

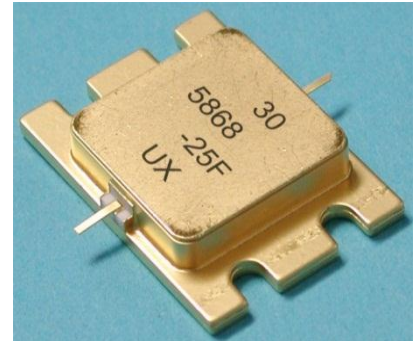
FEATURES

- High Output Power: P1dB=44.0dBm(Typ.)
- High Gain: G1dB=9.0dB(Typ.)
- High PAE: η_{add} =34%(Typ.)
- Broad Band: 5.85 to 6.75GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package

DESCRIPTION

The SLM5868-25F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50ohm system.

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



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Drain-Source Voltage (Tc=25deg.C)	V _{DS}	15	V
Gate-Source Voltage (Tc=25deg.C)	V _{GS}	-5	V
Total Power Dissipation	P _T	93.7	W
Storage Temperature	T _{stg}	-65 to +175	deg.C
Channel Temperature	T _{ch}	+175	deg.C

RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Recommend	Unit
DC Input Voltage	V _{DS}		≤10	V
Forward Gate Current	I _{GF}	R _G =25 ohm	≤+64.0	mA
Reverse Gate Current	I _{GR}	R _G =25 ohm	≥-11.2	mA
Storage Temperature	T _{stg}	-65 to +150		deg.C
Channel Temperature	T _{ch}		≤+155	deg.C

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25deg.C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	10	15.0	A
Trans conductance	g _m	V _{DS} =5V, I _{DS} =6.5A	-	10	-	S
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =500mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V _{GS0}	I _{GS} =-500uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P1dB	V _{DS} =10V	43.0	44.0	-	dBm
Power Gain at 1dB G.C.P.	G1dB	f=5.85 to 6.75 GHz	8.0	9.0	-	dB
Drain Current	I _{DSr}	I _{DS} DC=0.65I _{DSS} (typ.)	-	6.5	7.6	A
Power-added Efficiency	η_{add}	Z _s =Z _L =50 ohm	-	34	-	%
Gain Flatness	ΔG		-	-	1.6	dB
3rd Order Intermodulation Distortion	IM3	f=6.75 GHz Δf=10MHz, 2-tone Test Pout=33.0dBm (S.C.L.)	-42	-45	-	dBc
Thermal Resistance	R _{th}	Channel to Case	-	1.4	1.6	deg.C/W
Channel Temperature Rise	ΔT _{ch}	(10V X I _{DSr} - Pout + Pin) X R _{th}	-	-	100	deg.C

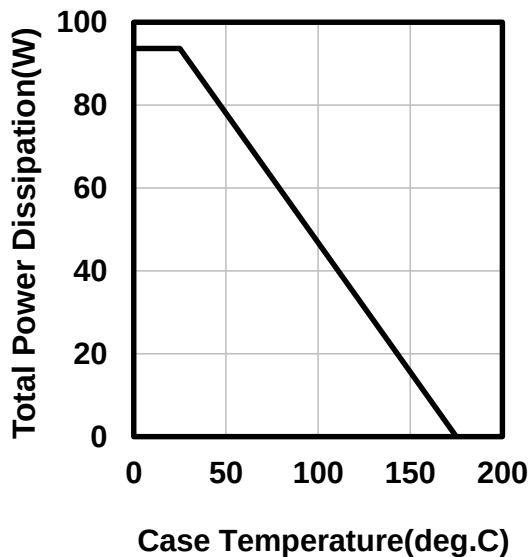
CASE STYLE : IK

S.C.L. : Single Carrier Level

G.C.P.: Gain Compression Point

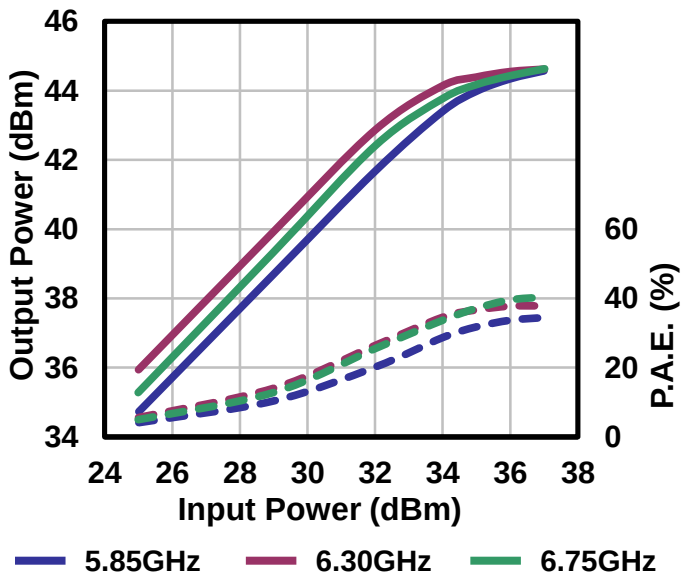
ESD	Class 3A	4000V to 8000V
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)		
RoHS COMPLIANCE	Yes	

Power Derating Curve



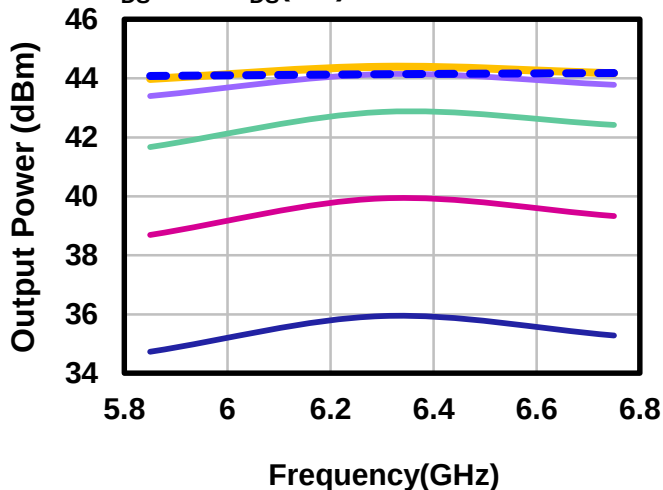
Output Power & P.A.E. v.s. Input Power

$V_{DS}=10V, I_{DS}(DC)=6.5A$



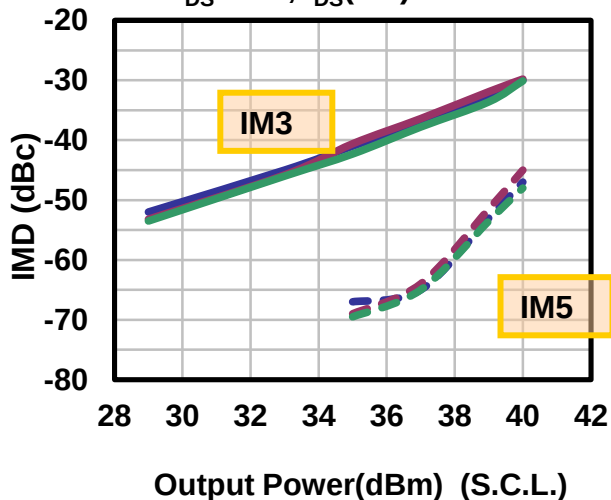
Output Power v.s. Frequency

$V_{DS}=10V, I_{DS}(DC)=6.5A$



IMD v.s. Output Power

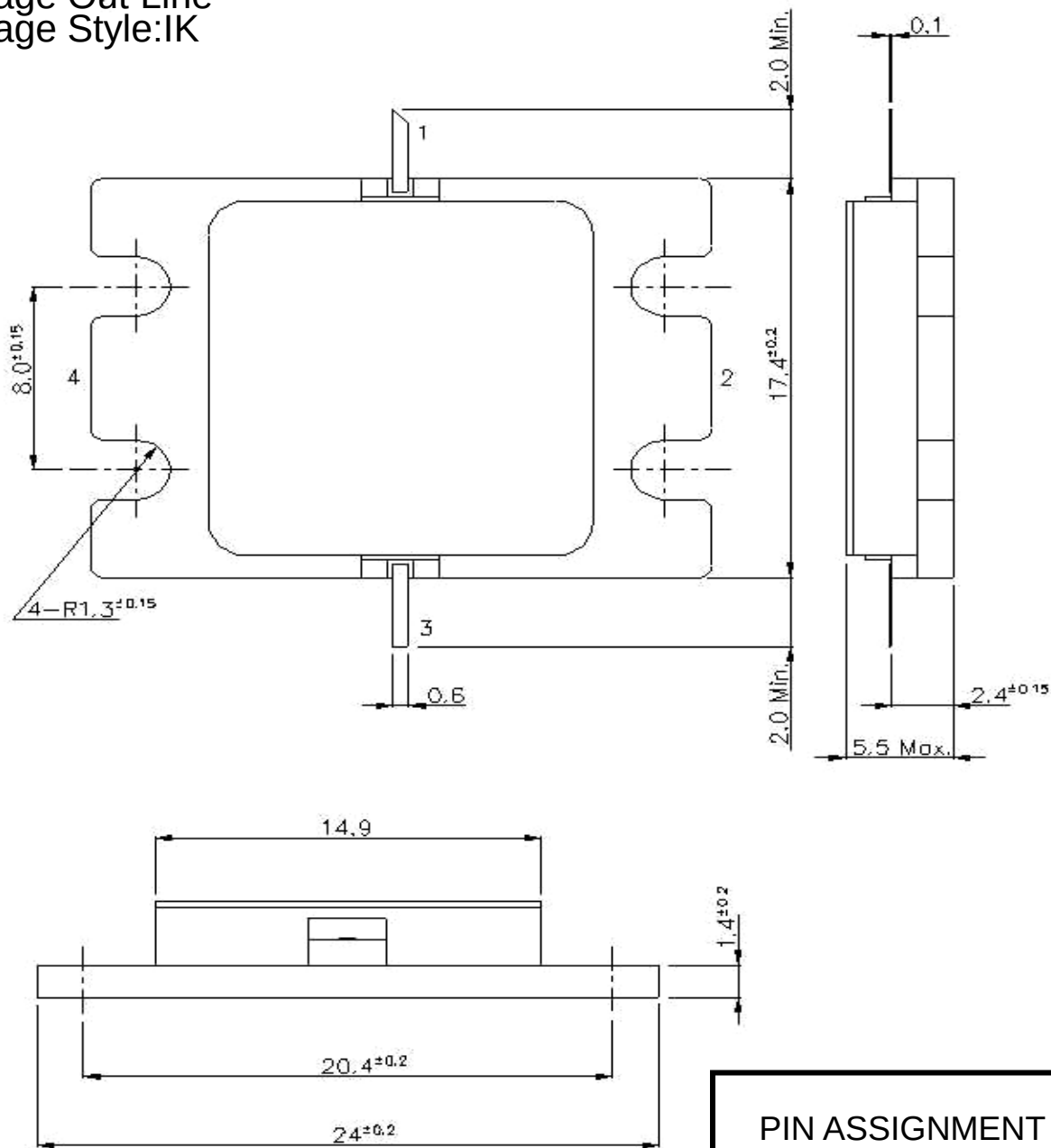
$V_{DS}=10V, I_{DS}(DC)=6.5A$



— 25[dBm] — 29[dBm] — 32[dBm] — 34[dBm] — 35[dBm] — P1dB

— 7.7GHz — 8.1GHz — 8.5GHz
 $\Delta f=10MHz$

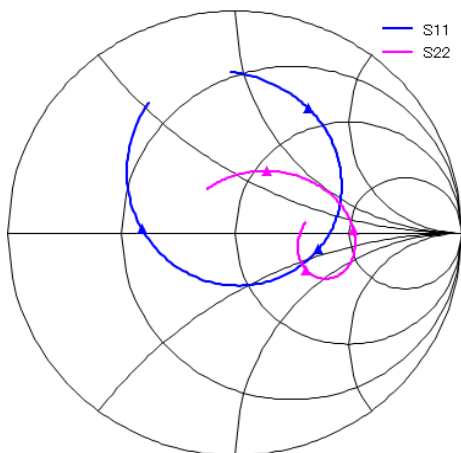
Package Out Line
Package Style:IK



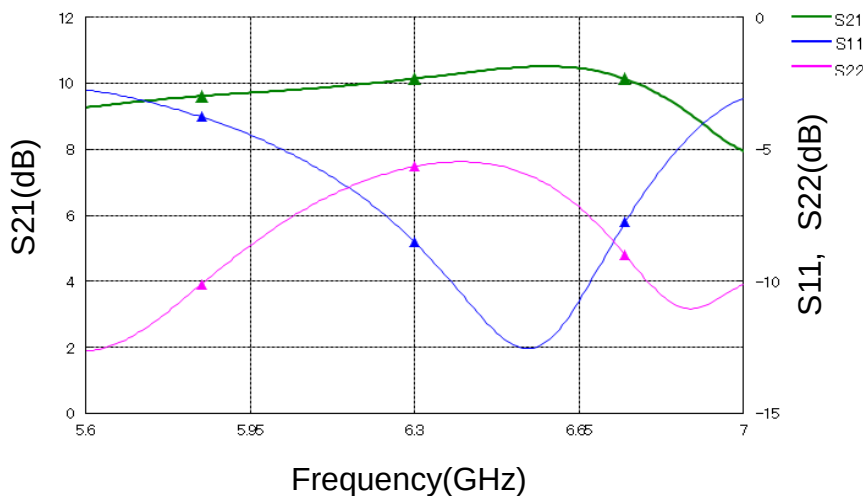
PIN ASSIGNMENT

- 1: Gate
- 2: Source (Flange)
- 3: Drain
- 4: Source (Flange)

Smith Chart



Log Mag



Freq. (GHz)	S11		S21		S12		S22	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
5.8	0.67	67	3.01	-113	0.050	-73	0.29	74
5.9	0.63	53	3.04	-130	0.051	-90	0.34	54
6.0	0.57	38	3.08	-147	0.051	-107	0.40	38
6.1	0.52	24	3.11	-163	0.052	-123	0.45	24
6.2	0.45	8.7	3.16	180	0.053	220	0.49	13
6.3	0.37	-11	3.21	162	0.054	202	0.52	1.8
6.4	0.30	-36	3.28	144	0.055	184	0.53	-8.0
6.5	0.24	-72	3.33	125	0.056	165	0.52	-17
6.6	0.25	-120	3.35	105	0.056	145	0.48	-25
6.7	0.34	-166	3.29	82	0.055	122	0.40	-29
6.8	0.48	163	3.11	60	0.052	100	0.32	-24
6.9	0.61	140	2.81	38	0.047	78	0.28	-7.0



SLM5868-25F

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.