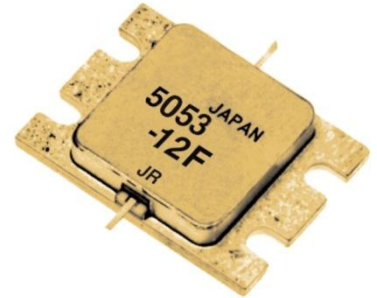


FEATURES

- High Output Power: $P_{1dB} = 41.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 38\%$ (Typ.)
- Low IM3 = -46dBc @ $P_o = 30.5\text{dBm}$
- Broad Band: 5.0 to 5.3GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$



DESCRIPTION

The FLM5053-12F 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	$T_c = 25\text{deg.C}$	57.6	W
Storage Temperature	T_{stg}		-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 32.0 and -5.6 mA respectively with gate resistance of 50ohm.

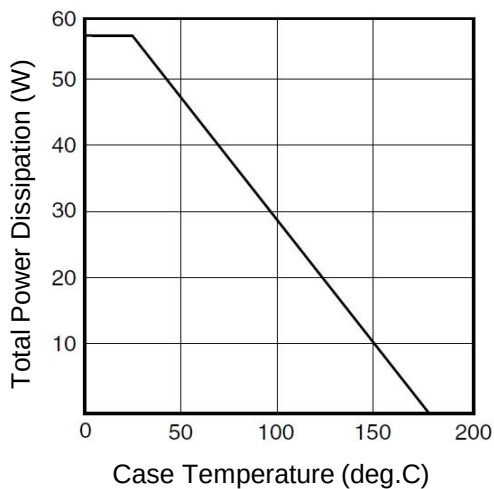
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a = 25\text{deg.C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	5800	8700	mA
Transconductance	g_m	$V_{DS}=5V, I_{DS}=3400\text{mA}$	-	2900	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=300\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-300\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V,$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}	$I_{DS}=0.55 I_{DSS}$ (Typ.),	8.5	9.5	-	dB
Drain Current	I_{dsr}	$f=5.0$ to 5.3 GHz,	-	3250	3800	mA
Power-added Efficiency	η_{add}	$Z_S=Z_L=50\text{ohm}$	-	38	-	%
Gain Flatness	ΔG		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 5.3$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 30.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	2.3	2.6	deg.C/W
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

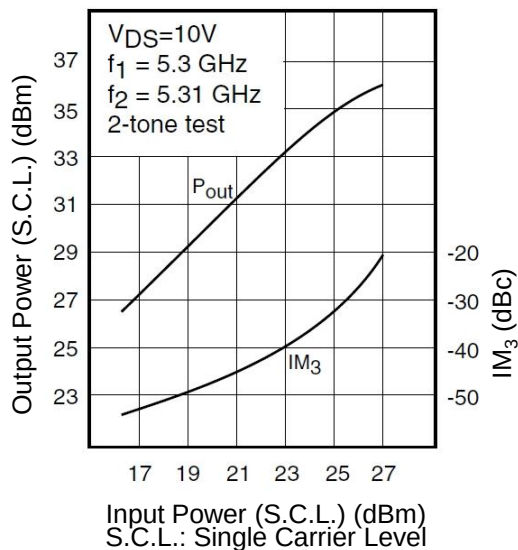
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

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

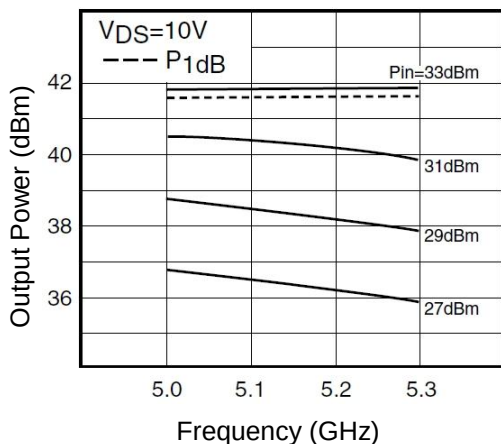
POWER DERATING CURVE



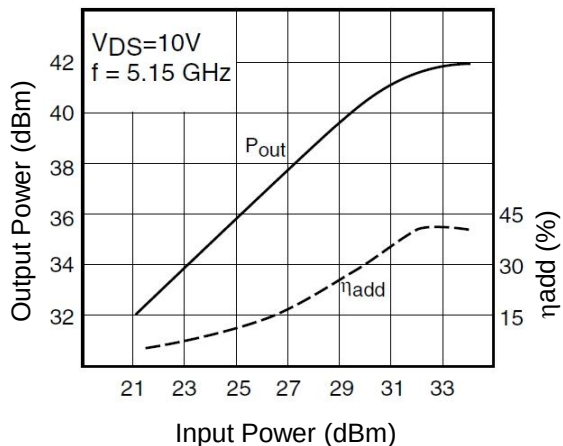
OUTPUT POWER & IM₃ vs. INPUT POWER

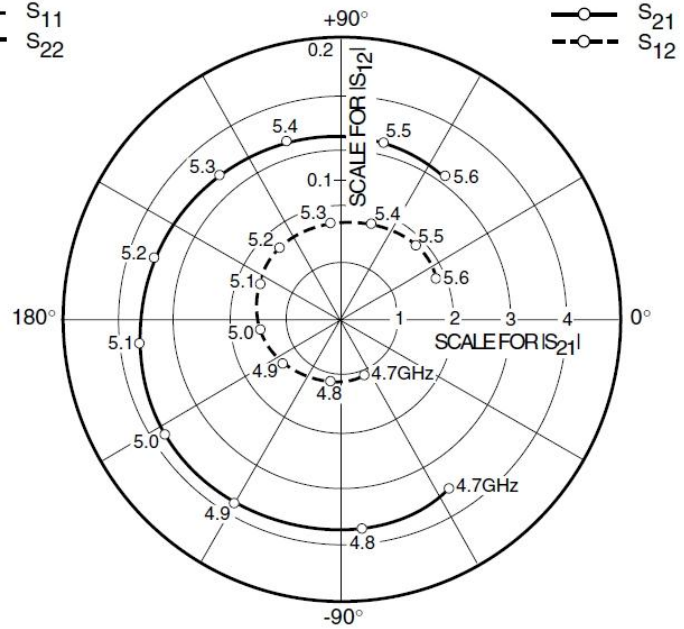
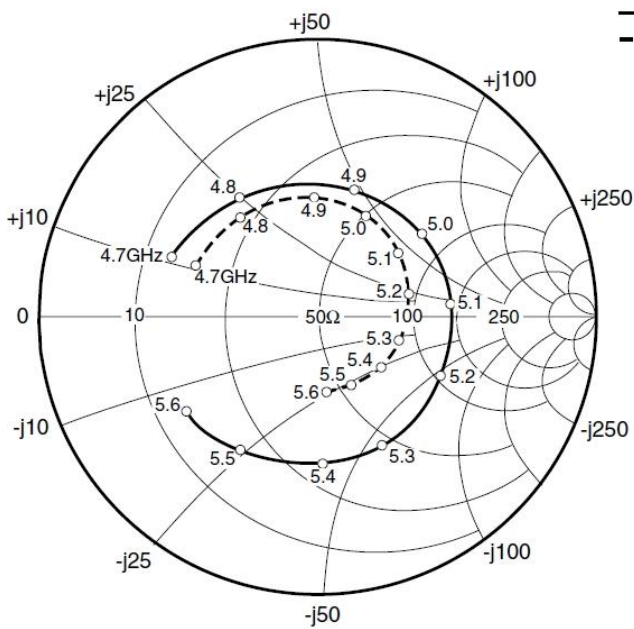


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





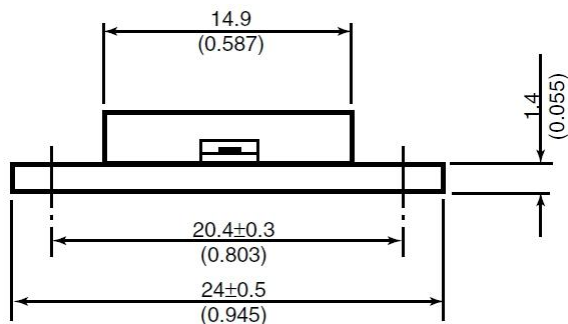
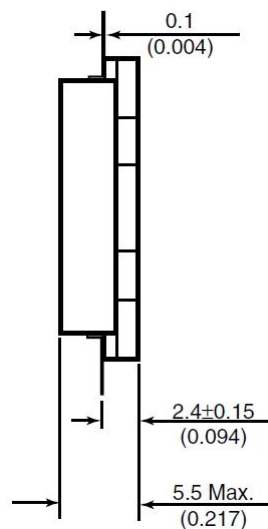
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 3400mA

FREQUENCY (MHz)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4700	0.569	159.6	3.590	-57.1	0.044	-68.7	0.479	159.2
4800	0.518	124.9	3.753	-84.3	0.049	-101.8	0.456	129.9
4900	0.472	75.3	3.826	-120.6	0.058	-142.7	0.421	92.9
5000	0.463	38.4	3.788	-147.3	0.062	-172.5	0.394	66.0
5100	0.469	4.2	3.693	-173.0	0.064	159.0	0.354	38.5
5200	0.488	-27.5	3.565	162.3	0.066	133.8	0.328	12.3
5300	0.518	-64.8	3.420	130.6	0.069	99.2	0.304	-19.2
5400	0.543	-89.8	3.334	107.5	0.070	76.0	0.291	-40.8
5500	0.578	-121.5	3.214	76.8	0.071	44.4	0.292	-67.7
5600	0.594	-143.9	3.128	54.1	0.071	22.2	0.281	-86.1

Technical drawing of a rectangular component with dimensions and tolerances:

- Overall width: 8.0 ± 0.2 (0.315)
- Overall height: 17.4 ± 0.3 (0.685)
- Top flange thickness: 2.0 Min. (0.079)
- Bottom flange thickness: 2.0 Min. (0.079)
- Central rectangular area: $4-R\ 1.3 \pm 0.15$ (0.051)
- Bottom flange width: 0.6 (0.024)
- Feature 1: A small rectangular feature on the top flange.
- Feature 2: A semi-circular feature on the right side of the central area.
- Feature 3: A small rectangular feature on the bottom flange.



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

Unit: mm(inches)



FLM5053-12F

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.