

### FEATURES

- BROAD BAND INTERNALLY MATCHED HEMT
- HIGH POWER  
Pout= 51.0dBm at Pin= 44dBm
- HIGH GAIN  
GL= 11.5dB at Pin= 20dBm
- LOW INTERMODULATION DISTORTION WITH WIDE SPACING TONE  
IM3= -25dBc(Min.) at Pout= 44dBm (Single Carrier Level)
- HERMETICALLY SEALED PACKAGE



### RF PERFORMANCE SPECIFICATIONS ( Ta= 25°C )

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	Pout	VDS= 40V IDSset= 0.8A f= 7.7 to 8.5GHz @Pin= 44dBm	dBm	50.0	51.0	—
Drain Current	IDS1		A	—	7.0	9.0
Power Added Efficiency	$\eta_{add}$		%	—	36	—
Linear Gain	GL	@Pin= 20dBm	dB	10.5	11.5	—
Gain flatness	$\Delta G$		dB	—	—	±0.8
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 44dBm (Single Carrier Level) $\Delta f$ = 5MHz (IM3) $\Delta f$ = 150MHz (IM3-2)	dBc	-25	-30	—
	IM3-2		dBc	-25	-27	—
Drain Current	IDS2		A	—	—	5.0
Channel Temperature Rise *1	$\Delta T_{ch}$		°C	—	120	140

**Recommended Gate Resistance(Rg): 10  $\Omega$**

\*1:  $\Delta T_{ch} = (VDS \times IDS2 + Pin(\text{two-tone}) - Po(\text{two-tone})) \times R_{th}(c-c)$ , calculated using parameters of IM3 test

### ELECTRICAL CHARACTERISTICS ( Ta= 25°C )

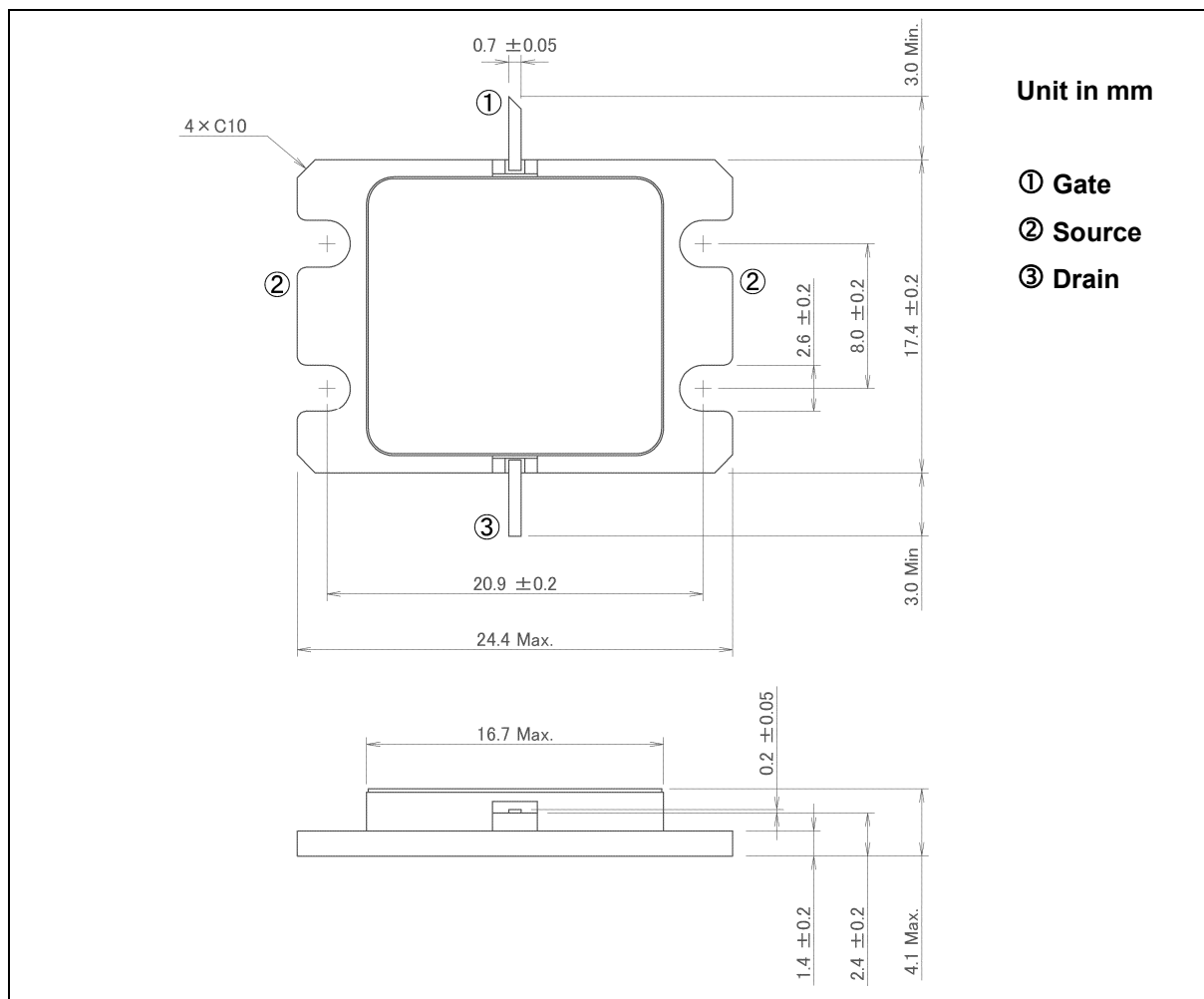
CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 5V IDS= 10.0A	S	—	8.0	—
Pinch-off Voltage	VGSoff	VDS= 5V IDS= 30mA	V	-2.0	-3.0	-5.0
Gate-Source Breakdown Voltage	VGSO	IGS= -25mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	0.8	1.0

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**ABSOLUTE MAXIMUM RATINGS ( Ta= 25°C )**

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	50
Gate-Source Voltage	VGS	V	-10
Drain Current	IDS	A	12
Total Power Dissipation (Tc= 25°C)	PT	W	200
Channel Temperature	Tch	°C	225
Storage Temperature	Tstg	°C	-65 to +175

**PACKAGE OUTLINE ( 7-AA06A )**



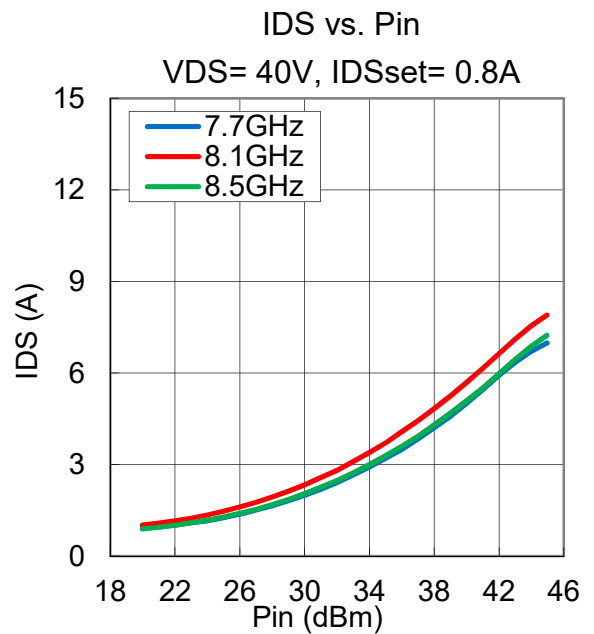
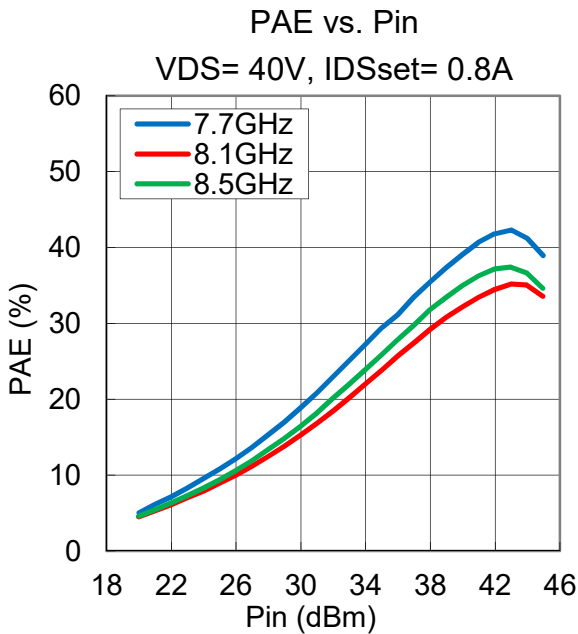
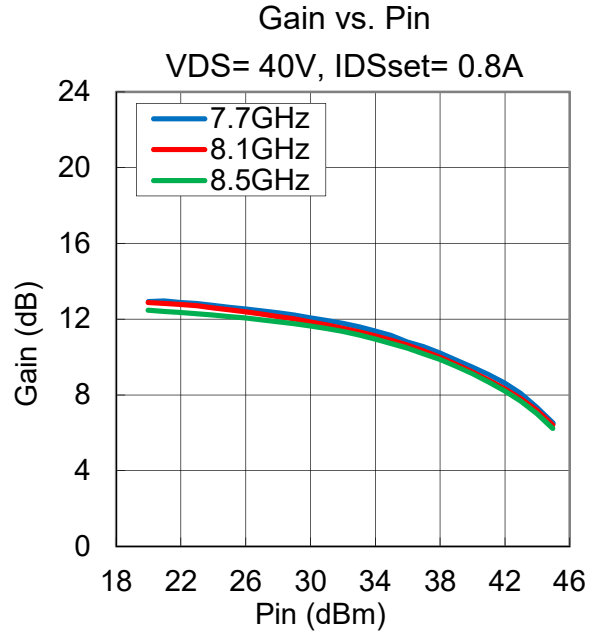
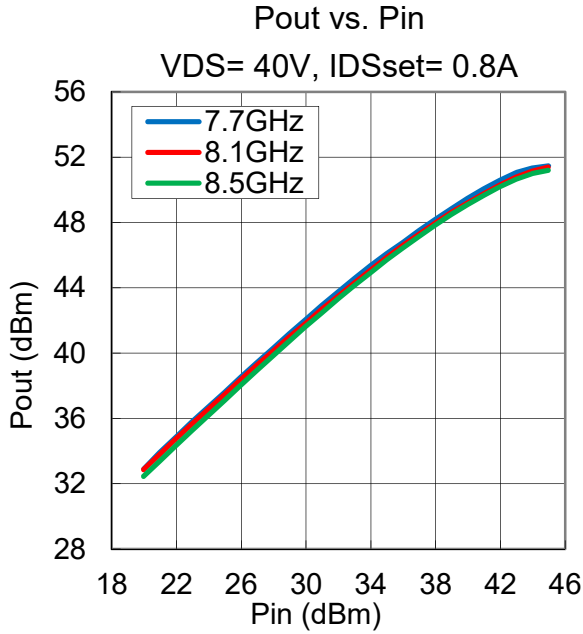
**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C

**TYPICAL RF PERFORMANCE**

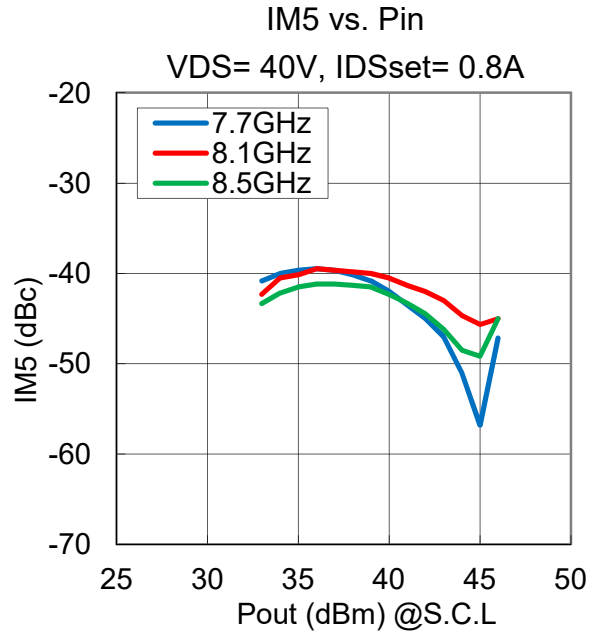
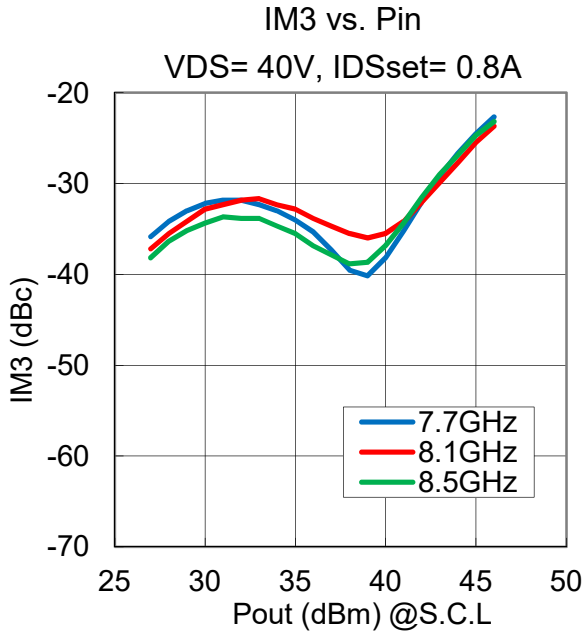
• Pout, Gain, PAE, IDS vs. Pin

VDS= 40V, IDSset= 0.8A, f= 7.7, 8.1, 8.5GHz, Ta= +25°C



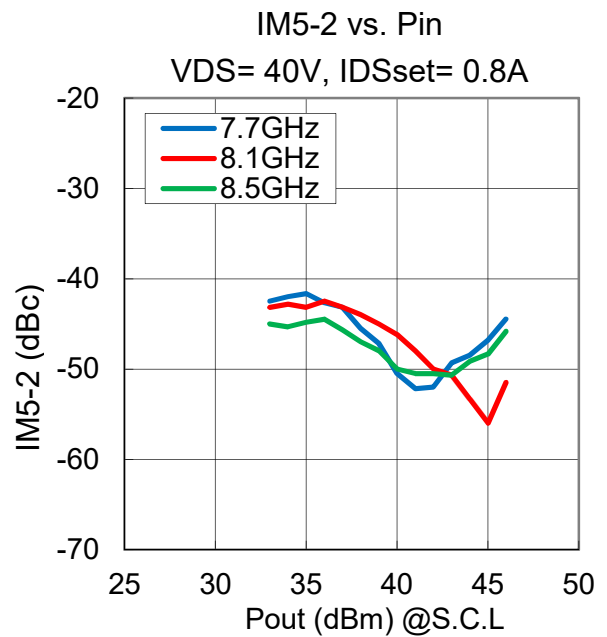
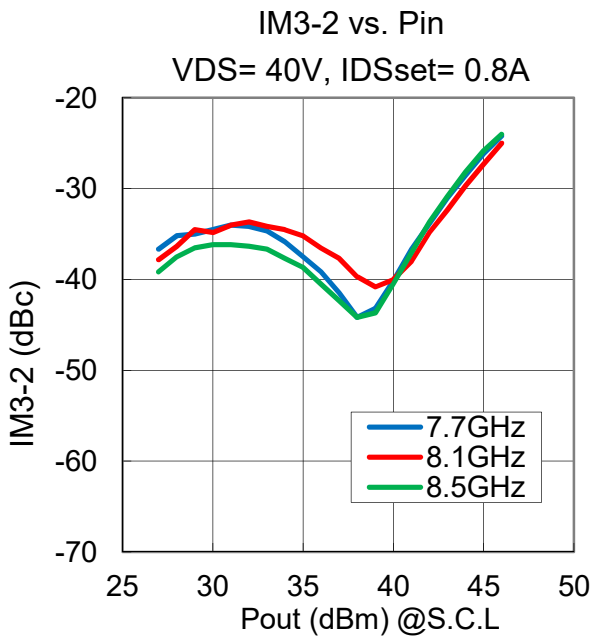
•IM3, IM5 vs. Pout

VDS= 40V, IDSset= 0.8A, f= 7.7, 8.1, 8.5GHz, Δf= 5MHz, Ta= +25°C



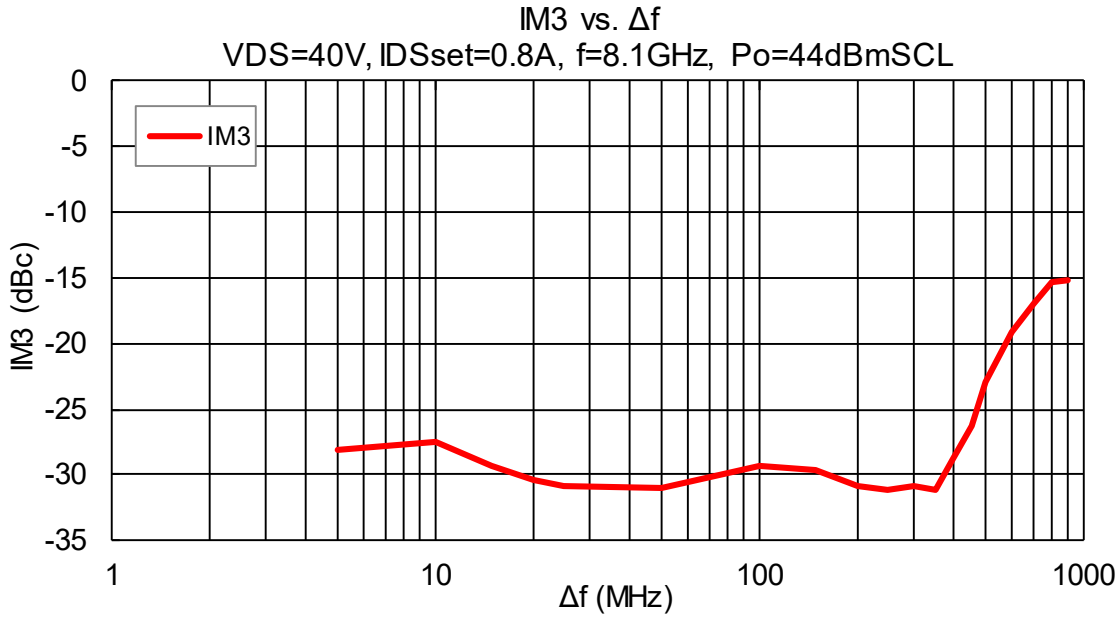
•IM3-2, IM5-2 vs. Pout

VDS= 40V, IDSset= 0.8A, f= 7.7, 8.1, 8.5GHz, Δf= 150MHz, Ta= +25°C



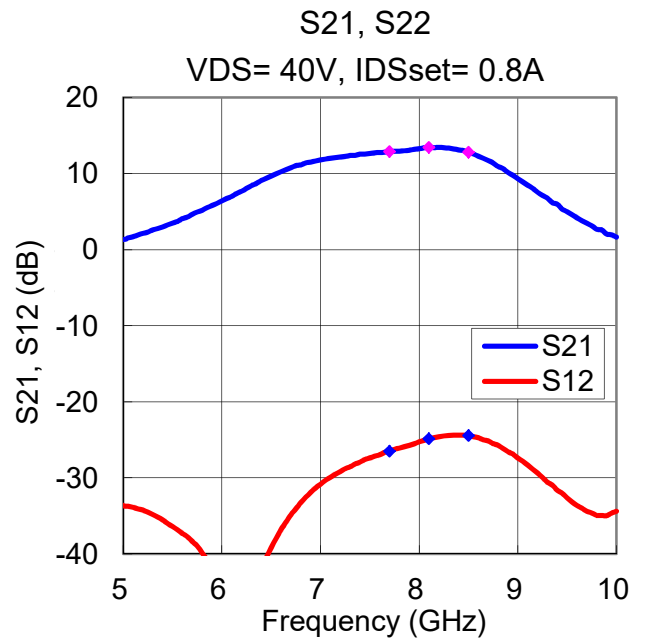
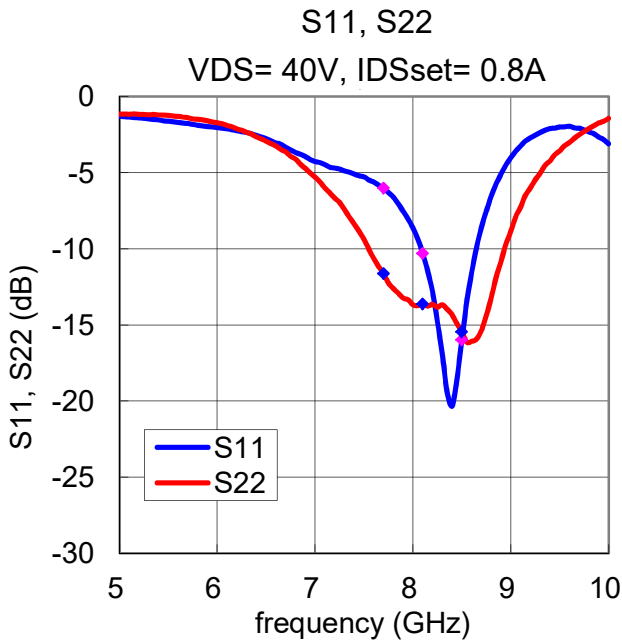
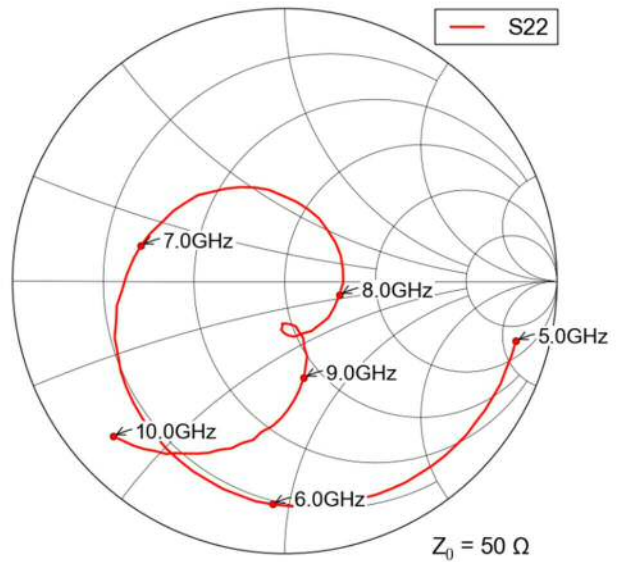
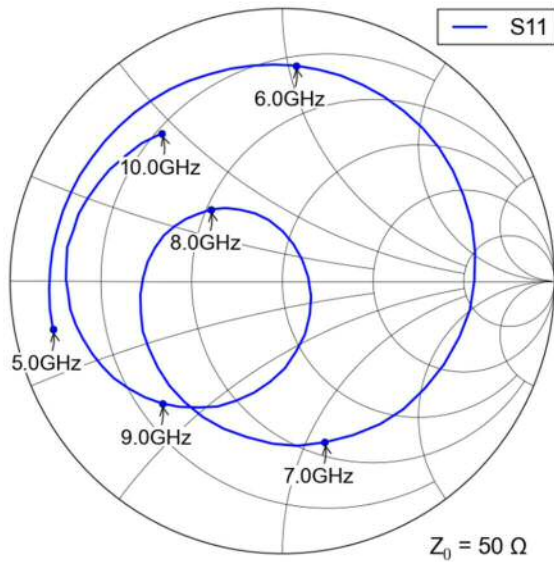
·IM3 vs.  $\Delta f$  (Two tone spacing)

VDS= 40V, IDSset= 0.8A, f= 8.1GHz, Po= 44dBmSCL, Ta= +25°C



**·S-Parameter**

VDS= 40V, IDSset= 0.8A, f= 5 to 10GHz, Ta= +25°C



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