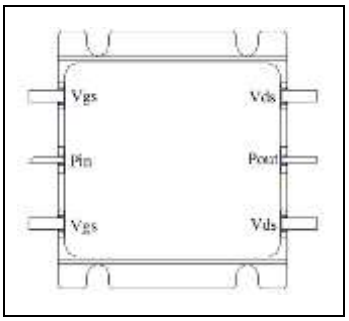
1.0-6.0GHz, 80W, GaN Fully matched PA Module



Description

The SMEH1060-80H3 is a 80-watt Psat capable，single stage integrated IMFET, designed for broad band applications, with frequencies from 1 to 6.0GHz. The module is 50 Ω input/output matched and requires minimal external components. **It is featured with industry leading higher eff** The module implements multiple GaN active dice and its matching network within highly compact 30.8*27.4mm metal RF package with excellent capability for heat dissipation.

Psat at Vds=28V, Idq=250mA, CW

Freq(MHz)	Pin(dBm)	Psat(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2nd Harmonic	3rd Harmonic
800	41.60	48.80	75.9	4.53	7.20	59.8	-15	-14.3
900	41.28	49.44	87.9	5.38	8.16	58.4	-15.5	-15.3
1000	**40.70**	**49.72**	**93.8**	**5.63**	**9.02**	**59.5**	**-15.7**	**-15.8**
1500	**40.30**	**50.02**	**100.5**	**6.34**	**9.72**	**56.6**	**-16.1**	**-16**
2000	**39.65**	**50.25**	**105.9**	**6.81**	**10.60**	**55.6**	**-16.3**	**-16.2**
2500	**40.20**	**49.52**	**89.5**	**5.79**	**9.32**	**55.2**	**-11.8**	**-27.3**
3000	**40.40**	**49.36**	**86.3**	**7.17**	**8.96**	**43.0**	**-15.3**	**-40.8**
3500	**40.94**	**50.50**	**112.2**	**7.70**	**9.56**	**52.0**	**-21.8**	**-35.6**
4000	**41.00**	**50.37**	**108.9**	**7.70**	**9.37**	**50.5**	**-**	**-**
4500	**41.00**	**50.45**	**110.9**	**8.24**	**9.45**	**48.1**	**-**	**-**
5000	**41.00**	**49.86**	**96.8**	**7.60**	**8.86**	**45.5**	**-**	**-**
5500	**40.58**	**49.52**	**89.5**	**6.77**	**8.94**	**47.2**	**-**	**-**
6000	**40.30**	**49.59**	**91.0**	**7.42**	**9.29**	**43.8**	**-**	**-**
6200	41.60	49.00	79.4	6.37	7.40	44.5	-	-

Recommended driver：XR5803HS (Discrete) or GMAH0860-30H3(IMFET), and interstage attenuator suggested

Applications

- Ultra Broadband Amplifiers within L/S/C band
- Test Instrumentation

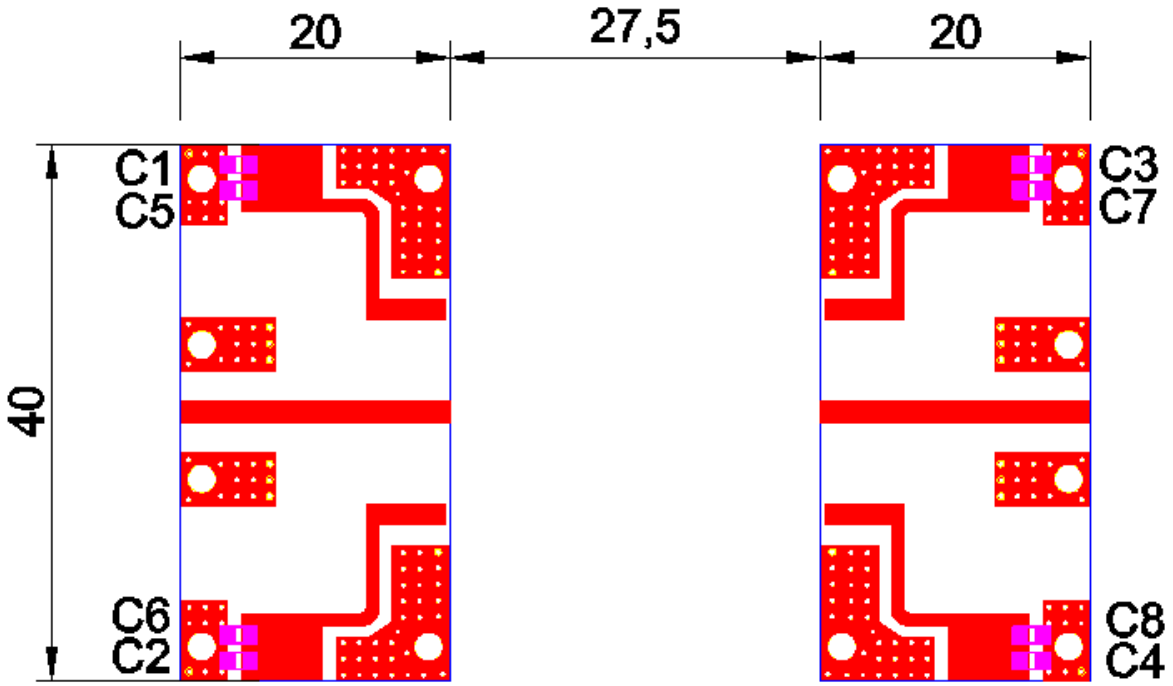
Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	84	Vdc
Gate--Source Voltage	V_{GS}	-10 to +2	Vdc
Operating Voltage	V_{DD}	+32	Vdc
Storage Temperature Range	Tstg	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case T_C= 25°C, Pout=80W, FEA	RθJC	1	°C/W

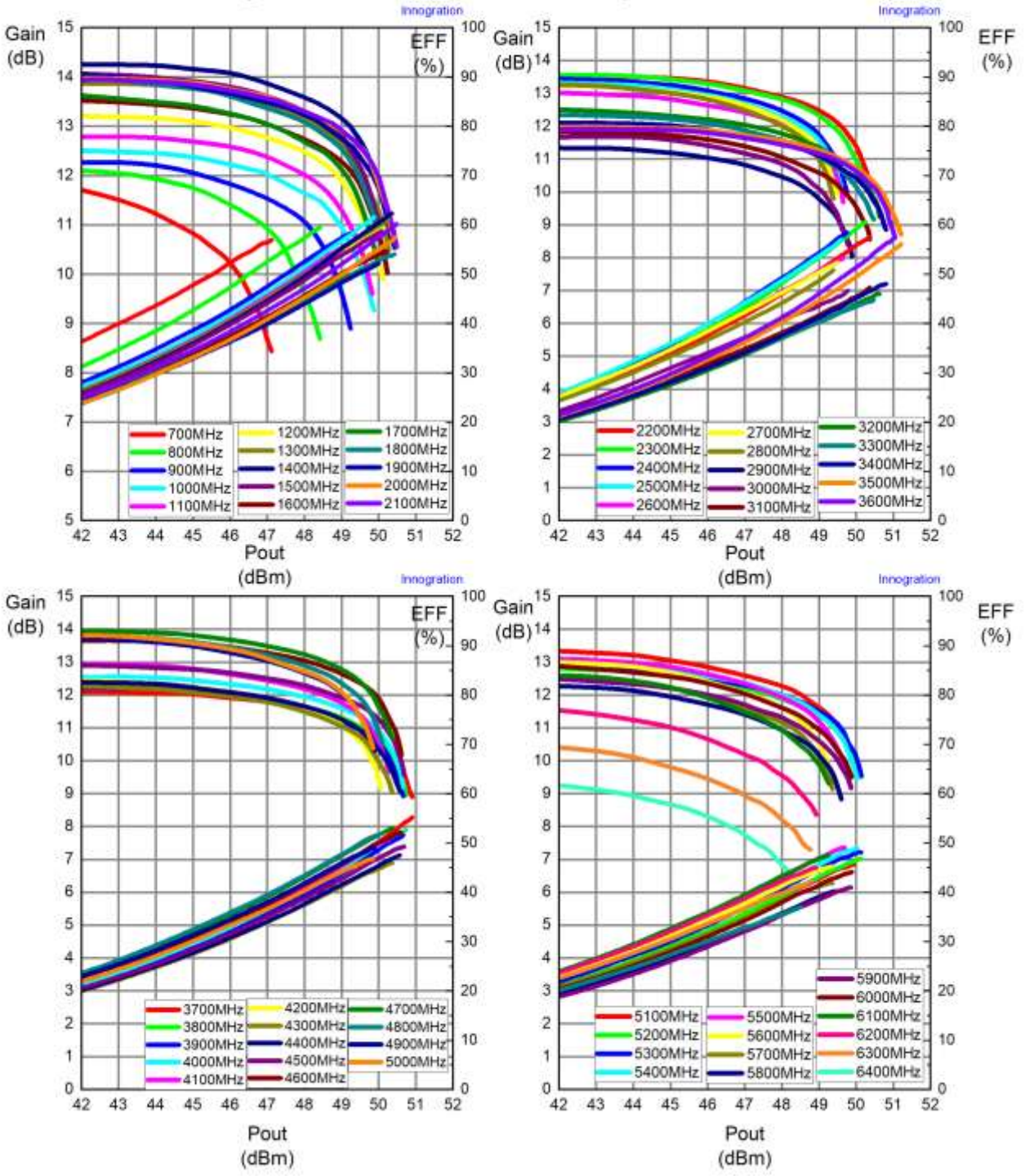
Typical application circuit



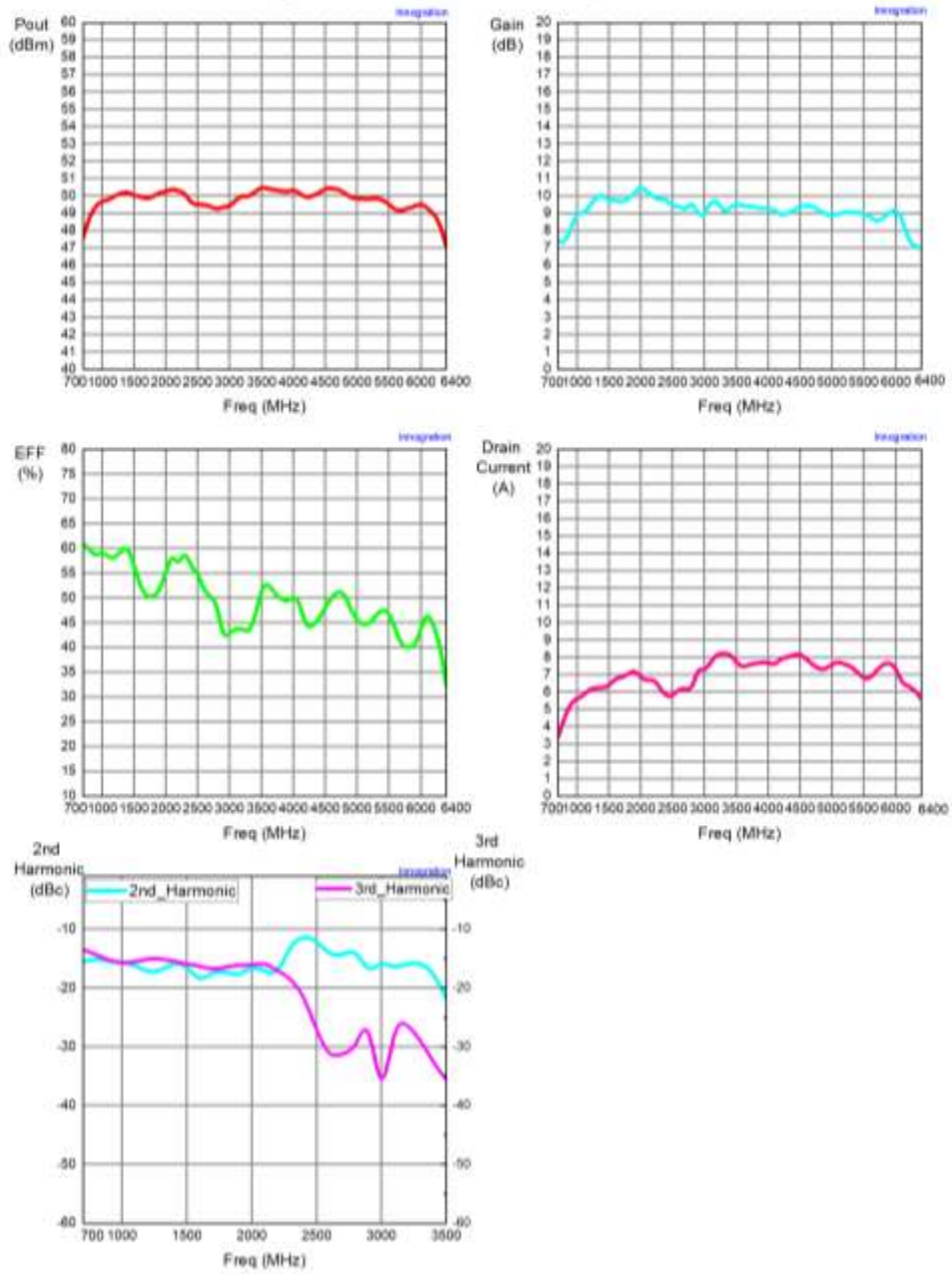
Component	Description	Suggested Manufacturer / Series Number
C1 C2 C3 C4	10 uF	TDK
C5 C6 C7 C8	100 pF	MQ301111
PCB	30Mil Rogers 4350	Rogers

TYPICAL CHARACTERISTICS

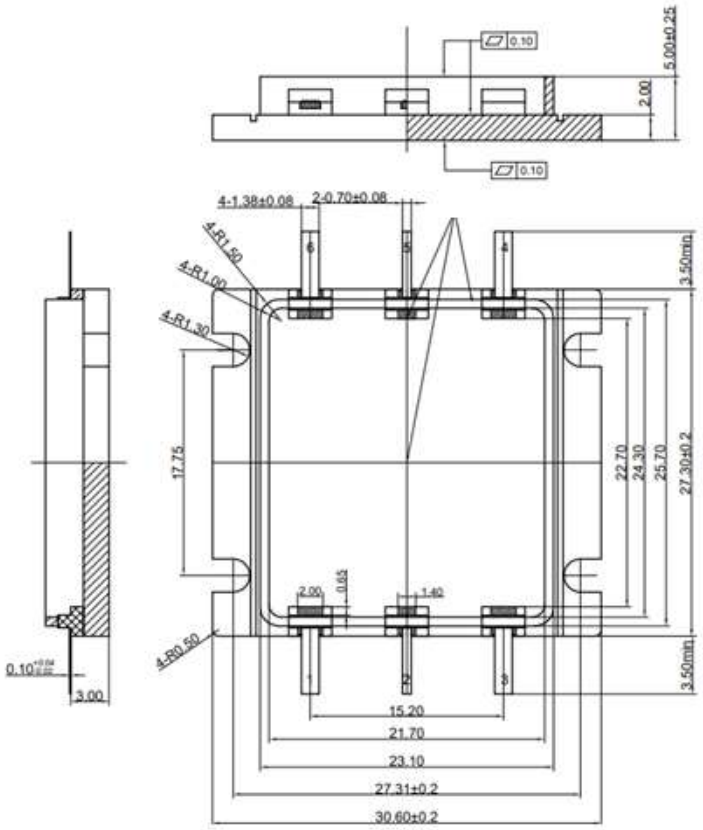
SMEH1060-80H3 Pulse 100us 10%
Vgs=-3.03V Vds=28V Idq=220mA



SMEH1060-80H3 CW Test
Vgs=-3.03V Vds=28V Idq=220mA



Package Dimensions （Unit:mm）



Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2026/10/29	Rev 1.0	Preliminary Datasheet

Application data based on JF-26-30

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