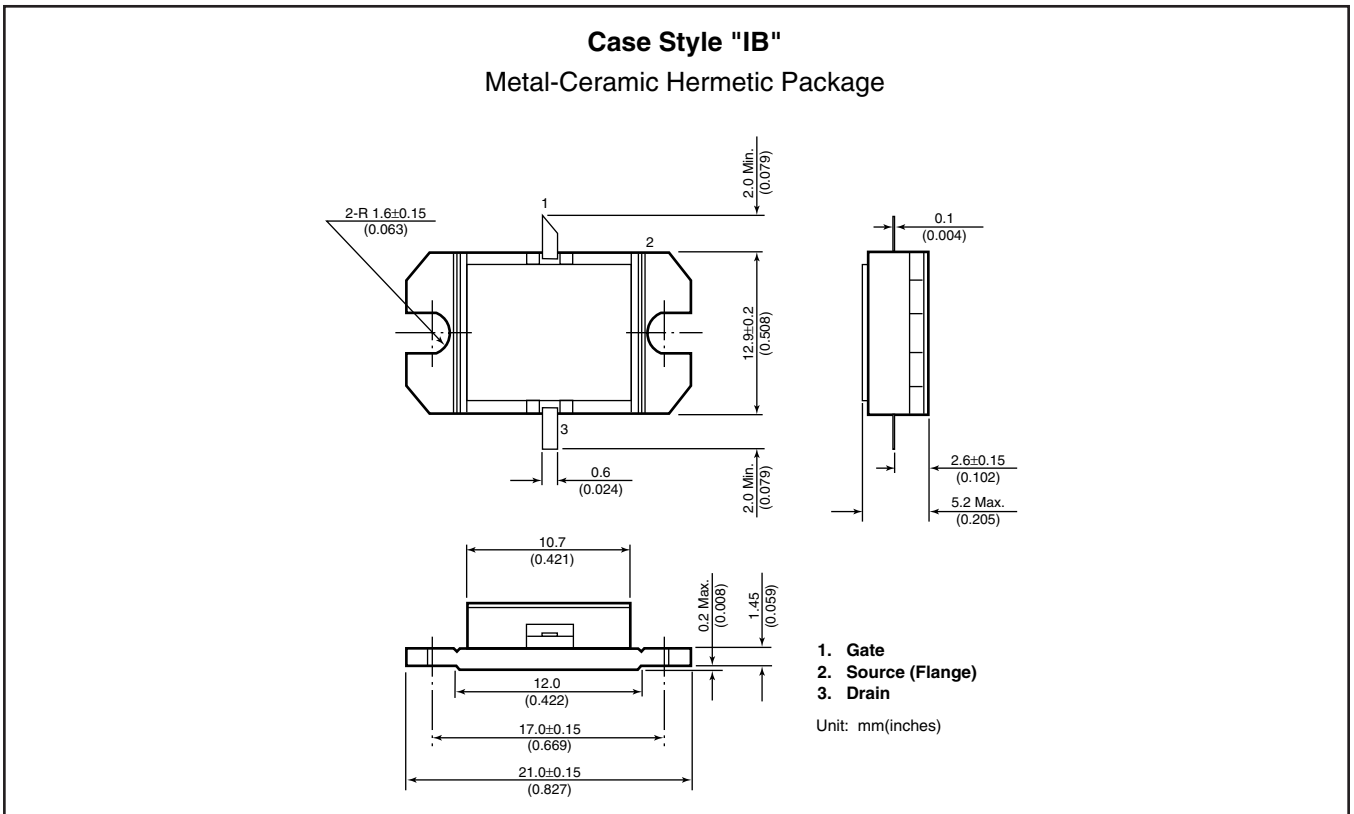
S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3000	.638	150.7	4.214	81.8	.071	20.0	.333	66.1
3100	.683	128.0	4.042	59.0	.071	-2.4	.274	58.9
3200	.670	109.1	4.005	36.5	.073	-24.8	.206	41.6
3300	.604	92.2	4.105	13.0	.078	-47.5	.135	0.1
3400	.475	77.0	4.264	-13.8	.085	-73.5	.155	-78.8
3500	.284	72.3	4.333	-44.9	.090	-102.8	.285	-130.6
3600	.217	116.0	4.095	-79.5	.088	-136.1	.402	-168.7

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For further information please contact:

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte Ltd.

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd.
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.

Sales Division
1, Kanai-cho, Sakae-ku
Yokohama, 244-0845, Japan
TEL: +81-45-853-8156
FAX: +81-45-853-8170

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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