



ELM7785-35F

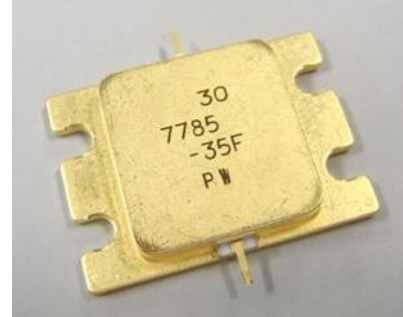
C-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=45.5dBm(Typ.)
- High Gain: G1dB=8.0dB(Typ.)
- High PAE: η_{add} =35%(Typ.)
- Broad Band: 7.7 to 8.5GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package

DESCRIPTION

The ELM7785-35F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50ohm system.



ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25deg.C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	15	V
Gate-Source Voltage	V _{GS}	-5	V
Total Power Dissipation	P _T	115	W
Storage Temperature	T _{stg}	-55 to +175	deg.C
Channel Temperature	T _{ch}	175	deg.C

RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25deg.C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V _{DS}		≤10	V
Forward Gate Current	I _{GF}	R _G =10 ohm	≤108	mA
Reverse Gate Current	I _{GR}	R _G =10 ohm	≥-23.2	mA
Storage Temperature	T _{stg}		-55 to +125	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	-	16	-	A
Trans conductance	g _m	V _{DS} =5V, I _{DS} =8.0A	-	16	-	S
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =960mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-960uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V f= 7.7 to 8.5 GHz	45.0	45.5	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		7.0	8.0	-	dB
Drain Current	I _{DSr}	I _{DS} DC=8.0A (typ.)	-	8.5	9.5	A
Power-added Efficiency	η _{add}	Z _s =Z _L =50 ohm	-	35	-	%
Gain Flatness	ΔG		-	-	1.2	dB
Thermal Resistance	R _{th}	Channel to Case	-	1.1	1.3	deg.C/W
Channel Temperature Rise	ΔT _{ch}	10V x I _{DSr} 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
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Note : Based on JEDEC JESD22-A114 (C=100pF, R=1500ohm)

RoHS COMPLIANCE	Yes
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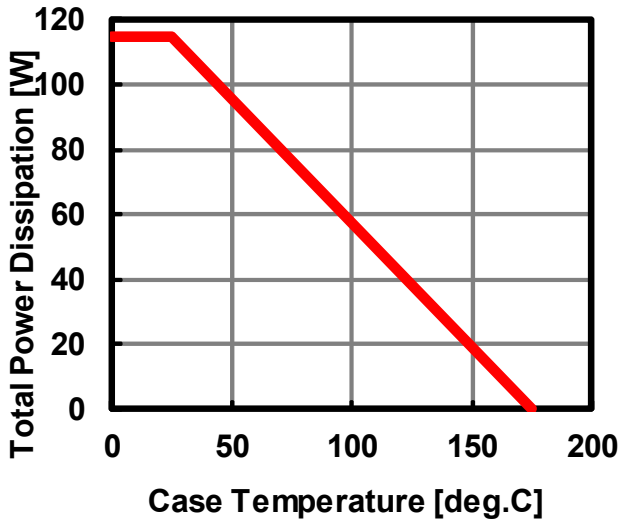




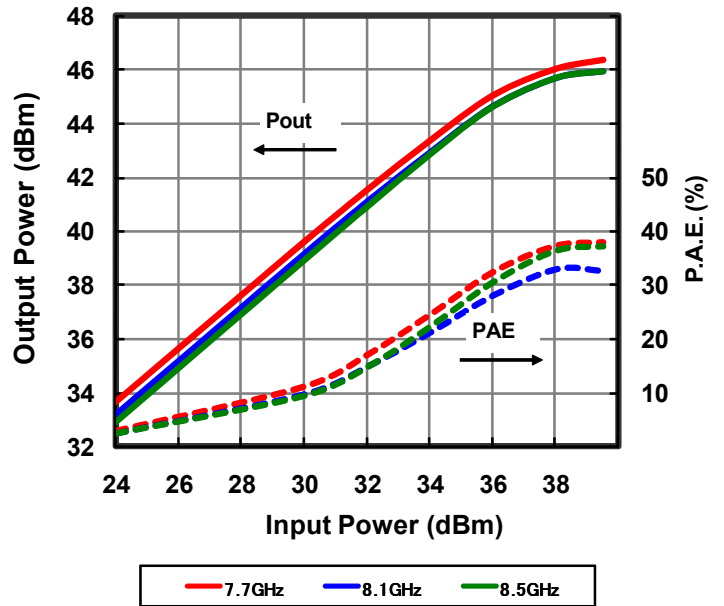
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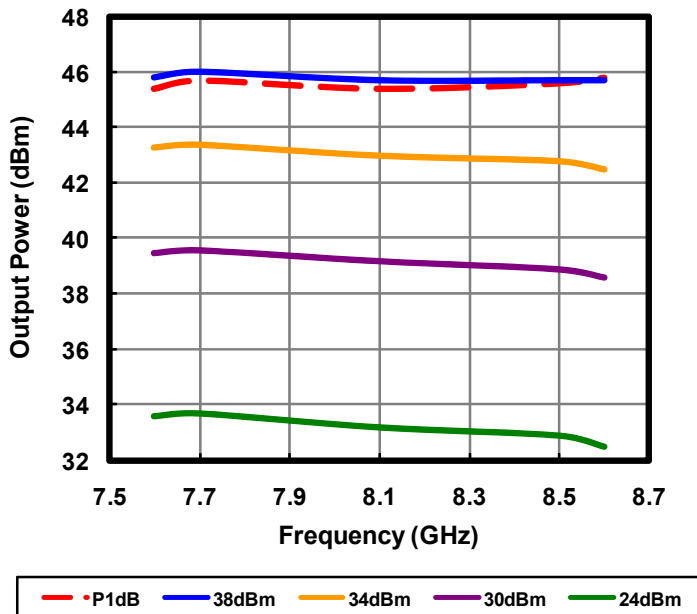
Power Derating Curve



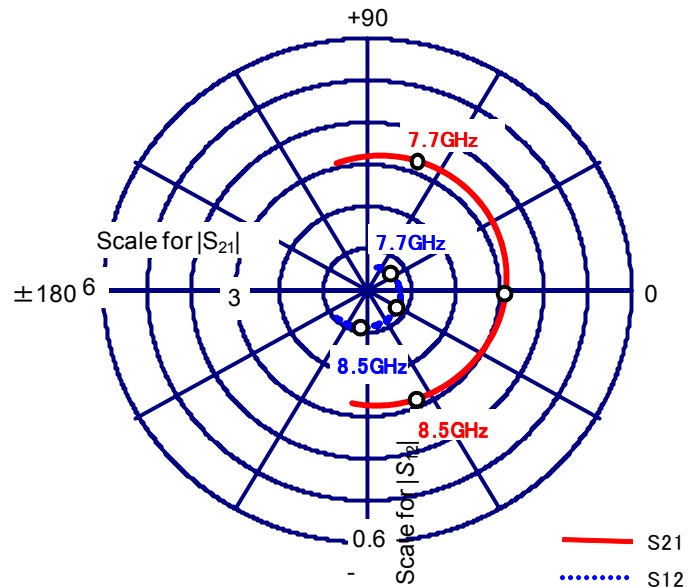
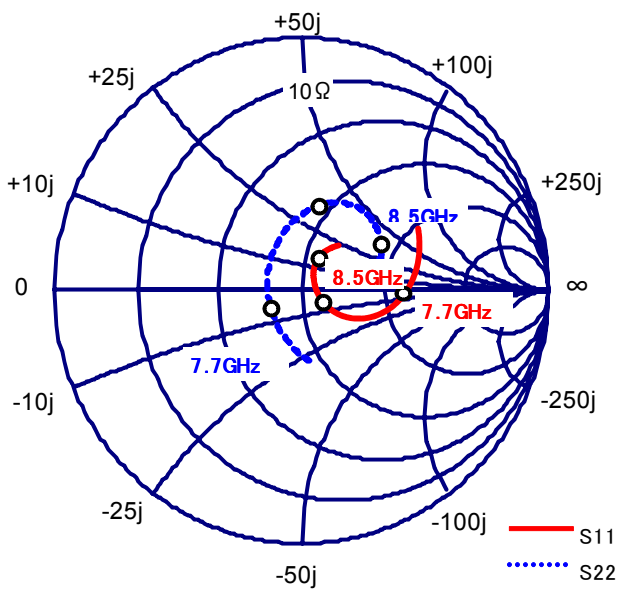
Input Power vs. Output Power & P.A.E
VDS=10V, IDS(DC)=8.0A



frequency vs. Output Power
VDS=10V, IDS(DC)=8.0A



S-PARAMETER



VDS=10.0V , IDS=8.0A

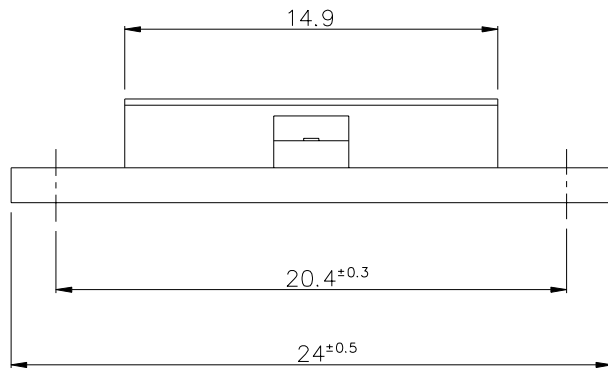
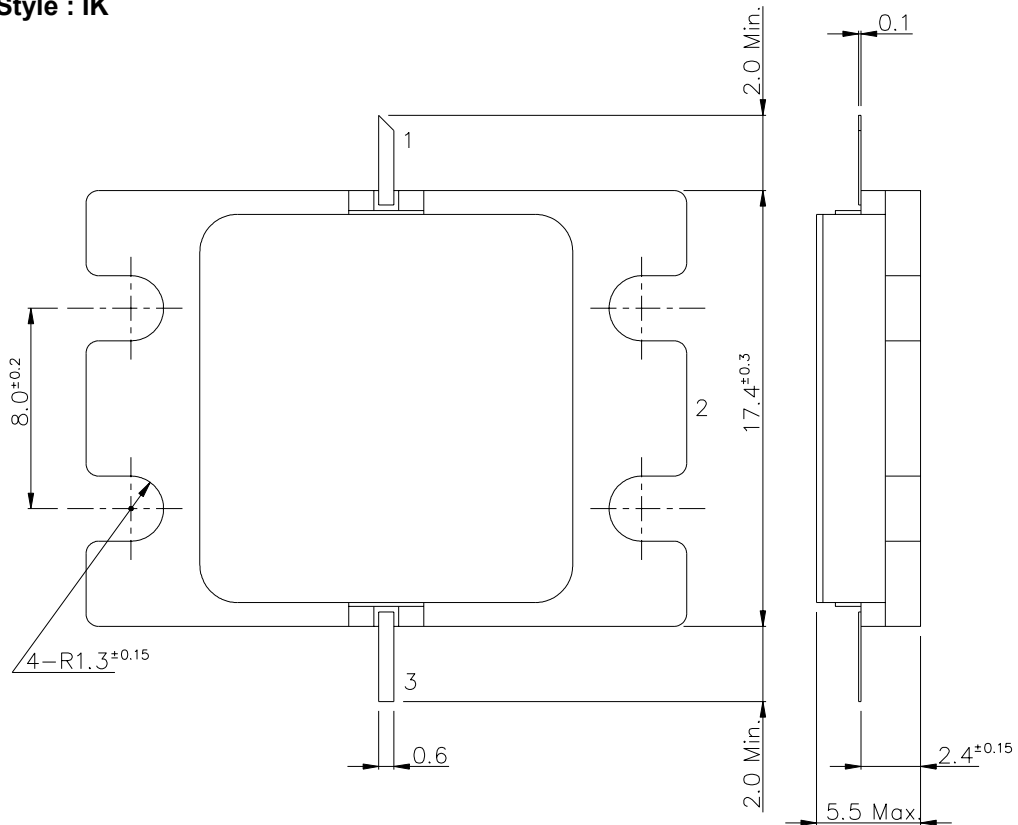
Freq [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
7.5	0.525	27.7	3.125	103.5	0.059	72.7	0.281	-84.2
7.6	0.480	14.0	3.220	88.3	0.063	55.0	0.208	-106.2
7.7	0.413	-1.5	3.292	70.0	0.066	37.3	0.144	-149.5
7.8	0.339	-14.7	3.314	52.4	0.069	20.7	0.148	157.4
7.9	0.254	-26.2	3.287	33.9	0.072	3.0	0.212	117.3
8.0	0.174	-32.8	3.223	16.8	0.075	-13.7	0.282	94.7
8.1	0.100	-29.3	3.129	-0.9	0.078	-31.4	0.343	77.7
8.2	0.056	2.9	3.031	-18.0	0.081	-49.1	0.383	63.9
8.3	0.067	46.0	2.942	-33.7	0.085	-65.7	0.399	52.5
8.4	0.106	62.0	2.869	-50.4	0.088	-83.4	0.394	41.0
8.5	0.149	62.3	2.810	-67.1	0.091	-101.1	0.370	29.5
8.6	0.190	57.6	2.759	-83.1	0.094	-117.8	0.328	17.8
8.7	0.230	50.6	2.712	-97.9	0.097	-136.5	0.278	6.0



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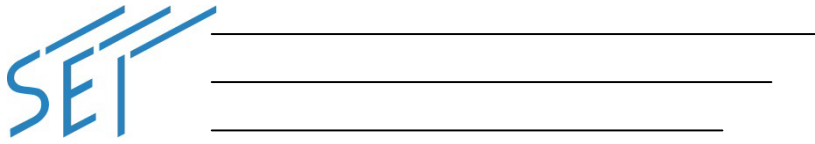
■ Package Out Line
Case Style : IK



PIN ASSIGNMENT

- 1 : GATE
- 2 : SOURCE
- 3 : DRAIN
- 4 : SOURCE

Unit : mm



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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.