

Internally Matched High Power GaAs FETs

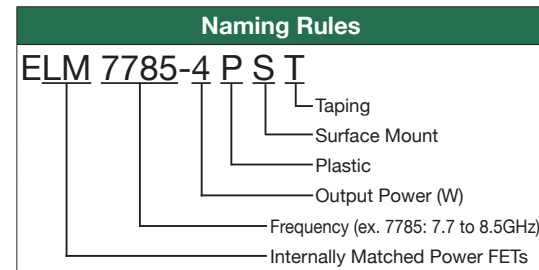
FLM/ELM Series are internally matched power GaAs FETs developed for radio link applications which require high power, high gain, and low distortion in a 50Ω system that are available from 2GHz to 15.3GHz frequency bands.

PS-series are cost effective products of plastic package which can be surface-mounted to save assembly cost. These products can be provided in both taping-reel and Tray.

Features: PS series

- Input/Output Internally Matched
- Plastic Package for SMT Applications (I2C)
- High Gain
- High Output Power
- High PAE
- Frequency Bands (5.9 to 6.4GHz, 6.4 to 7.2GHz, 7.1 to 7.9GHz, 7.7 to 8.5GHz)

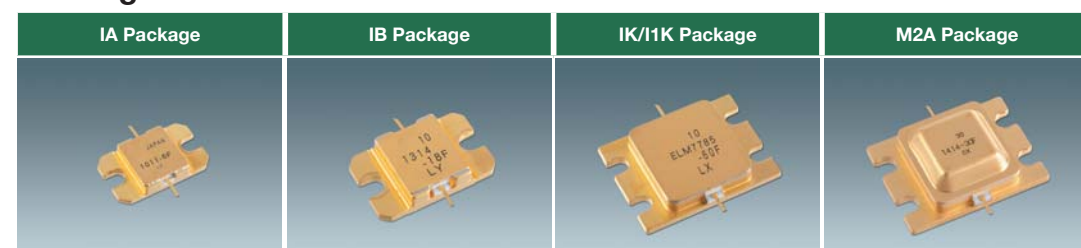
Package Photo



Features

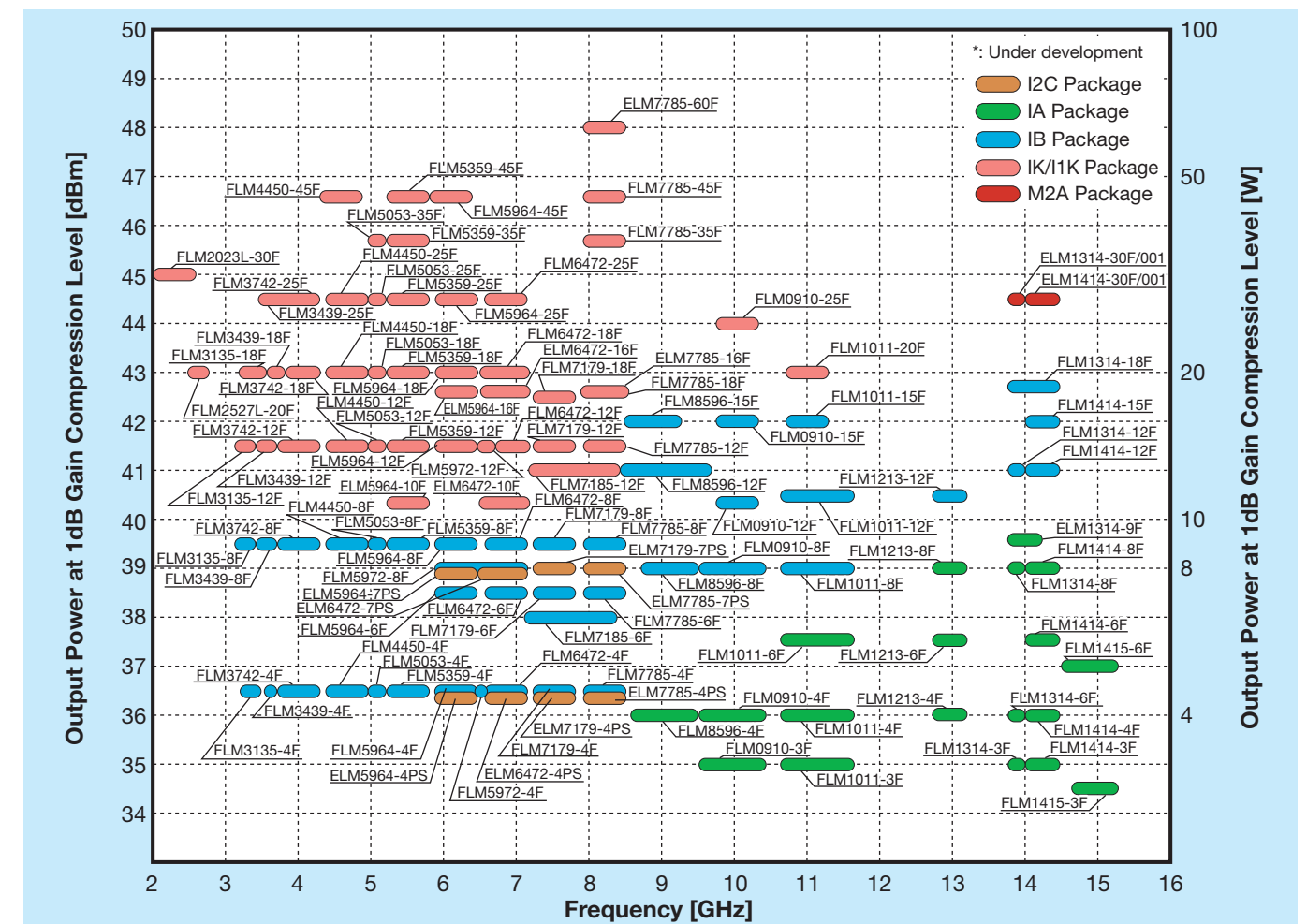
- Input/Output Internally Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetic Metal Wall Package
- High Gain
- High Output Power (Up to 60W)
- Low Distortion
- Covers Wide Band

Package Photo



Internally Matched High Power GaAs FETs

Internally Matched High Power GaAs FET Lineup



Specifications: PS series

Part Number	Frequency Band	2tone test			Frequency f (GHz)	VDS Typ. (V)	IDS(RF) Typ. (mA)	Rth Typ. (°C/W)	Outline/Package Code	Feature/Application		
		IM3 Typ. (dBc)	@Pout S.C.L. Typ. (dBm)	P1dB Typ. (dBm)							G1dB Typ. (dB)	η_{add} Typ. (%)
ELM5964-4PS	C	-43	25.5	36	11.5	37	5.9-6.4	10	1100	4.5	I2C	• Internally matched • Optimized for each frequency band
ELM5964-7PS	C	-45	28	39	11	36	5.9-6.4	10	2200	2.5	I2C	
ELM6472-4PS	C	-43	25.5	36	11	36	6.4-7.2	10	1100	4.5	I2C	
ELM6472-7PS	C	-43	28	39	10.5	35	6.4-7.2	10	2200	2.5	I2C	
ELM7179-4PS	C	-43	25.5	36	10.5	35	7.1-7.9	10	1100	4.5	I2C	
ELM7179-7PS	C	-43	28	39	10	34	7.1-7.9	10	2200	2.5	I2C	
ELM7785-4PS	C	-43	25.5	36	10	34	7.7-8.5	10	1100	4.5	I2C	
ELM7785-7PS	C	-43	28	39	9.5	33	7.7-8.5	10	2200	2.5	I2C	

Internally Matched High Power GaAs FETs

Specifications

Part Number	Frequency Band	2tone test		P1dB Typ. (dBm)	G1dB Typ. (dB)	η_{add} Typ. (%)	Frequency f (GHz)	VDS Typ. (V)	IDS(RF) Typ. (mA)	Rth Typ. (°C/W)	Outline/Package Code	Feature/Application
		IM3 Typ. (dBc)	@Pout S.C.L. Typ. (dBm)									
FLM2023L-30F	L	-45	34.5	45	13	43	2,025-2,285	10	7000	1.2	IK	
FLM2527L-20F	L	-	-	43	11	38	2.5-2.7	10	4800	1.6	IK	
FLM3135-4F	S	-45	25.5	36.5	12	38	3.1-3.5	10	1100	5	IB	
FLM3135-8F	S	-45	28.5	39.5	11	37	3.1-3.5	10	2200	3	IB	
FLM3135-12F	S	-45	30.5	41.5	11.5	40	3.1-3.5	10	3250	2.3	IK	
FLM3135-18F	S	-45	32.0	43	10.5	37	3.1-3.5	10	4800	1.6	IK	
FLM3439-4F	S	-46	25.5	36.5	12	38	3.4-3.9	10	1100	5	IB	
FLM3439-8F	S	-46	28.5	39.5	11	37	3.4-3.9	10	2200	3	IB	
FLM3439-12F	S	-46	30.5	41.5	11.5	40	3.4-3.9	10	3250	2.3	IK	
FLM3439-18F	S	-46	32.0	43	10.5	37	3.4-3.9	10	4800	1.6	IK	
FLM3439-25F	S	-46	33.5	44.5	10.5	41	3.4-3.9	10	6200	1.4	IK	
FLM3742-4F	C	-46	25.5	36.5	12	38	3.7-4.2	10	1100	5	IB	
FLM3742-8F	C	-46	28.5	39.5	11	37	3.7-4.2	10	2200	3	IB	
FLM3742-12F	C	-46	30.5	41.5	11.5	40	3.7-4.2	10	3250	2.3	IK	
FLM3742-18F	C	-46	32.0	43	10.5	37	3.7-4.2	10	4800	1.6	IK	
FLM3742-25F	C	-46	33.5	44.5	10.5	41	3.7-4.2	10	6200	1.4	IK	
FLM4450-4F	C	-46	25.5	36.5	11	37	4.4-5.0	10	1100	5	IB	
FLM4450-8F	C	-46	28.5	39.5	10	36	4.4-5.0	10	2200	3	IB	
FLM4450-12F	C	-46	30.5	41.5	10.5	39	4.4-5.0	10	3250	2.3	IK	
FLM4450-18F	C	-46	32.0	43	9.5	36	4.4-5.0	10	4800	1.6	IK	
FLM4450-25F	C	-46	33.5	44.5	9.5	40	4.4-5.0	10	6200	1.4	IK	
FLM4450-45F	C	-	-	46.5	10	41	4.4-5.0	12	8000	1.1	IK	
FLM5053-4F	C	-46	25.5	36.5	10.5	37	5.0-5.3	10	1100	5	IB	
FLM5053-8F	C	-46	28.5	39.5	9.5	36	5.0-5.3	10	2200	3	IB	
FLM5053-12F	C	-46	30.5	41.5	9.5	38	5.0-5.3	10	3250	2.3	IK	
FLM5053-18F	C	-46	32.0	43	8.5	35	5.0-5.3	10	4800	1.6	IK	
FLM5053-25F	C	-46	33.5	44.5	8.5	39	5.0-5.3	10	6200	1.4	IK	
FLM5053-35F	C	-45	34.5	45.5	8	35	5.0-5.3	10	8000	1.1	IK	
FLM5359-4F	C	-46	25.5	36.5	10.5	37	5.3-5.9	10	1100	5	IB	
FLM5359-8F	C	-46	28.5	39.5	9.5	36	5.3-5.9	10	2200	3	IB	
FLM5359-12F	C	-46	30.5	41.5	9.5	38	5.3-5.9	10	3250	2.3	IK	
FLM5359-18F	C	-46	32.0	43	8.5	35	5.3-5.9	10	4800	1.6	IK	
FLM5359-25F	C	-46	33.5	44.5	8.5	39	5.3-5.9	10	6200	1.4	IK	
FLM5359-35F	C	-	-	45.5	9	35	5.3-5.9	10	8500	1.1	IK	
FLM5359-45F	C	-	-	46.5	8.5	36	5.3-5.9	12	8500	0.8	IK	
FLM5964-4F	C	-46	25.5	36.5	10	37	5.9-6.4	10	1100	5	IB	
FLM5964-6F	C	-46	27.5	38.5	10	37	5.9-6.4	10	1625	4	IB	
FLM5964-8F	C	-46	28.5	39.5	10	37	5.9-6.4	10	2200	3	IB	
ELM5964-10F	C	-46	29	40.5	10	39	5.9-6.4	10	2600	3	IK	
FLM5964-12F	C	-46	30.5	41.5	10	37	5.9-6.4	10	3250	2.3	IK	
ELM5964-16F	C	-45	31.5	42.5	10	40	5.9-6.4	10	4000	2.7	IK	
FLM5964-18F	C	-46	32.0	43	10	37	5.9-6.4	10	4875	1.6	IK	
FLM5964-25F	C	-46	33.5	44.5	10	37	5.9-6.4	10	6500	1.4	IK	
FLM5964-35F	C	-40	35.0	45.5	9	36	5.9-6.4	10	8500	1.1	IK	
FLM5964-45F	C	-40	35.5	47	8.5	39	5.9-6.4	10	11000	1.1	IK	
FLM5964-4F/001	C	-45	25.5	36.5	9.5	36	5.85-6.75	10	1100	5	IB	
FLM5964-8F/001	C	-45	28.5	39.5	9	35	5.85-6.75	10	2200	3	IB	
FLM5964-12F/001	C	-45	30.5	41.5	9	37	5.85-6.75	10	3250	2.3	IK	
FLM5964-18F/001	C	-45	31.5	42.5	9	35	5.85-6.75	10	4400	1.6	IK	
FLM5972-4F	C	-45	25.5	36.5	9.5	36	5.9-7.2	10	1100	5	IB	
FLM5972-8F	C	-45	28.0	39.0	8.5	31	5.9-7.2	10	2200	3	IB	
FLM5972-12F	C	-45	30.5	41.5	9.5	37	5.9-7.2	10	3250	2.3	IK	
FLM6472-4F	C	-46	25.5	36.5	9.5	36	6.4-7.2	10	1100	5	IB	
FLM6472-6F	C	-46	27.5	38.5	9.5	37	6.4-7.2	10	1625	4	IB	
FLM6472-8F	C	-46	28.5	39.5	9.5	36	6.4-7.2	10	2200	3	IB	
ELM6472-10F	C	-46	29	40.5	9.5	36	6.4-7.2	10	2600	3	IK	
FLM6472-12F	C	-46	30.5	41.5	9.5	37	6.4-7.2	10	3250	2.3	IK	
ELM6472-16F	C	-45	31.5	42.5	9.5	40	6.4-7.2	10	4000	2.7	IK	
FLM6472-18F	C	-46	32.0	43	9.5	37	6.4-7.2	10	4875	1.6	IK	
FLM6472-25F	C	-46	33.5	44.5	9.5	38	6.4-7.2	10	6500	1.4	IK	

Note: Tc (op) = +25°C IM3: 3rd Order Intermodulation Distortion

- 50Ω internally matched
- No external matching
- Optimized for each frequency band

Internally Matched High Power GaAs FETs

Specifications

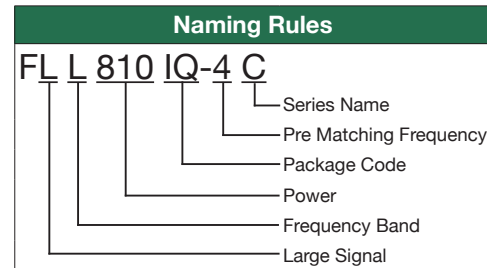
Part Number	Frequency Band	2tone test		P1dB Typ. (dBm)	G1dB Typ. (dB)	η_{add} Typ. (%)	Frequency f (GHz)	VDS Typ. (V)	IDS(RF) Typ. (mA)	Rth Typ. (°C/W)	Outline/Package Code	Feature/Application
		IM3 Typ. (dBc)	@Pout S.C.L. Typ. (dBm)									
FLM7179-4F	C	-46	25.5	36.5	9	35	7.1-7.9	10	1100	5	IB	
FLM7179-6F	C	-46	27.5	38.5	9	34	7.1-7.9	10	1625	4	IB	
FLM7179-8F	C	-46	28.5	39.5	9	35	7.1-7.9	10	2200	3	IB	
ELM7179-10F	C	-46	29	40.5	9	38	7.1-7.9	10	2600	3	IK	
FLM7179-12F	C	-46	30.5	41.5	9	38	7.1-7.9	10	3250	2.3	IK	
FLM7179-18F	C	-46	32.0	42.5	8	30	7.1-7.9	10	4875	1.6	IK	
FLM7185-6F	C	-45	27.0	38.0	8	30	7.1-8.5	10	1625	4	IB	
FLM7185-12F	C	-45	30.0	41.0	8	30	7.1-8.5	10	3250	2.3	IK	
FLM7785-4F	C	-46	25.5	36.5	8.5	35	7.7-8.5	10	1100	5	IB	
FLM7785-6F	C	-46	27.5	38.5	8.5	31	7.7-8.5	10	1750	4	IB	
FLM7785-8F	C	-46	28.5	39.5	8.5	34	7.7-8.5	10	2200	3	IB	
ELM7785-10F	C	-46	29	40.5	8.5	37	7.7-8.5	10	2600	3	IK	
FLM7785-12F	C	-46	30.5	41.5	8.5	34	7.7-8.5	10	3500	2.3	IK	
ELM7785-16F	C	-43	31.5	42.5	8	37	7.7-8.5	10	4000	2.7	IK	
FLM7785-18F	C	-45	31.5	42.5	7	29	7.7-8.5	10	4700	1.6	IK	
ELM7785-35F	C	-	-	45.5	8.5	35	7.7-8.5	10	8500	1.1	IK	
FLM7785-45F	C	-	-	46.5	7	32.5	7.7-8.5	10	11000	1.1	IK	
ELM7785-60F	C	-	-	48.0	7	37	7.7-8.5	10	13200	0.8	IK	
FLM8596-4F	X	-45	25.5	36.0	7.5	29	8.5-9.6	10	1100	5	IA	
FLM8596-8F	X	-45	28.5	39.0	7.5	29	8.5-9.6	10	2200	3	IB	
FLM8596-12F	X	-45	29.5	40.5	7.5	25	8.5-9.6	10	3600	2.3	IB	
FLM8596-15F	X	-	-	42	7.5	32	8.5-9.6	10	4000	2.3	IB	
FLM0910-3F	X	-46	24.0	35	7.5	29	9.5-10.5	10	825	5	IA	
FLM0910-4F	X	-46	25.5	36	7.5	29	9.5-10.5	10	1100	5	IA	
FLM0910-8F	X	-46	28.5	39	7.5	29	9.5-10.5	10	2200	3	IB	
FLM0910-12F	X	-	-	40.5	7	25	9.5-10.5	10	3500	2.3	IB	
FLM0910-15F	X	-	-	42	7.5	32	9.5-10.5	10	4000	2.3	IB	
FLM0910-25F	X	-	-	44	7	30	9.5-10.5	10	6500	1.4	IK	
FLM1011-3F	X	-46	24.0	35	7.5	29	10.7-11.7	10	825	5	IA	
FLM1011-4F	X	-46	25.5	36	7	29	10.7-11.7	10	1100	5	IA	
FLM1011-6F	X	-49	25.0	37.5	7.5	28	10.7-11.7	10	1650	4	IA	
FLM1011-8F	X	-46	28.5	39	7	29	10.7-11.7	10	2200	3	IB	
FLM1011-12F	X	-45	29.5	40.5	6	25	10.7-11.7	10	3500	2.3	IB	
FLM1011-15F	X	-45	30.0	42	7	31	10.7-11.7	10	4000	2.3	IB	
FLM1011-20F	X	-45	31.0	43	7	27	10.7-11.7	10	6000	1.4	IK	
FLM1213-4F	Ku	-46	25.5	36	6.5	28	12.7-13.2	10	1100	5	IA	
FLM1213-6F	Ku	-49	25.0	37.5	7	28	12.7-13.2	10	1650	4	IA	
FLM1213-8F	Ku	-46	28.5	39	6.5	28	12.7-13.2	10	2200	3	IA	
FLM1213-12F	Ku	-45	28.0	40.5	5.5	24	12.7-13.2	10	3300	2.3	IB	
FLM1314-3F	Ku	-45	24.0	35	5.5	27	13.75-14.5	10	825	5	IA	
FLM1314-6F	Ku	-45	26.5	37.5	5.5	22	13.75-14.5	10	1650	4	IA	
FLM1314-8F	Ku	-45	28.0	39	6	27	13.75-14.5	10	2400	2.8	IA	
ELM1314-9F	Ku	-30	33.0	39.5	6.0	30	13.75-14.5	10	2400	3.5	IA	
FLM1314-12F	Ku	-45	29.0	41.0	6	23	13.75-14.5	10	4200	1.8	IB	
FLM1314-18F	Ku	-30	36.0	42.5	6	27	13.75-14.5	10	5000	1.8	IB	
ELM1314-30F/001	Ku	-										

High Power GaAs FETs

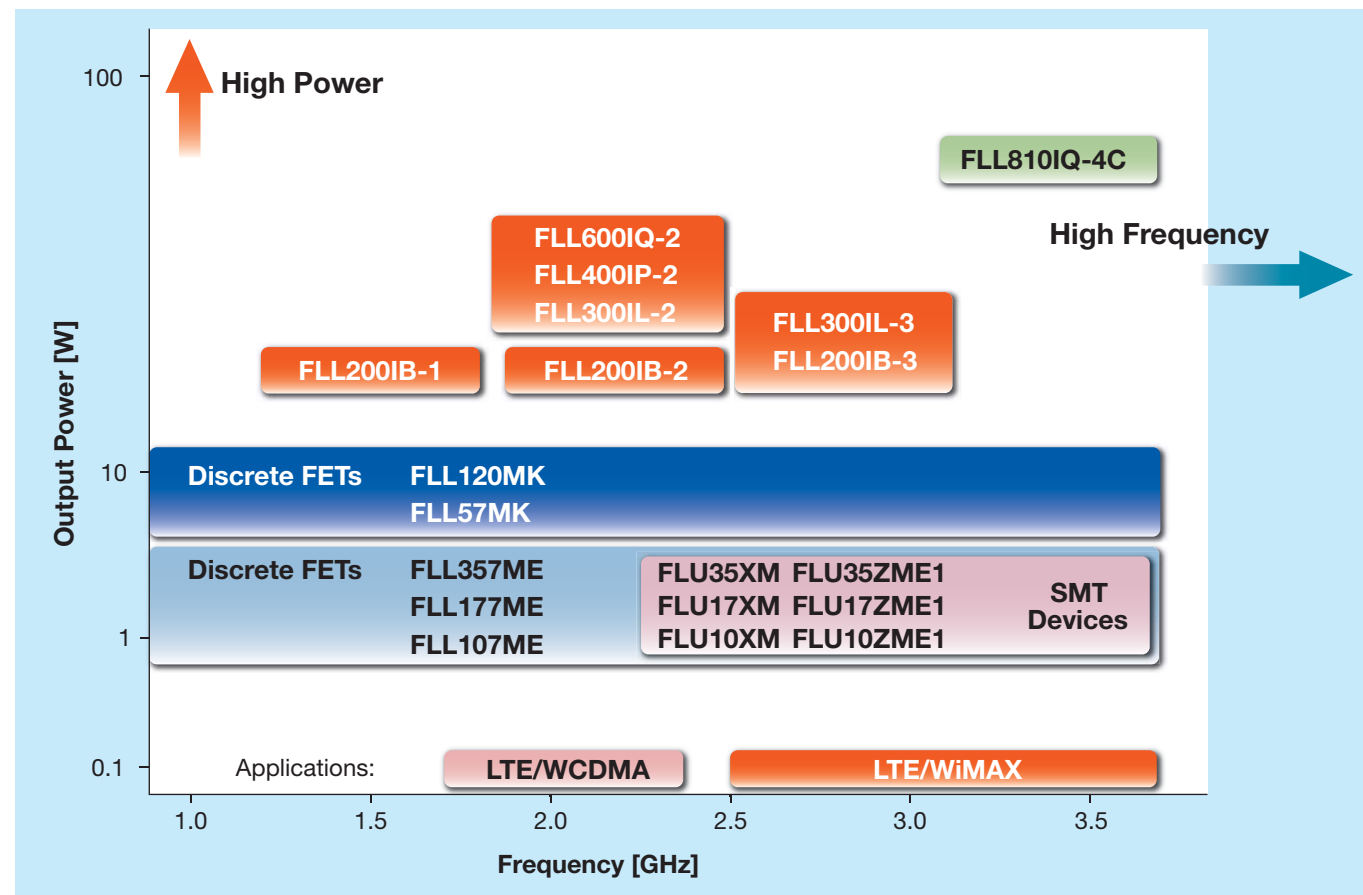
Sumitomo Electric has developed 40W - 80W high power Push-Pull GaAs FETs for Mobile Base Station applications such as Cellular, WCDMA, LTE and WiMAX. Additionally, plastic packaged devices are under development for cost driven systems.

Features

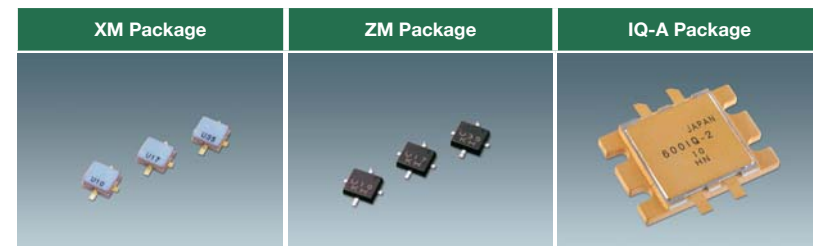
- High Output Power: Up to 80W
- High Gain
- Operating Voltage: 10V, 12V
- Proven Reliability



◆L-Band, S-Band High Output GaAs FET Lineup



Package Photo



High Power GaAs FETs

Specifications

Part Number	Frequency Band	Series	P1dB Typ. (dBm)	G1dB Typ. (dB)	η_{add} Typ. (%)	Frequency (GHz)	VDS Typ. (V)	IDS(DC) Typ. (mA)	Rth Typ. (°C/W)	Outline/Package Code	Feature
FLU10XM	L	FLU	29.5	14.5	47	2	10	180	25	XM	SMT-Device
FLU10ZME1 ^{*4}	L	FLU	29.5	13.0	46	2	10	180	15	ZM	
FLU17XM	L	FLU	32.5	12.5	46	2	10	360	15	XM	
FLU17ZME1 ^{*4}	L	FLU	32.5	12.5	45	2	10	360	12	ZM	
FLU35XM	L	FLU	35.5	12.5	46	2	10	720	7.5	XM	Single-end
FLU35ZME1 ^{*4}	L	FLU	35.5	11.5	45	2	10	720	5	ZM	
FLL107ME	L	FLL	29.5	13.5	47	2.3	10	180	25	ME	
FLL177ME	L	FLL	32.5	12.5	46	2.3	10	360	15	ME	
FLL357ME	L	FLL	35.5	11.5	46	2.3	10	720	7.5	ME	Push-Pull
FLL57MK	L	FLL	36	11.5	37	2.3	10	990	6.2	MK	
FLL120MK	L	FLL	40	10.0	40	2.3	10	2200	3.3	MK	
FLL200IB-1 ^{*1}	L	FLL	42.5	13.0	35	1.5	10	4800	1.6	IB	
FLL200IB-2 ^{*1}	L	FLL	42.5	11.0	34	2.3	10	4800	1.6	IB	Single-end
FLL200IB-3 ^{*1}	L	FLL	42.5	11.0	34	2.6	10	4800	1.6	IB	
FLL300IL-1	L	FLL	44.5	13.0	45	0.9	10	6000	1.0	IL	
FLL300IL-2	L	FLL	44.5	12.0	44	1.8	10	6000	1.0	IL	
FLL300IL-3	L	FLL	44.5	10.0	42	2.6	10	6000	1.0	IL	Push-Pull
FLL400IP-2	L	FLL	45.5	10.0	44	1.96	12	2000	1.0	IP	
FLL600IQ-2	L	FLL	48.0	10.5	43	1.96	12	4000	0.8	IQ-A	
FLL810IQ-4C	S	FLL	49.0 ^{*2}	9.5 ^{*3}	45	3.6	12	5000	0.8	IQ-B	

Part Number	Frequency Band	Series	P1dB Typ. (dBm)	G1dB Typ. (dB)	η_{add} Typ. (%)	Frequency (GHz)	VDS Typ. (V)	IDS(DC) Typ. (mA)	Rth Typ. (°C/W)	Outline/Package Code	Feature
FLC097WF	C	FLC	28.8	8.5	35	6	10	180	25	WF	General-use
FLC167WF	C	FLC	31.8	7.5	35	6	10	360	15	WF	
FLC257MH-6 ^{*1}	C	FLC	34	9	36	6.4	10	600	8	MH	
FLC057WG	C	FLC	27	9	38	8	10	120	27	WG	
FLC107WG	C	FLC	30	8	36	8	10	240	16	WG	
FLC257MH-8 ^{*1}	C	FLC	34	8	35	8.5	10	600	8	MH	
FLX107MH-12 ^{*1}	X	FLX	30	7.5	33	12.5	10	240	15	MH	
FLX207MH-12 ^{*1}	X	FLX	32.5	7	28	12.5	10	480	10	MH	
FLK017WF	Ku	FLK	20.5	7.5	26	14.5	10	36	65	WF	
FLK027WG	Ku	FLK	24	7	32	14.5	10	60	40	WG	
FLK057WG	Ku	FLK	27	7	32	14.5	10	120	20	WG	
FLK107MH-14 ^{*1}	Ku	FLK	30	6.5	31	14.5	10	240	15	MH	
FLK207MH-14 ^{*1}	Ku	FLK	32.5	6	27	14.5	10	480	10	MH	

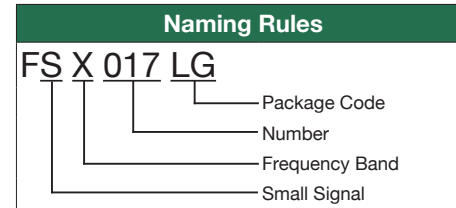
*1: Partially Input/Output Matched *2: Pout *3: GL *4: Plastic Mold Package Note: Tc(op)=+25°C

Small Signal GaAs FETs

FSU/FSX series are GaAs FETs that are designed for medium output power amplifier and oscillator applications with a wide dynamic range up to X-band frequencies. Tape and reel is available for both LP/LG packages.

Features

- Medium Power: P1dB = 15 to 24.5dBm
- High Gain: G1dB = 8 to 19dB
- High Reliability
- Hermetic Metal/Ceramic Packages (WF/LG)

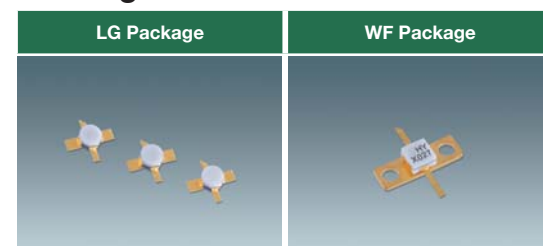


Specifications

Part Number	P1dB Typ. (dBm)	G1dB Typ. (dB)	Measurement Conditions 1			Noise figure NF Typ. (dB)	Associated gain Gas Typ. (dB)	Measurement Conditions 2			Outline/Package Code	Feature/Application
			Frequency f (GHz)	Drain Voltage VDS (V)	Drain Current IDS (mA)			Frequency f (GHz)	Drain Voltage VDS (V)	Drain Current IDS (mA)		
FSU01LG	20	19	2	6	40	0.5	18.5	2	3	10	LG *	Medium Power
FSU02LG	23	17	2	6	80	1.5	17.5	2	3	20	LG *	
FSX027WF	24.5	10	8	8	77	2.5	9.5	8	3	30	WF	Medium Power
FSX017WF	21.5	11	8	8	39	2.5	10.5	8	3	10	WF	
FSX017LG	16	8	12	4	30	-	-	-	-	-	LG *	

*: FSU01LG, FSU02LG, FSX017LG are all in LG-pkg with short lead.
Note: Tc (op) = +25°C

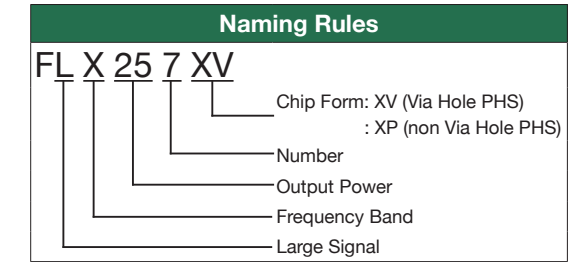
Package Photo



GaAs FETs (Chip)

Features

- High Gain, High Frequency Chip



Specifications

Part Number	1dB Compression Power P1dB (dBm)	1dB Compression Gain G1dB (dB)	Power Added Efficiency η_{add} (%)	Frequency f (GHz)	Drain Voltage VDS (V)	Drain Current IDS (mA)	Application
FSX017X	21.5	11	42	8.0	8	38	X-band Amplifier
FSX027X	24.5	10	41	8.0	8	77	
FLX257XV	33.5	7.5	31	10.0	10	600	C-band Amplifier
FLC087XP	28.5	7	31.5	8.0	10	180	
FLC157XP	31.5	6	29.5	8.0	10	360	
FLC307XP	34.8	9.5	37	4.0	10	720	Ku-band Amplifier
FLK017XP	20.5	8	26	14.5	10	36	
FLK027XP	24	7	32	14.5	10	60	
FLK027XV	24	7	32	14.5	10	60	
FLK057XV	27	7	32	14.5	10	120	
FLK107XV	30	6.5	31	14.5	10	240	
FLK207XV	32.5	6	27	14.5	10	480	

X: Conventional Chip, XP: PHS (Plated Heat Sink), XV: Via Hole PHS