CGHV27030S

30 W, DC - 6.0 GHz, GaN HEMT

Package Type: 3x4 DFN
PN: CGHV27030S

The CGHV27030S is an unmatched, gallium nitride (GaN) high electron mobility transistor (HEMT) which offers high efficiency, high gain and wide bandwidth capabilities. The CGHV27030S GaN HEMT devices are ideal for telecommunications applications with frequencies of 700-960 MHz, 1200-1400 MHz, 1800-2200 MHz, 2500-2700 MHz, and 3300-3700 MHz at both 50 V and 28 V operations. The CGHV27030S is also ideal for tactical communications applications operating from 20-2500 MHz, including land mobile radios. Additional applications include L-Band RADAR and S-Band RADAR. The CGHV27030S can operate with either a 50 V or 28 V rail. The transistor is available in a 3mm x 4mm, surface mount, dual-flat-no-lead (DFN) package.

Typical Performance 2.5-2.7 GHz ($T_C = 25^\circ C$) , 50 V

Parameter	2.5 GHz	2.6 GHz	2.7 GHz	Units
Small Signal Gain	22.5	22.0	21.4	dB
Adjacent Channel Power @ P_{OUT} =5 W	-34.5	-35.0	-34.0	dBc
Drain Efficiency @ P_{OUT} = 5 W	28.5	29.5	30.0	%
Input Return Loss	8.5	14	14	dB

Note:
Measured in the CGHV27030S-AMP1 application circuit, under 7.5 dB PAR single carrier WCDMA signal test model 1 with 64 DPCH.

Features for 50 V in CGHV27030S-AMP1

- 2.5 - 2.7 GHz Operation
- 30 W Typical Output Power
- 20 dB Gain at 5 W P_{AVE}
- -34 dBc ACLR at 5 W P_{AVE}
- 30% efficiency at 5 W P_{AVE}
- High degree of APD and DPD correction can be applied

Large Signal Models Available for ADS and MWO

Listing of Available Hardware Application Circuits / Demonstration Circuits

Application Circuit	Operating Frequency	Amplifier Class	Operating Voltage
CGHV27030S-AMP1	2.5 - 2.7 GHz	Class A/B	50 V
CGHV27030S-AMP2	2.5 - 2.7 GHz	Class A/B	28 V
CGHV27030S-AMP3	1.8 - 2.2 GHz	Class A/B	28 V
CGHV27030S-AMP4	1.8 - 2.2 GHz	Class A/B	50 V
CGHV27030S-AMP5	1.2 - 1.4 GHz	Class A/B	50 V

Rev 4.0 – October 2016

Absolute Maximum Ratings (not simultaneous) at 25˚C Case Temperature

Parameter	Symbol	Rating	Units	Notes
Drain-Source Voltage	V_{DSS}	125	Volts	25˚C
Gate-to-Source Voltage	V_{GS}	-10, +2	Volts	25˚C
Storage Temperature	T_{STG}	-65, +150	˚C	
Operating Junction Temperature	T_J	225	˚C	
Maximum Forward Gate Current	I_{GMAX}	4	mA	25˚C
Maximum Drain Current[1]	I_{DMAX}	1.5	A	25˚C
Soldering Temperature[2]	T_S	245	˚C	
Case Operating Temperature[3]	T_C	-40, +150	˚C	
Thermal Resistance, Junction to Case[4]	$R_{\theta JC}$	6.18	˚C/W	85˚C

Note:

[1] Current limit for long term, reliable operation

[2] Refer to the Application Note on soldering at www.cree.com/rf/document-library

[3] T_C = Case temperature for the device. It refers to the temperature at the ground tab underneath the package. The PCB will add additional thermal resistance. See also, the Power Dissipation De-rating Curve on page 23.

[4] Measured for the CGHV27030S at P_{DISS} = 12 W

[5] The R_{TH} for Cree's demonstration amplifier, CGHV27030S-AMP1, with 33 x 0.011 via holes designed on a 20 mil thick Rogers 4350 PCB, is 3.9°C. The total R_{TH} from the heat sink to the junction is 6.18°C + 3.9°C = 10.08°C/W.

Electrical Characteristics (T_C = 25˚C)

Characteristics	Symbol	Min.	Typ.	Max.	Units	Conditions
DC Characteristics[1]						
Gate Threshold Voltage	$V_{GS(th)}$	-3.8	-3.0	-2.3	V_{DC}	V_{DS} = 10 V, I_D = 4 mA
Gate Quiescent Voltage	$V_{GS(Q)}$	–	-2.7	–	V_{DC}	V_{DS} = 50 V, I_D = 0.13 mA
Saturated Drain Current	I_{DS}	3.0	3.6	–	A	V_{DS} = 6.0 V, V_{GS} = 2.0 V
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	150	–	–	V_{DC}	V_{GS} = -8 V, I_D = 4 mA
RF Characteristics[2,3] (T_C = 25˚C, F_0 = 2.65 GHz unless otherwise noted)						
Gain	G	–	20.4	-	dB	V_{DD} = 50 V, I_{DQ} = 0.13 A, P_{IN} = 10 dBm
Output Power[4]	P_{OUT}	–	44.8	–	dBm	V_{DD} = 50 V, I_{DQ} = 0.13 A, P_{IN} = 28 dBm
Drain Efficiency[4]	η	–	65	-	%	V_{DD} = 50 V, I_{DQ} = 0.13 A, P_{IN} = 28 dBm
Output Mismatch Stress[4]	VSWR	-	10 : 1	-	Ψ	No damage at all phase angles, V_{DD} = 50 V, I_{DQ} = 0.13 A, P_{IN} = 28 dBm
Dynamic Characteristics						
Input Capacitance[5]	C_{GS}	–	5.38	–	pF	V_{DS} = 50 V, V_{gs} = -8 V, f = 1 MHz
Output Capacitance[5]	C_{DS}	–	1.18	–	pF	V_{DS} = 50 V, V_{gs} = -8 V, f = 1 MHz
Feedback Capacitance	C_{GD}	–	0.12	–	pF	V_{DS} = 50 V, V_{gs} = -8 V, f = 1 MHz

Notes:

[1] Measured on wafer prior to packaging

[2] Scaled from PCM data

[3] Measured in Cree's production test fixture. This fixture is designed for high volume test at 2.65 GHz

[4] Un-modulated Pulsed Signal 100 μs, 10% duty cycle

[5] Includes package parasitics.

Typical Performance in Application Circuit CGHV27030S-AMP1

Figure 1. - Small Signal Gain and Return Losses vs Frequency
V_{DD} = 50 V, I_{DQ} = 0.13 A

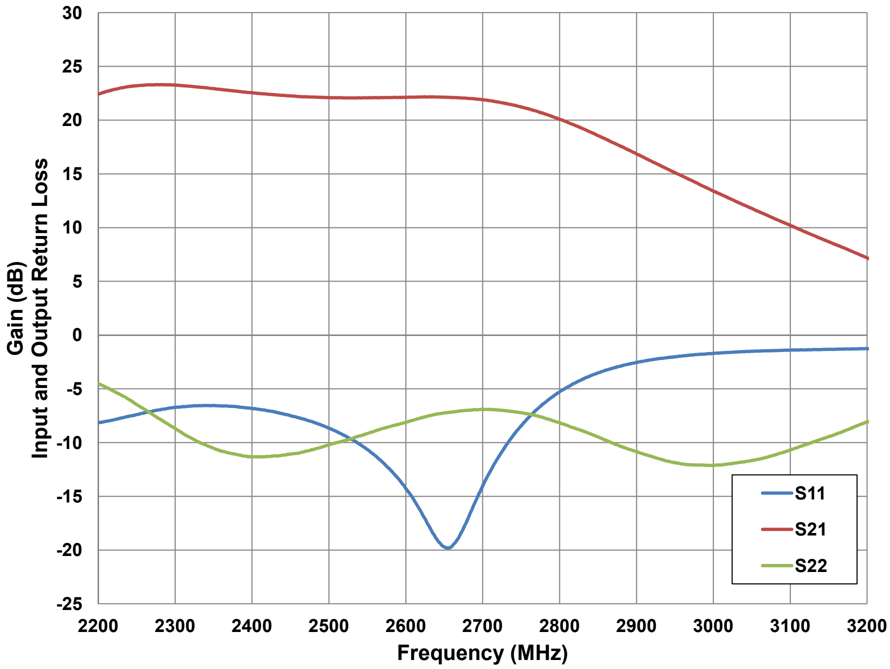
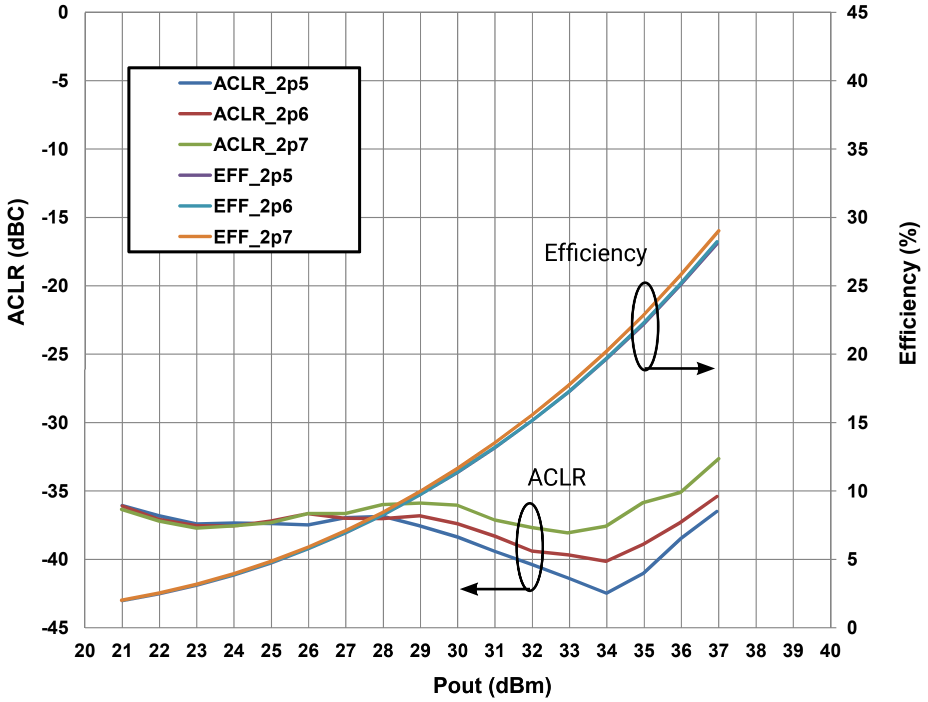
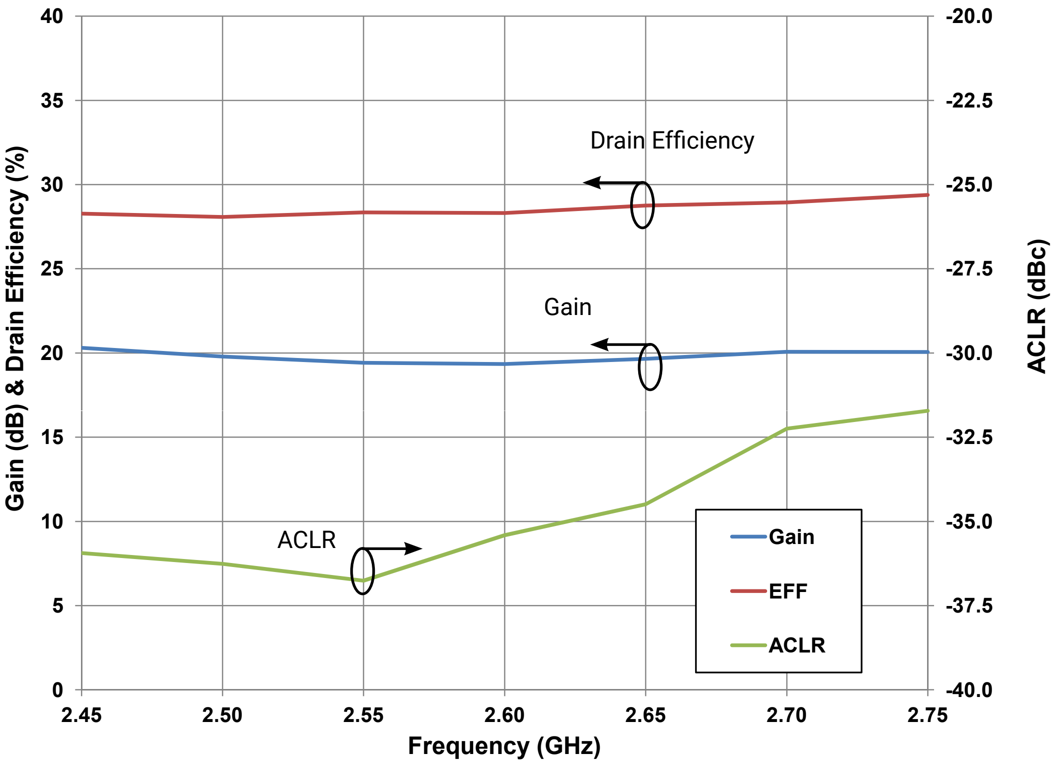


Figure 2. - Typical Drain Efficiency and ACLR vs. Output Power
V_{DD} = 50 V, I_{DQ} = 0.13 A, 1c WCDMA, PAR = 7.5 dB

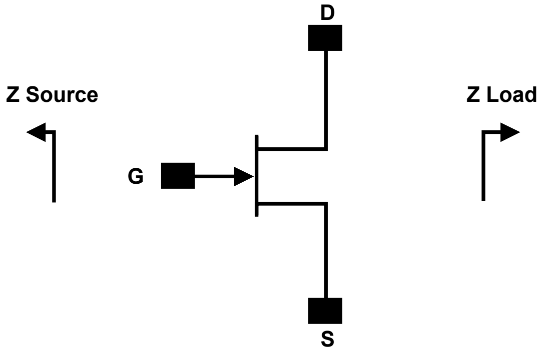


Typical Performance in Application Circuit CGHV27030S-AMP1

Figure 3. - Typical Gain, Drain Efficiency and ACLR vs Frequency
V_{DD} = 50 V , I_{DQ} = 0.13 A, P_{AVE} = 5 W, 1c WCDMA, PAR = 7.5 dB



Source and Load Impedances for Application Circuit CGHV27030S-AMP1



Frequency (MHz)	Z Source	Z Load
2500	2.2 - j0.7	10.9 + j15.7
2600	2.8 - j1.1	11.5 + j16.7
2700	2.5 - j1.7	12.1+j17.7

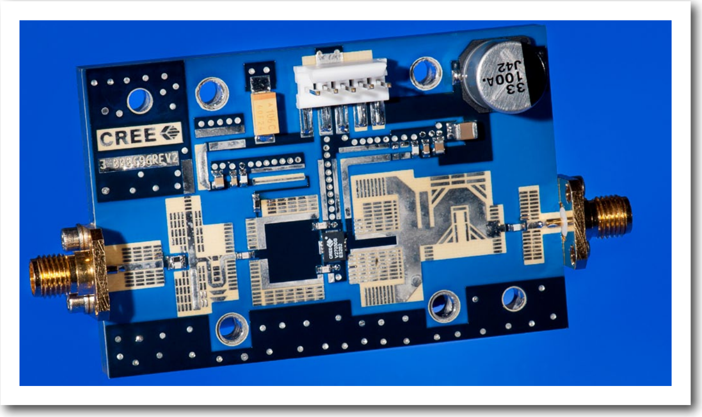
Note[1]: V_{DD} = 50 V, I_{DQ} = 0.13 A in the DFN package.

Note[2]: Impedances are extracted from the CGHV27030S-AMP1 application circuit and are not source and load pull data derived from the transistor.

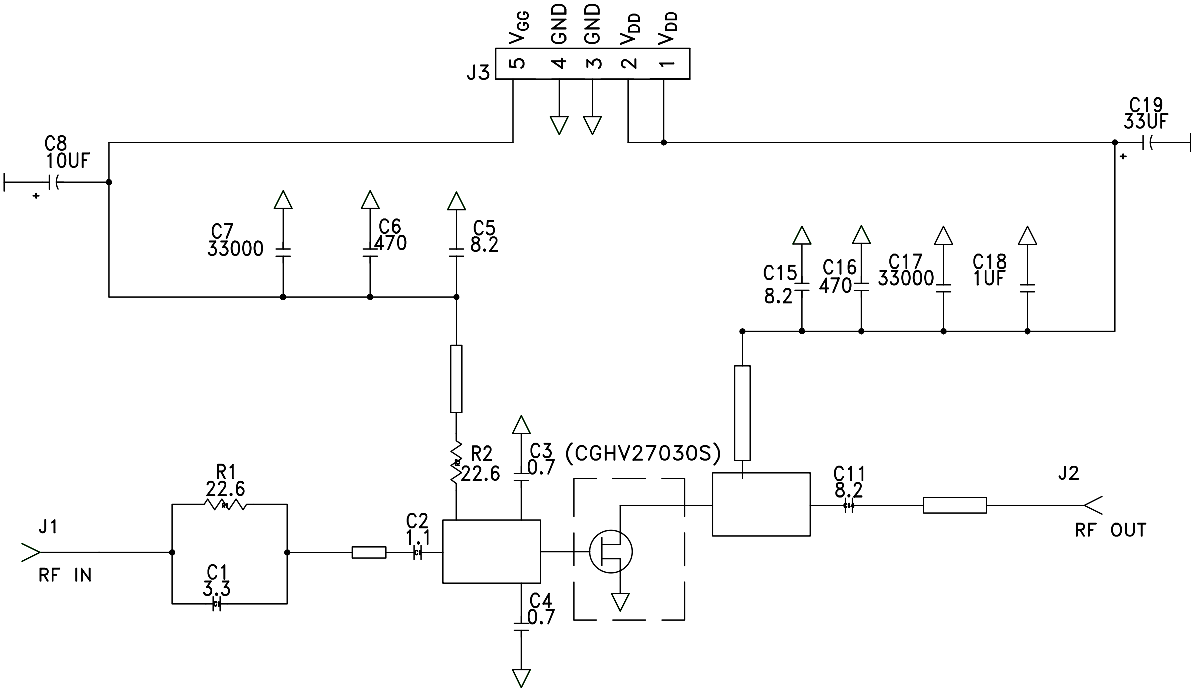
CGHV27030S-AMP1 Bill of Materials

Designator	Description	Qty
R1, R2	RES, 22.6, OHM, +/-1%, 1/16W, 0603	2
C1	CAP, 3.3 pF, ±0.1 pF, 0603, ATC	1
C2	CAP, 1.1 pF, ±0.05 pF, 0603, ATC	1
C3, C4	CAP, 0.7 pF, ±0.05 pF, 0603, ATC	3
C5, C11, C15	CAP, 8.2 pF, ±0.25 pF, 0603, ATC	3
C6, C16	CAP, 470 pF, 5%, 100 V, 0603	2
C7, C17	CAP, 33000 pF, 0805, 100 V, 0603, X7R	2
C18	CAP, 1.0 UF, 100 V, 10%, X7R, 1210	1
C8	CAP, 10 UF 16 V TANTALUM	1
C19	CAP, 33 UF, 20%, G CASE	1
J1, J2	CONN, SMA, PANEL MOUNT JACK, FLANGE, 4-HOLE, BLUNT POST	2
J3	HEADER RT>PLZ .1CEN LK 5 POS	1
PCB	PCB, ROGERS 4350, ER 3.66	1
Q1	CGHV27030S, QFN	1

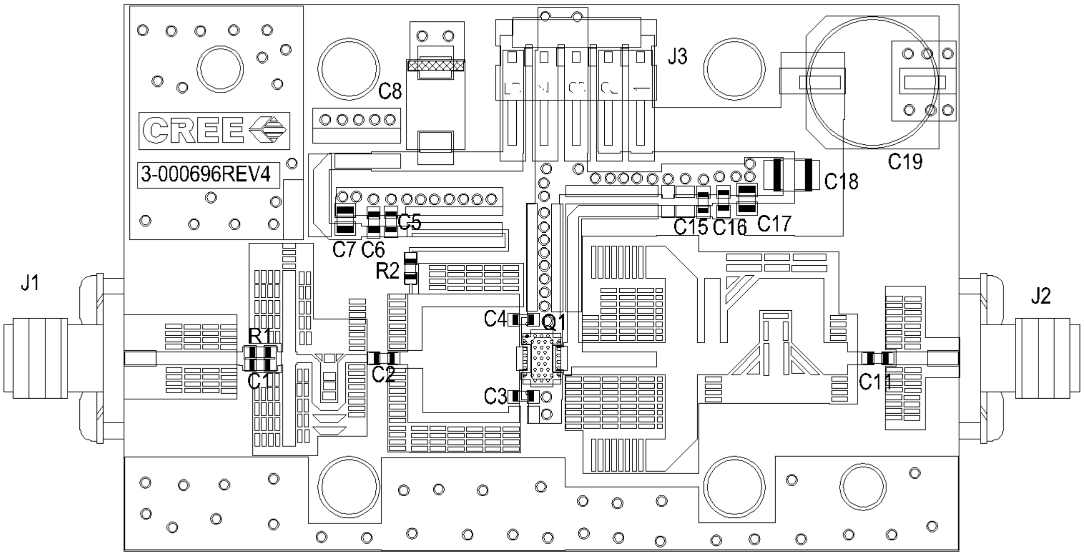
CGHV27030S -AMP1 Application Circuit



CGHV27030S-AMP1 Application Circuit Schematic, 50 V



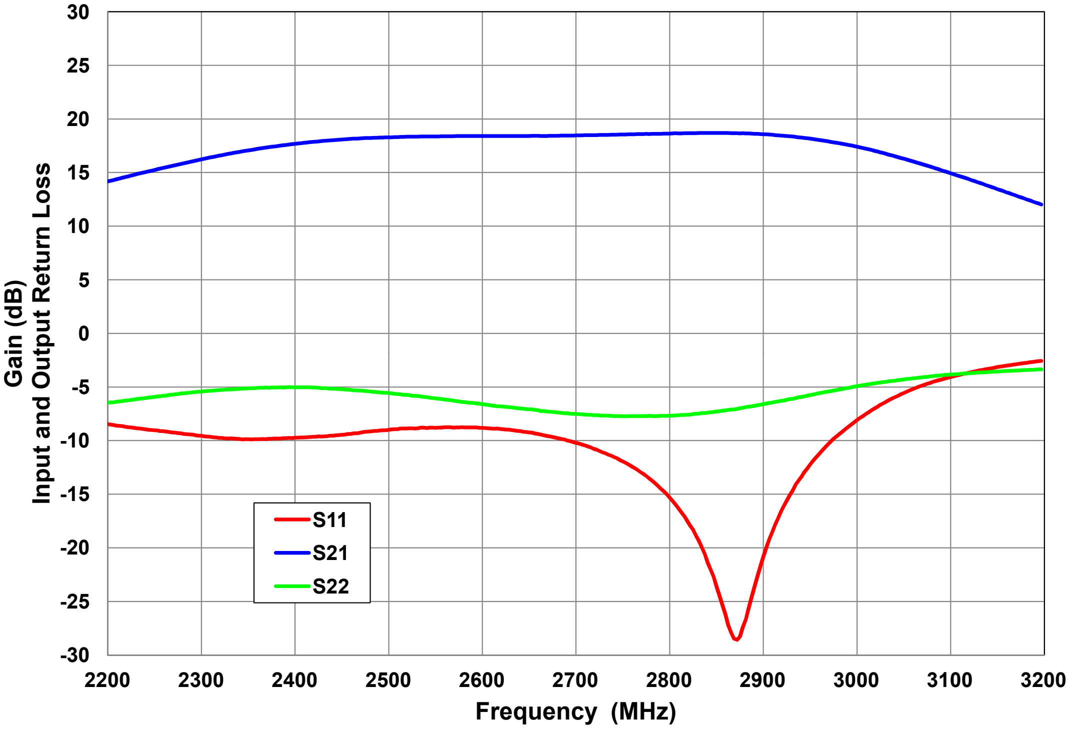
CGHV27030S-AMP1 Application Circuit Outline, 50 V



Electrical Characteristics When Tested in CGHV27030S-AMP2, 28 V, 2.5 - 2.7 GHz

Parameter	2.5 GHz	2.6 GHz	2.7 GHz	Units
Small Signal Gain	15.5	15.7	16.0	dB
Adjacent Channel Power @ P_{OUT} =3.2 W	-42.0	-41.7	-41.2	dBc
Drain Efficiency @ P_{OUT} = 3.2 W	33.5	34.2	34.1	%
Input Return Loss	-9.0	-8.8	-10.2	dB

Figure 4. - Small Signal Gain and Return Losses vs Frequency
V_{DD} = 28 V, I_{DQ} = 0.13 A



Typical Performance in Application Circuit CGHV27030S-AMP2

Figure 5. - Typical Drain Efficiency and ACLR vs. Output Power
V_{DD} = 28 V, I_{DQ} = 0.13 A, 1c WCDMA, PAR = 7.5 dB

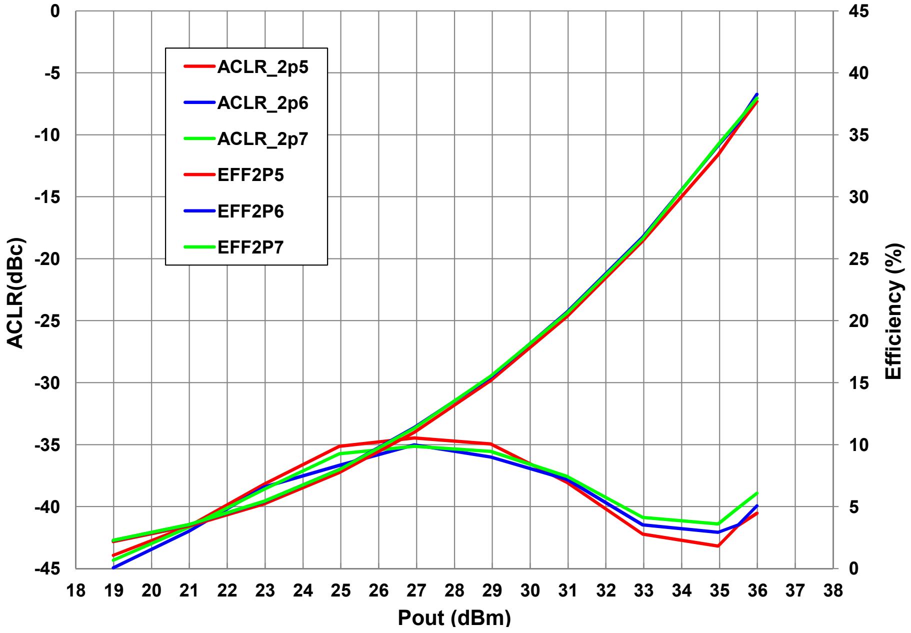
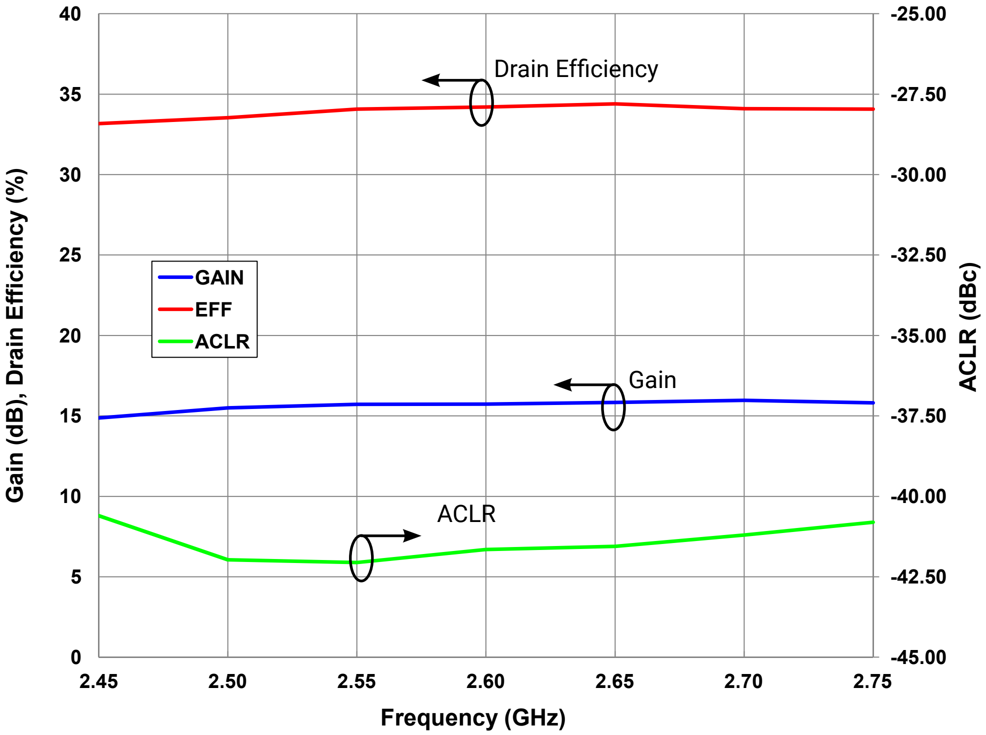
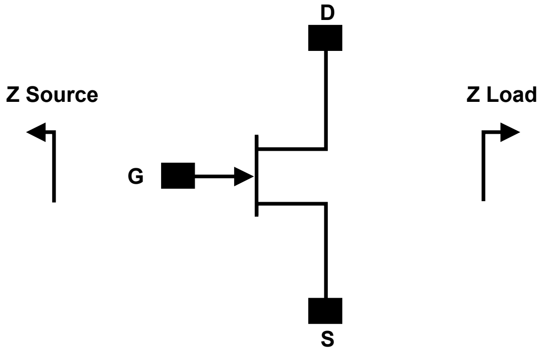


Figure 6. - Typical Gain, Drain Efficiency and ACLR vs Frequency
V_{DD} = 28 V, I_{DQ} = 0.13 A, P_{AVE} = 3.2 W, 1c WCDMA, PAR = 7.5 dB



Source and Load Impedances for Application Circuit CGHV27030S-AMP2



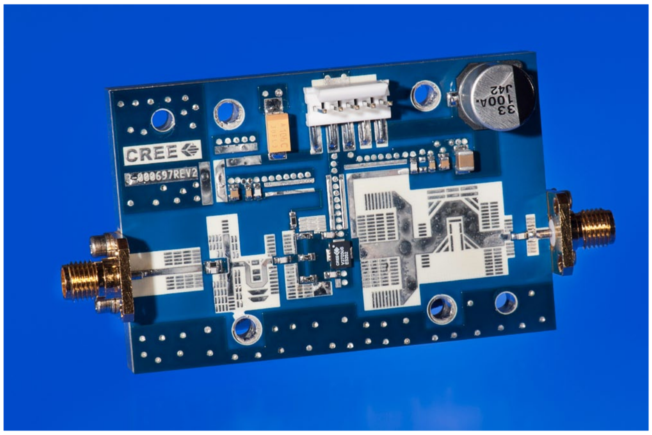
Frequency (MHz)	Z Source	Z Load
2500	2.9 - j2.7	14.5 + j7.4
2600	3.1 - j2.9	13.8 + j7.3
2700	2.7 - j3.1	12.9+j7.6

Note[1]: V_{DD} = 28 V, I_{DQ} = 0.13 A in the DFN package.
Note[2]: Impedances are extracted from the CGHV27030S-AMP2 application circuit and are not source and load pull data derived from the transistor

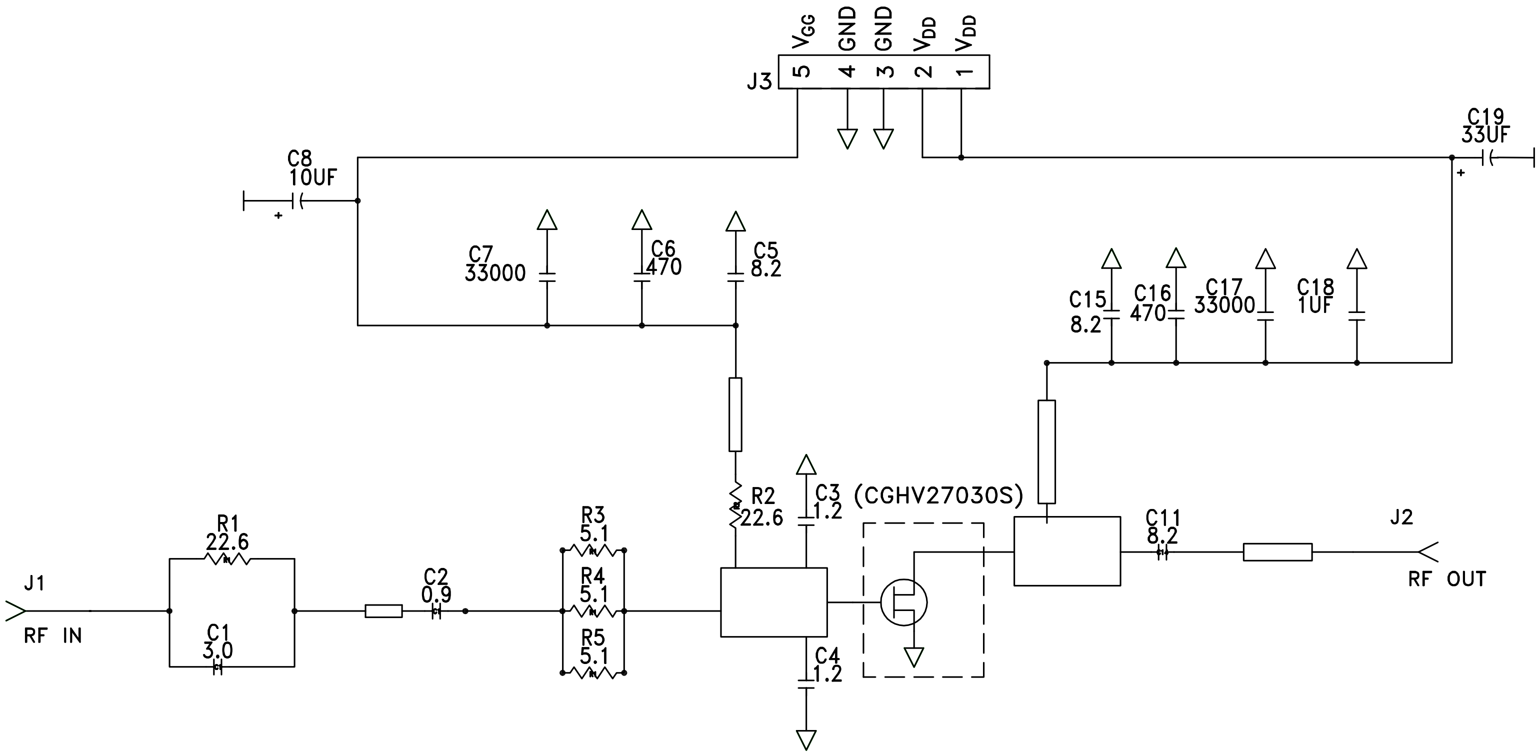
CGHV27030S-AMP2 Bill of Materials

Designator	Description	Qty
R1, R2	RES, 22.6, OHM, +/-1%, 1/16W, 0603	2
C1	CAP, 3.0 pF, ±0.1 pF, 0603, ATC	1
C2	CAP, 0.9 pF, ±0.05 pF, 0603, ATC	3
R3,R4,R5	RES, 1/16W, 0603, 1%, 5.1% OHMS	3
C3,C4	CAP, 1.2 pF, +/-0.1 pF, 0603, ATC	2
C5, C11, C15	CAP, 8.2 pF, ±0.25 pF, 0603, ATC	3
C6, C16	CAP, 470 pF, 5%, 100 V, 0603	2
C7, C17	CAP, 33000 pF, 0805, 100 V, 0603, X7R	2
C18	CAP, 1.0 UF, 100 V, 10%, X7R, 1210	1
C8	CAP, 10 UF 16 V TANTALUM	1
C19	CAP, 33 UF, 20%, G CASE	1
J1, J2	CONN, SMA, PANEL MOUNT JACK	2
J3	HEADER RT>PLZ .1CEN LK 5 POS	1
PCB	PCB, ROGERS 4350, ER 3.66	1
Q1	CGHV27030S, QFN	1

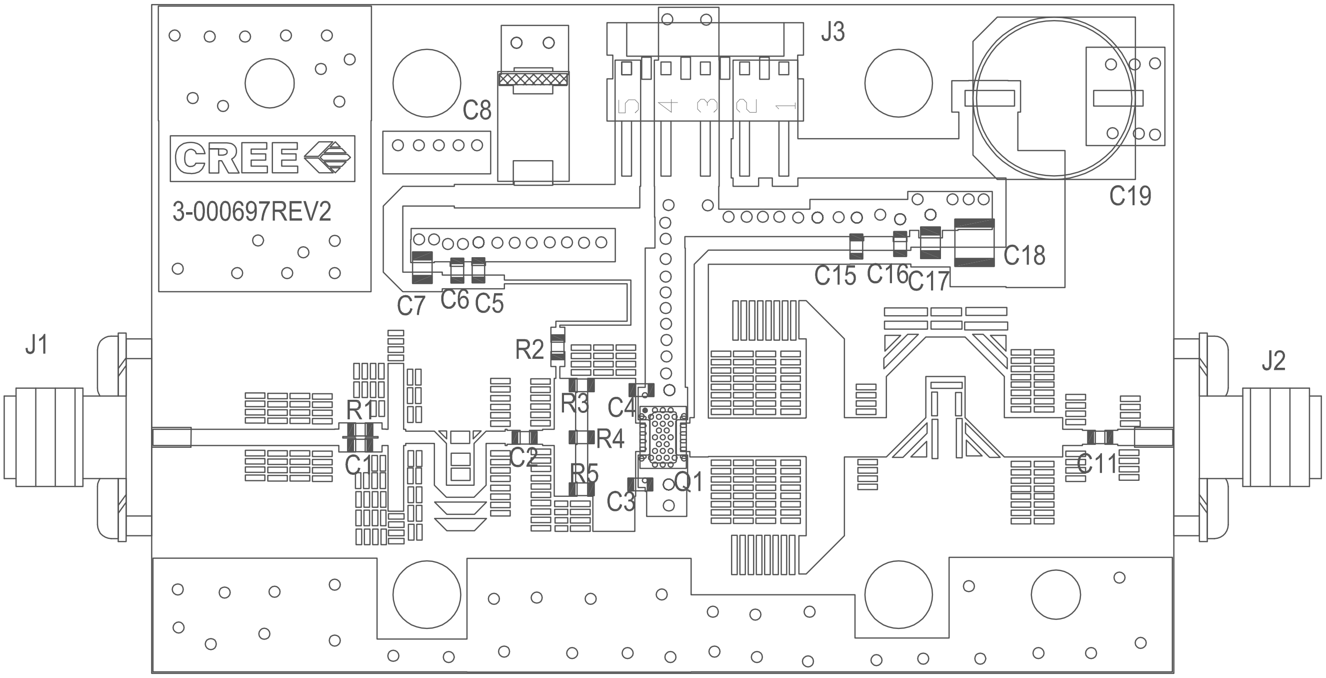
CGHV27030S-AMP2 Application Circuit



CGHV27030S-AMP2 Application Circuit Schematic, 28 V



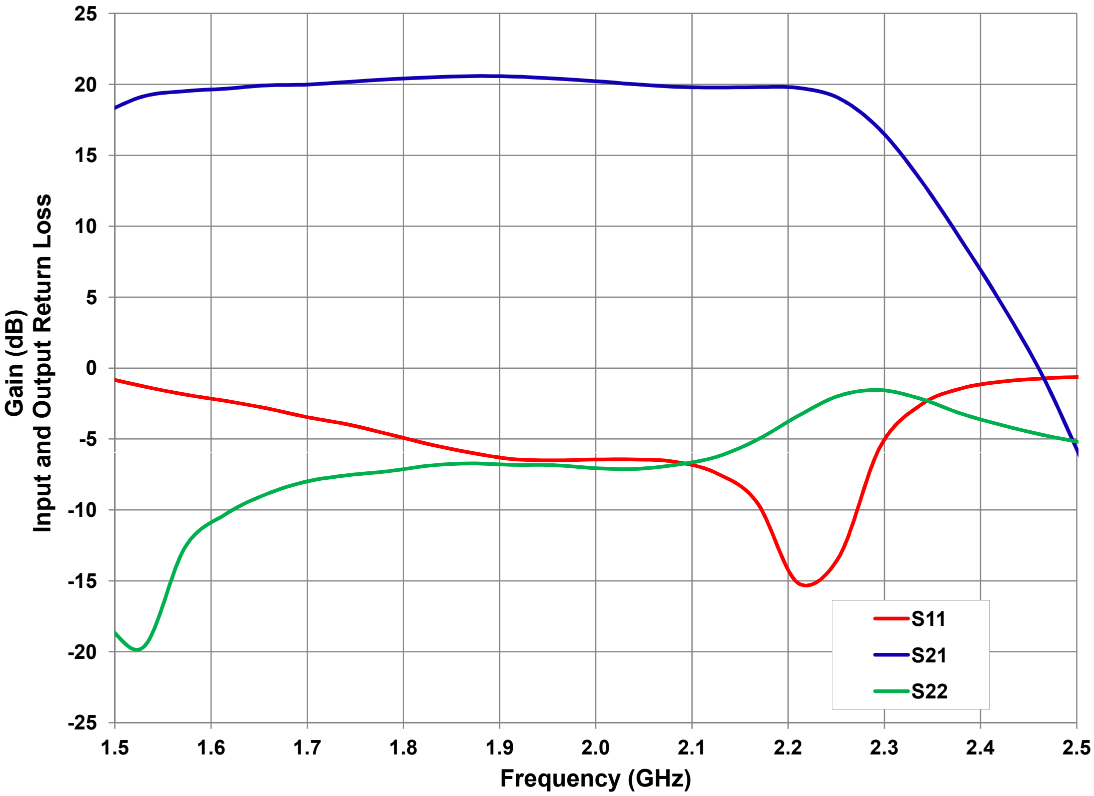
CGHV27030S-AMP2 Application Circuit Outline, 28 V



Electrical Characteristics When Tested in CGHV27030S-AMP3, 28 V, 1.8 - 2.2 GHz

Parameter	1.8 GHz	2.0 GHz	2.2 GHz	Units
Small Signal Gain	19	19	18	dB
Adjacent Channel Power @ P_{OUT} =3.2 W	-37	-38	-39	dBc
Drain Efficiency @ P_{OUT} = 3.2 W	35	35	33	%
Input Return Loss	5	6	7	dB

Figure 7. - Small Signal Gain and Return Losses vs Frequency
V_{DD} = 28 V, I_{DQ} = 0.13 A



Typical Performance in Application Circuit CGHV27030S-AMP3

Figure 8. - Typical Drain Efficiency and ACLR vs. Output Power
V_{DD} = 28 V, I_{DQ} = 0.13 A, 1c WCDMA, PAR = 7.5 dB

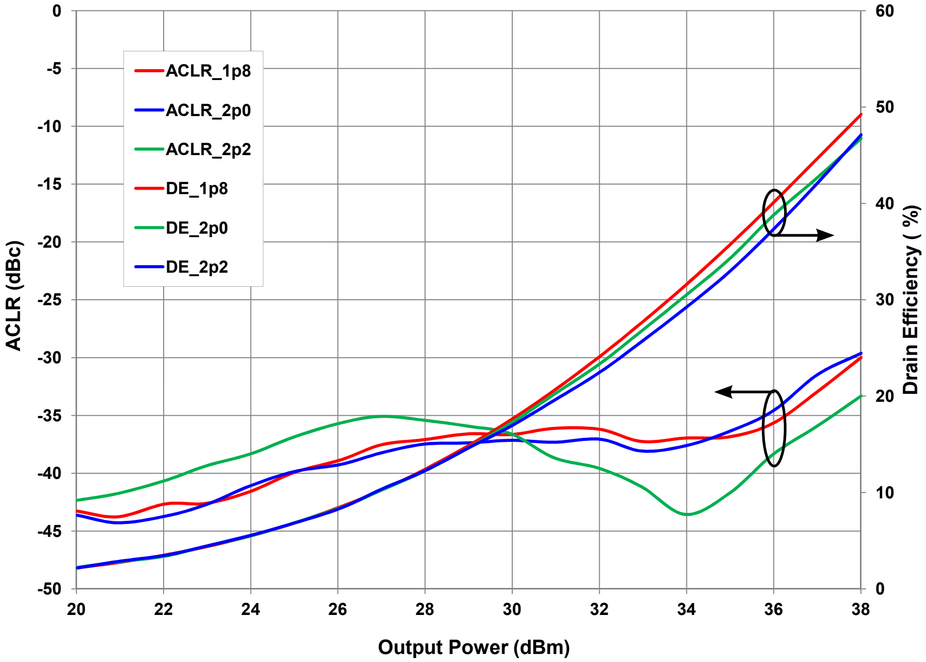
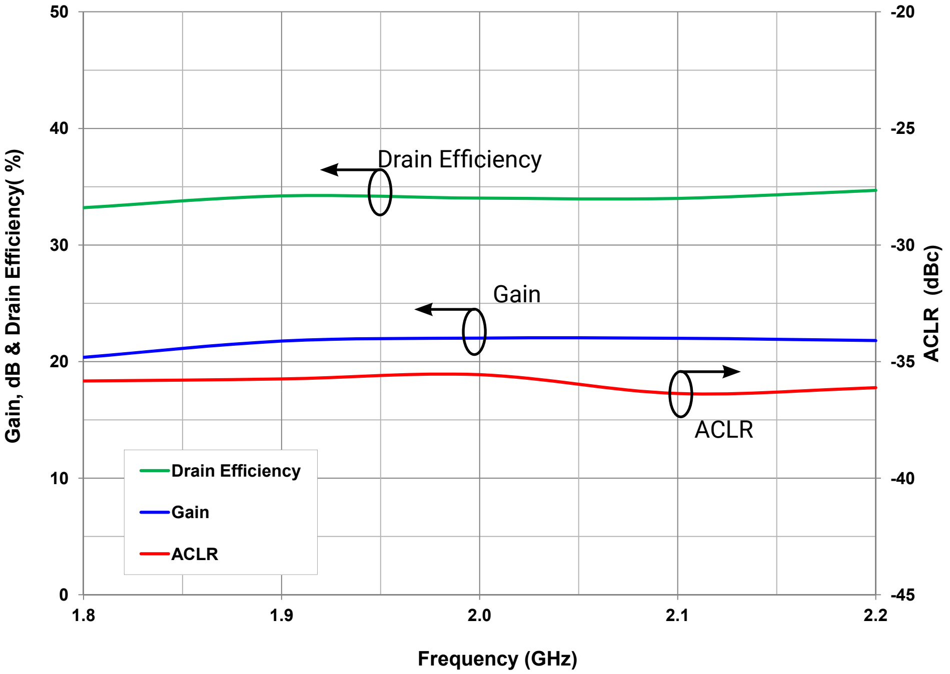
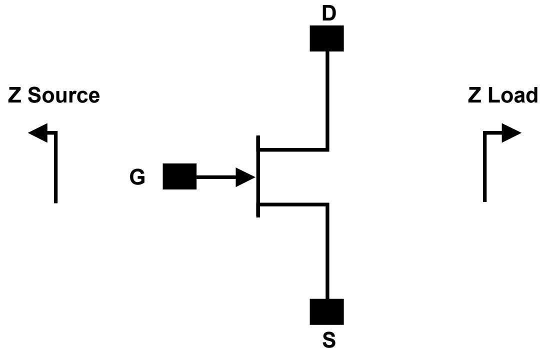


Figure 9. - Typical Gain, Drain Efficiency and ACLR vs Frequency
V_{DD} = 28 V, I_{DQ} = 0.13 A, P_{AVE} = 3.2 W, 1c WCDMA, PAR = 7.5 dB



Source and Load Impedances for Application Circuit CGHV27030S-AMP3



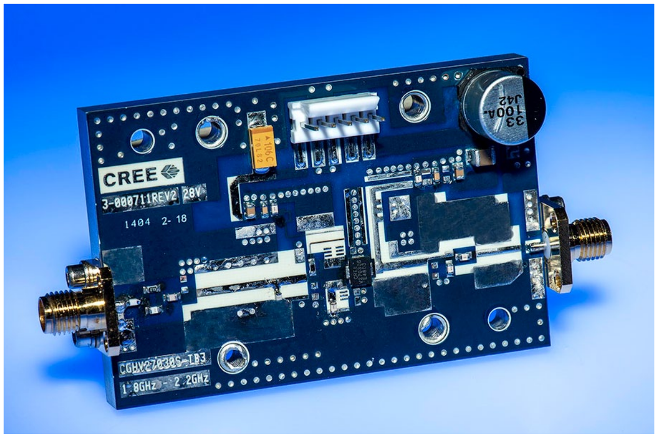
Frequency (MHz)	Z Source	Z Load
1800	6.16 - j3.5	21.9 + j6.5
2000	6.8 - j1.7	21 + j8.4
2200	5.5 - j2.0	20.8 + j11

Note[1]: V_{DD} = 28 V, I_{DQ} = 0.13 A in the DFN package.
Note[2]: Impedances are extracted from the CGHV27030S-AMP3 application circuit and are not source and load pull data derived from the transistor

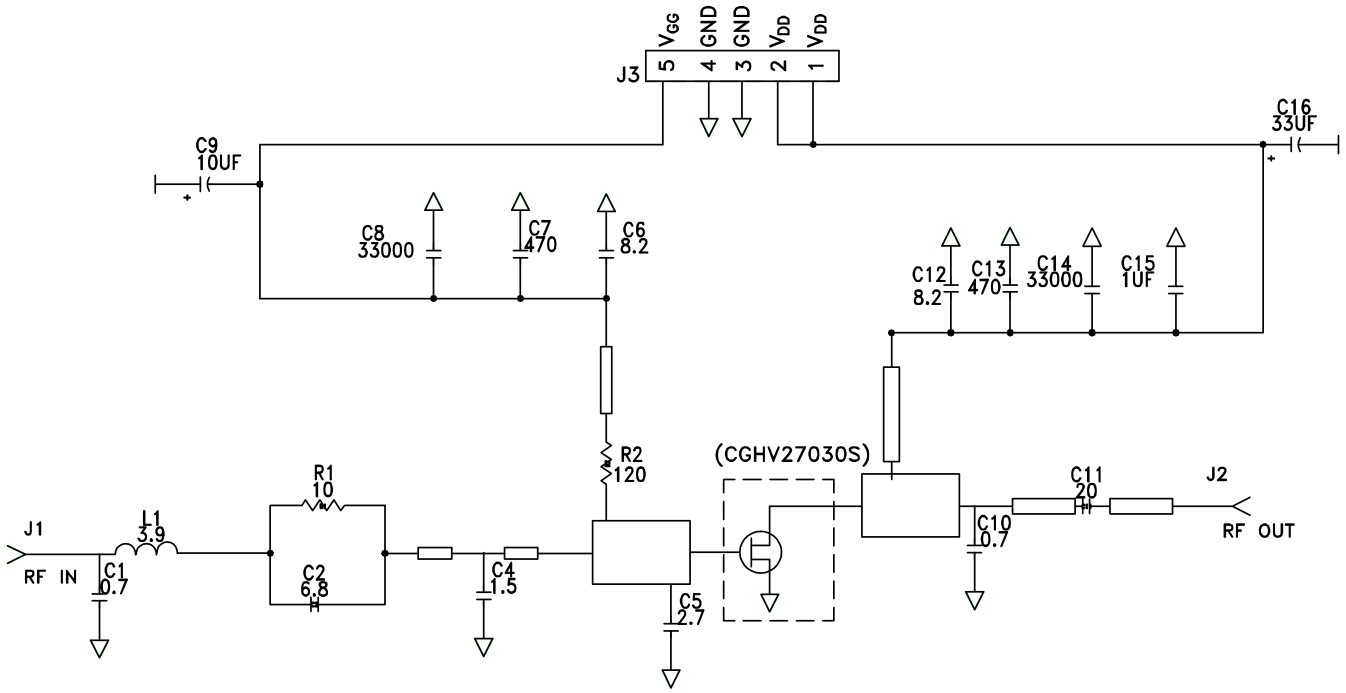
CGHV27030S-AMP3 Bill of Materials

Designator	Description	Qty
R1	RES, 10, OHM, +/-1%, 1/16W, 0603	1
R2	RES, 120, OHM, +/-1%, 1/16W, 0603	1
L1	IND, 3.9 nH, +/-5%, 0603, JOHANSON	1
C1	CAP, 0.7 pF, +/-0.1 pF, 0603, ATC	1
C2	CAP, 6.8 pF, +/-5%, 0603, ATC	1
C3	CAP, 47pF, +/-0.1 pF, 0603, ATC	1
C4	CAP, 1.5 pF, +/-0.1 pF, 0603, ATC	1
C5	CAP, 2.7 pF, +/-0.1 pF, 0603, ATC	1
C6, C12	CAP, 8.2 pF, +/-0.25 pF, 0603, ATC	2
C7, C13	CAP, 470 pF, 5%, 100 V, 0603	2
C8, C14	CAP, 33000 pF, 0805, X7R	2
C9	CAP 10 UF 16 V TANTALUM	1
C10	CAP, 0.7 pF, +/-0.05 pF, 0603, ATC	1
C11	CAP, 20 pF, +/-5%, 0603, ATC	1
C15	CAP, 1.0 UF, 100V, 10%, X7R, 1210	1
C16	CAP, 33 UF, 20%, G CASE	1
J1, J2	CONN, SMA, PANEL MOUNT JACK, FLANGE, 4-HOLE, BLUNT POST	2
	PCB, RO4350, 0.020” THK	1
	BASEPLATE, CGH35015, 2.60 X 1.7	1
J3	HEADER RT>PLZ .1CEN LK 5POS	1
	2-56 SOC HD SCREW 1/4 SS	4
	#2 SPLIT LOCKWASHER SS	4
Q1	CGHV27030S, QFN	1

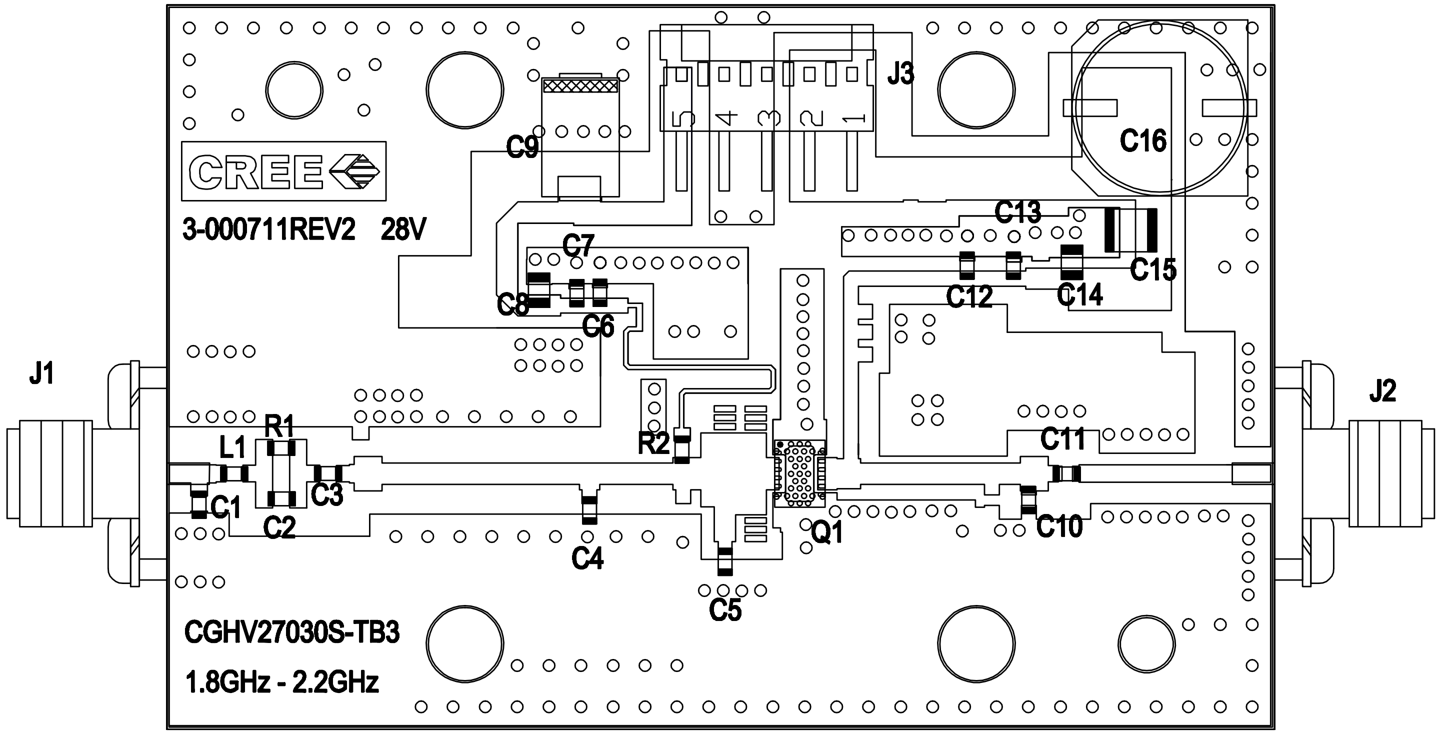
CGHV27030S-AMP3 Application Circuit



CGHV27030S-AMP3 Application Circuit Schematic, 28 V



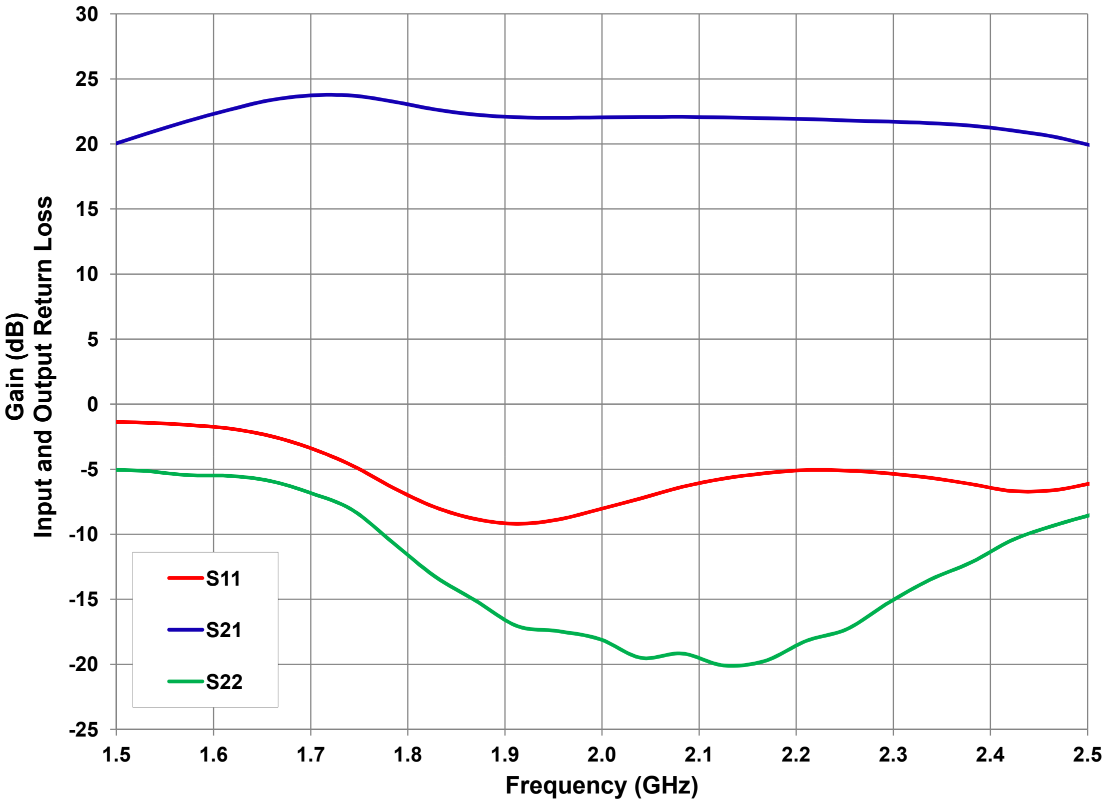
CGHV27030S-AMP3 Application Circuit Outline, 28 V



Electrical Characteristics When Tested in CGHV27030S-AMP4, 50 V, 1.8 - 2.2 GHz

Parameter	1.8 GHz	2.0 GHz	2.2 GHz	Units
Small Signal Gain	22	22	21	dB
Adjacent Channel Power @ P_{OUT} =5 W	-39	-38	-37	dBc
Drain Efficiency @ P_{OUT} = 5 W	31	32	33	%
Input Return Loss	5	7	6	dB

Figure 10. - Small Signal Gain and Return Losses vs Frequency
V_{DD} = 50 V, I_{DQ} = 0.13 A



Typical Performance in Application Circuit CGHV27030S-AMP4

Figure 11. - Typical Drain Efficiency and ACLR vs. Output Power
V_{DD} = 50 V, I_{DQ} = 0.13 A, 1c WCDMA, PAR = 7.5 dB

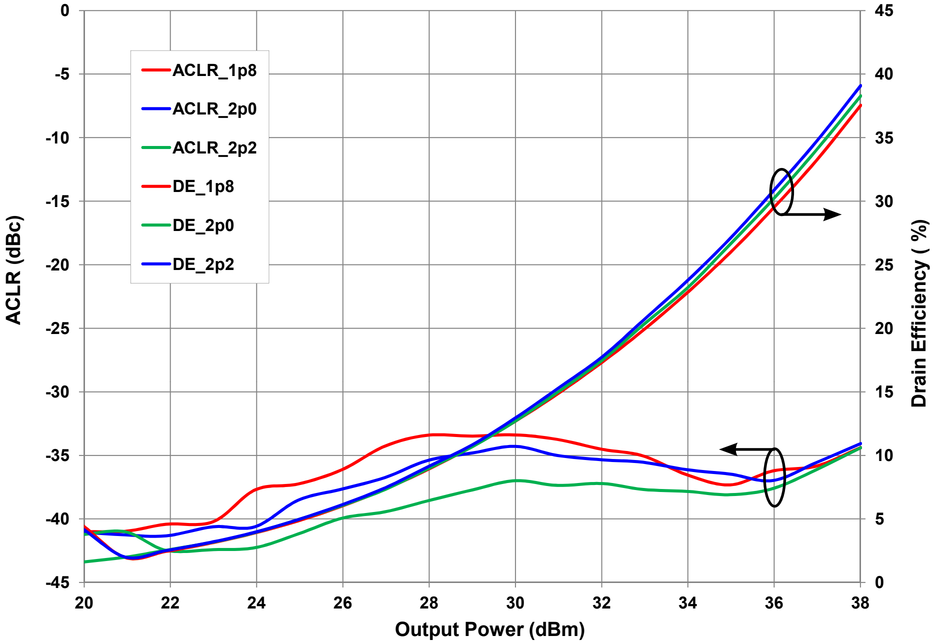
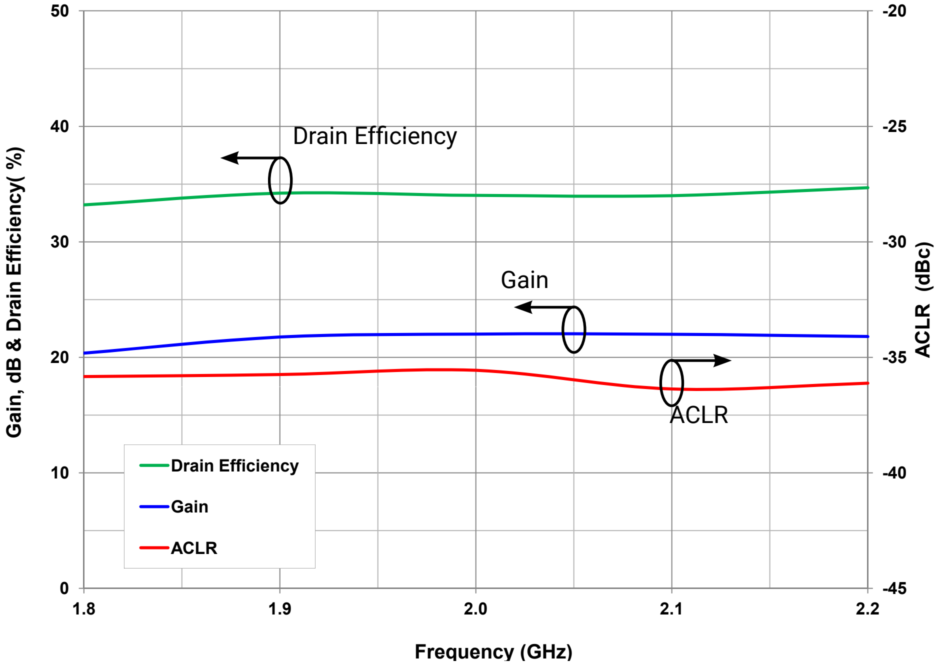
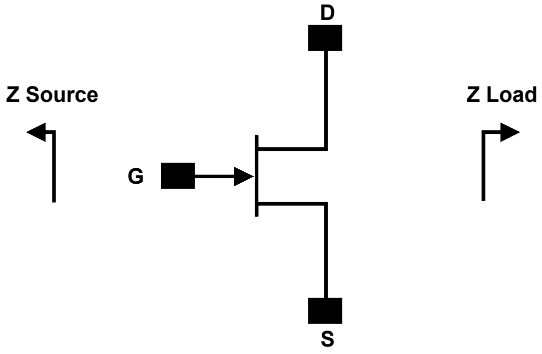


Figure 12. - Typical Gain, Drain Efficiency and ACLR vs Frequency
V_{DD} = 50 V, I_{DQ} = 0.13 A, P_{AVE} = 5 W, 1c WCDMA, PAR = 7.5 dB



Source and Load Impedances for Application Circuit CGHV27030S-AMP4



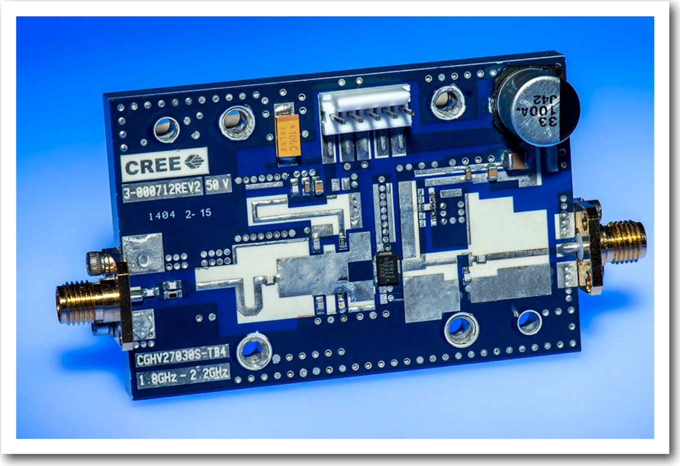
Frequency (MHz)	Z Source	Z Load
1800	5.0 - j3.3	20.0 + j18.6
2000	6.4 - j3.3	17.8 + j19.1
2200	4.0 - j2.7	16.2 + j20.8

Note[1]: V_{DD} = 50 V, I_{DQ} = 0.13 A in the DFN package.
Note[2]: Impedances are extracted from the CGHV27030S-AMP4 application circuit and are not source and load pull data derived from the transistor

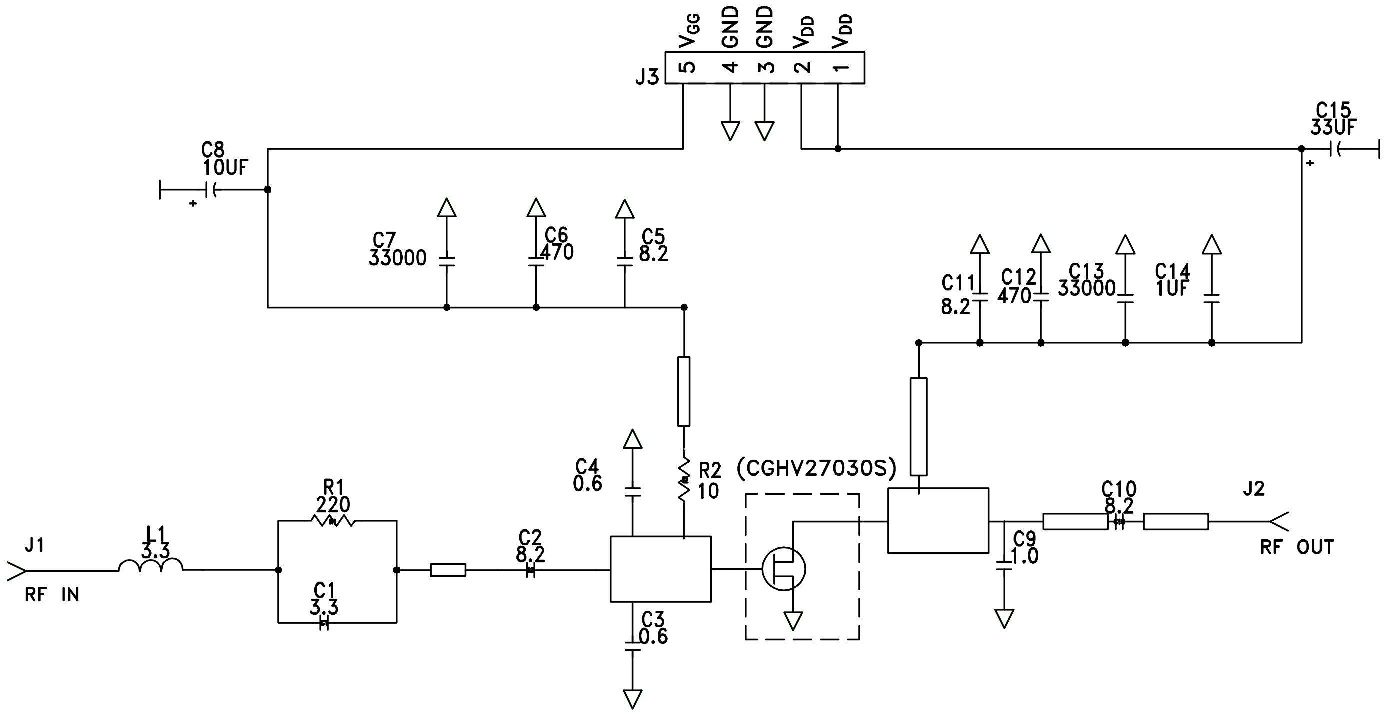
CGHV27030S-AMP4 Bill of Materials

Designator	Description	Qty
R1	RES, 220, OHM, +/-1%, 1/16W, 0603	1
R2	RES, 10, OHM, +/-1%, 1/16W, 0603	1
L1	IND, 3.3 nH, +/-5%, 0603, JOHANSON	1
C1	CAP, 3.3 pF, +/-0.1 pF, 0603, ATC	1
C2, C5, C10, C11	CAP, 8.2 pF, +/-5%, 0603, ATC	1
C3, C4	CAP, 0.6 pF, +/-0.1 pF, 0603, ATC	2
C6, C12	CAP, 470 pF, 5%, 100V, 0603, X	2
C7, C13	CAP, 33000 pF, 0805, 100V. X7R	2
C8	CAP 10 UF 16 V TANTALUM	1
C9	CAP, 1.0 pF, +/-0.1 pF, 0603, ATC	1
C14	CAP, 1.0 UF, 100V, 10%, X7R, 1210	1
C15	CAP, 33 UF, 20%, G CASE	1
J1, J2	CONN, SMA, PANEL MOUNT JACK, FLANGE, 4-HOLE, BLUNT POST	2
PCB	PCB, RO4350, 0.020” THK	1
J3	HEADER RT>PLZ .1CEN LK 5POS	1
Q1	CGHV27030S, QFN	1

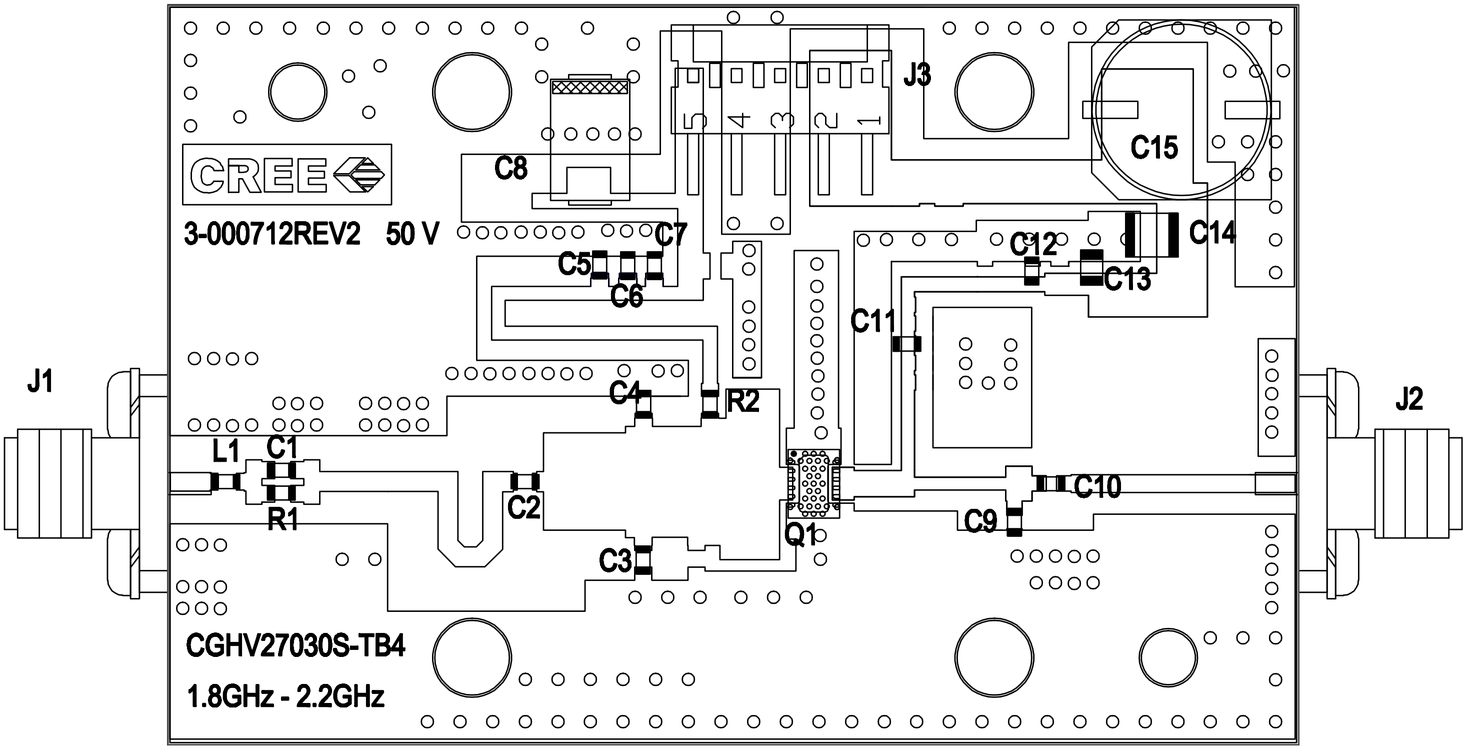
CGHV27030S-AMP4 Application Circuit



CGHV27030S-AMP4 Application Circuit Schematic, 50 V



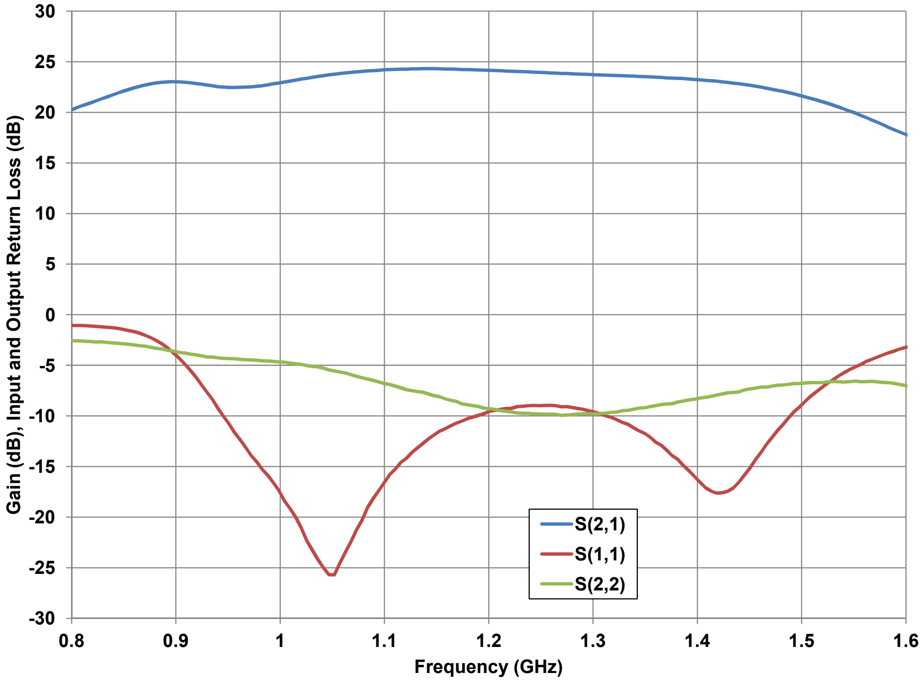
CGHV27030S-AMP4 Application Circuit Outline, 50 V



Electrical Characteristics When Tested in CGHV27030S-AMP5, 50 V, 1.2 - 1.4 GHz

Parameter	1.2 GHz	1.3 GHz	1.4 GHz	Units
Output Power @ P_{IN} = 27 dBm	35.5	33.5	32.5	W
Gain @ P_{IN} = 27 dBm	18.5	18.25	18.1	dB
Drain Efficiency @ P_{IN} = 27 dBm	71	67	65	%

Figure 13. - Small Signal Gain and Return Losses vs Frequency
V_{DD} = 50 V, I_{DQ} = 0.125 A



Typical Performance in Application Circuit CGHV27030S-AMP5

Figure 14. - Typical Output Power and Drain Efficiency Input Power

V_{DD} = 50 V, I_{DQ} = 0.125 A, Pulse Width = 100 us, Duty Cycle = 10 %

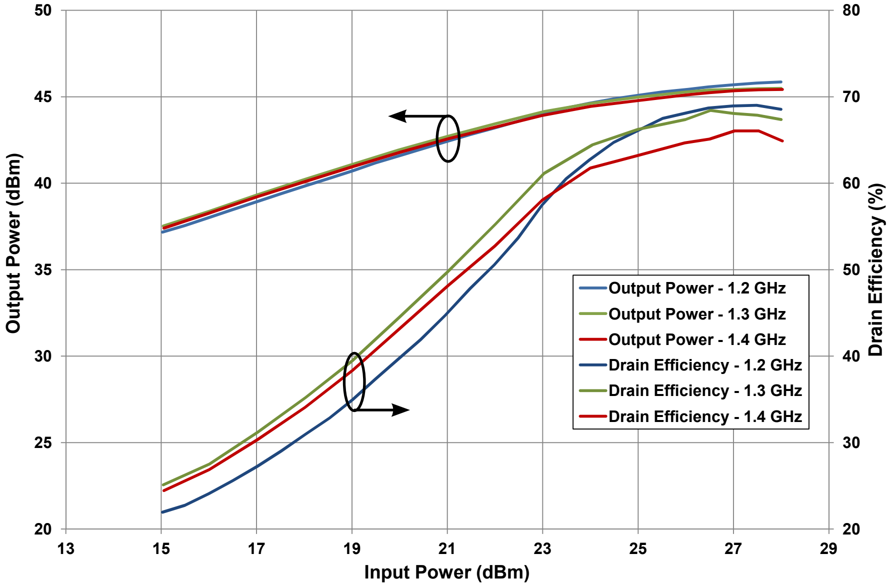
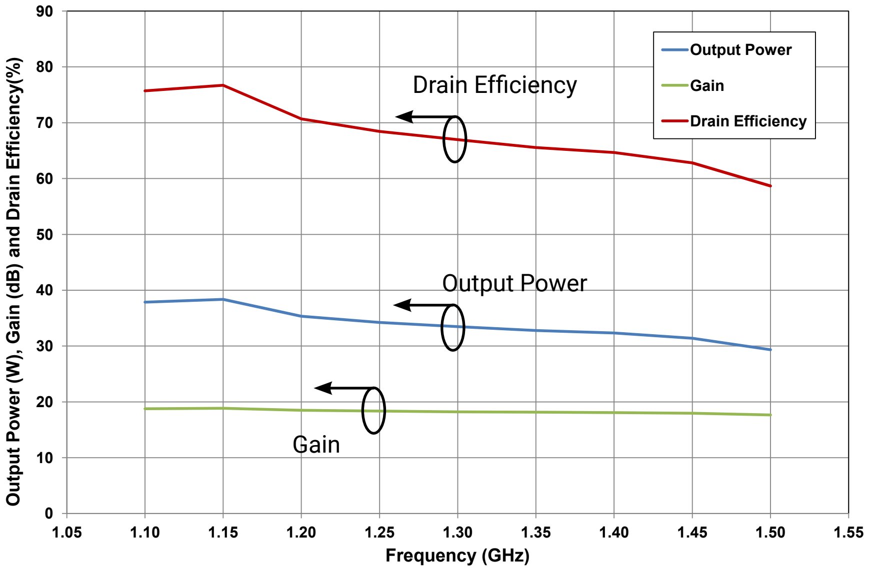
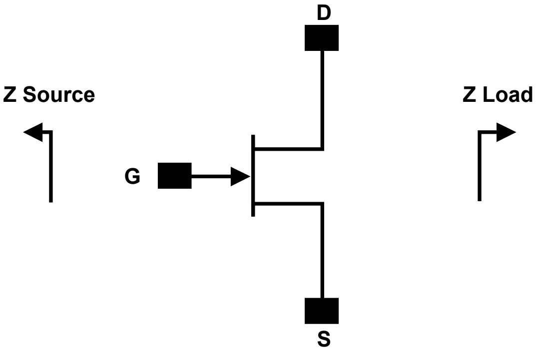


Figure 15. - Typical Output Power, Gain, and Drain Efficiency vs Frequency

V_{DD} = 50 V, I_{DQ} = 0.125 A, P_{IN} = 27 dBm, Pulse Width = 100 us, Duty Cycle = 10 %



Source and Load Impedances for Application Circuit CGHV27030S-AMP5



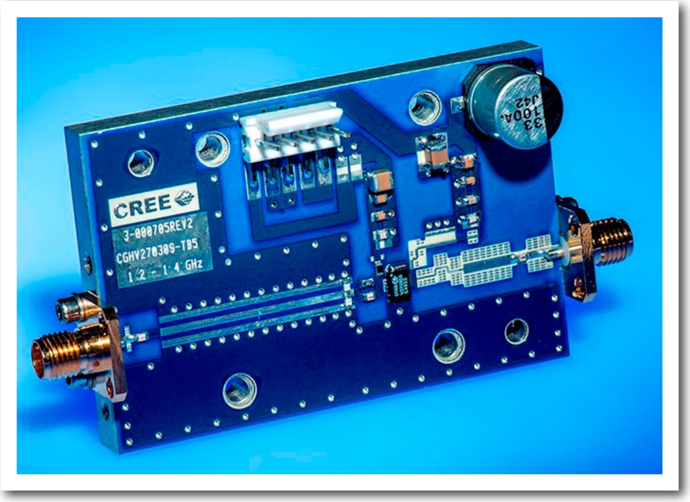
Frequency (MHz)	Z Source	Z Load
1200	8.6 + j5.4	25.4 + j29.2
1300	8.7 + j5.1	27.6 + j30.5
1400	7.4 + j5.2	30.1 + j31.8

Note[1]: V_{DD} = 50 V, I_{DQ} = 0.125 A in the DFN package.
Note[2]: Impedances are extracted from the CGHV27030S-AMP5 application circuit and are not source and load pull data derived from the transistor

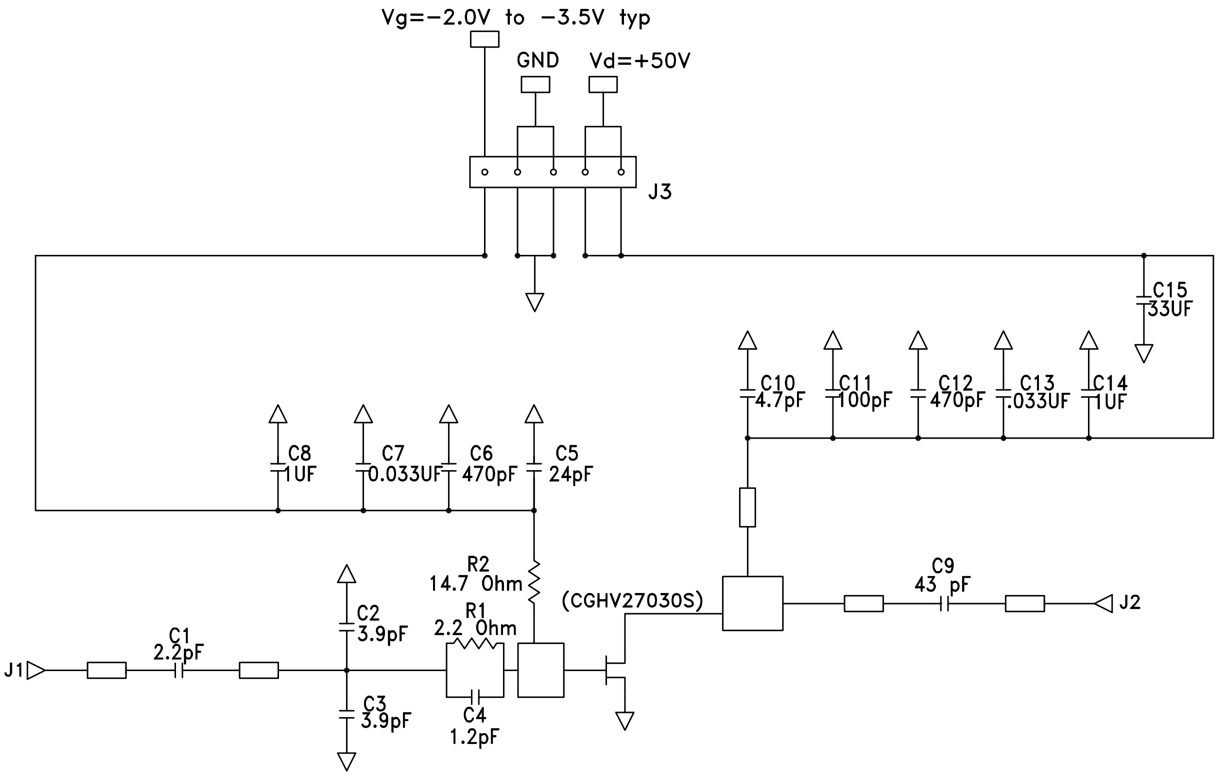
CGHV27030S-AMP5 Bill of Materials

Designator	Description	Qty
R1	RES, 2.2, OHM, 1/10W 5% 0603 SMD	1
R2	RES, 1/16W, 0603, 1%, 14.7 OHMS	1
C1	CAP, 2.2 pF, +/-0.1 pF, 0603, ATC	1
C2, C3	CAP, 3.9 pF, +/-0.1 pF, 0603, ATC	2
C4	CAP, 1.2 pF, +/-0.1 pF, 0603, ATC	1
C5	CAP, 24 pF, +/-5%, 0603, ATC	1
C6, C12	CAP, 470 pF, 5%, 100V, 0603, X	2
C7, C13	CAP, 33000 pF, 0805, 100V, Z7R	2
C8, C14	CAP, 1.0 UF, 100V, 10%, X7R, 1210	2
C9	CAP, 43 pF, +/-5%, 0603, ATC	1
C10	CAP, 4.7 pF, +/-0.1 pF, 0603, ATC600S	1
C11	CAP, 100.0 pF, +/-5%, 0603, ATC	1
C15	CAP, 33 UF, 20%, G CASE	
J1, J2	CONN, SMA, PANEL MOUNT JACK, FLANGE, 4-HOLE, BLUNT POST	2
PCB	PCB, RO4350, L-BAND, 1.7" X 2.6"	1
J3	HEADER RT>PLZ .1CEN LK 5POS	1
Q1	CGHV27030S, QFN	1

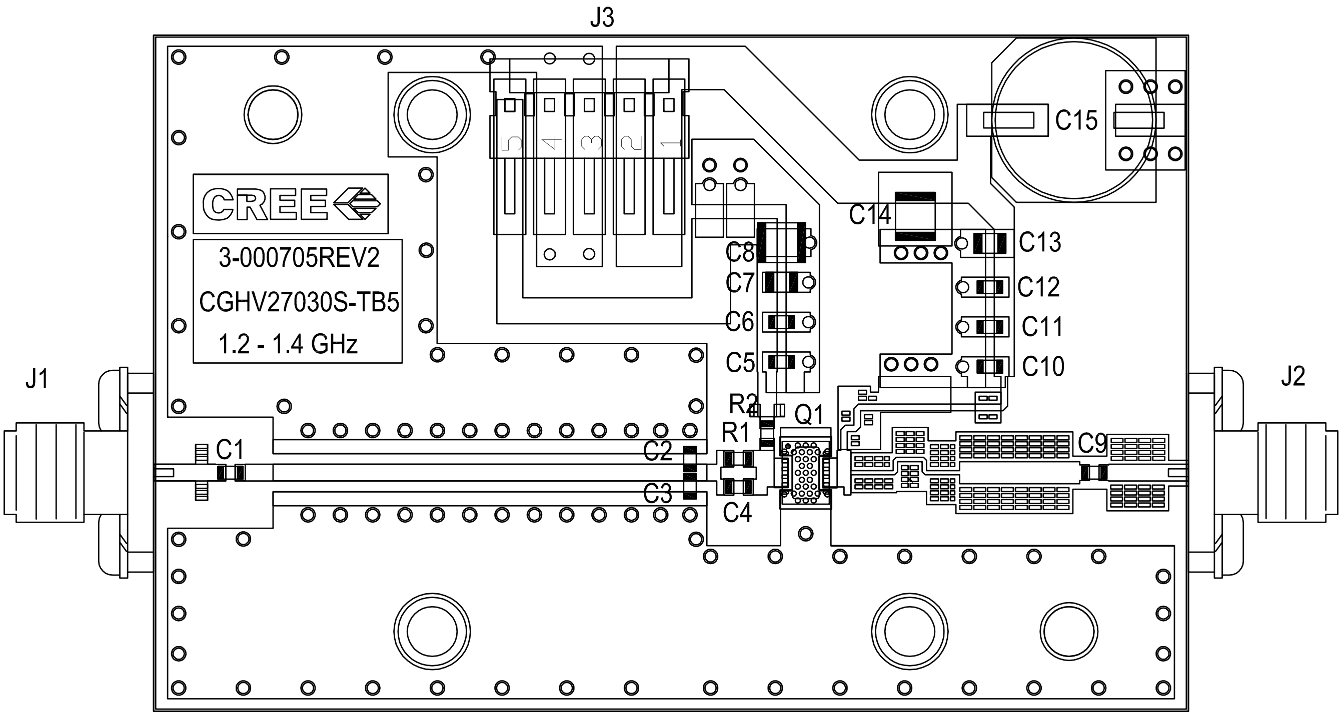
CGHV27030S-AMP5 Application Circuit



CGHV27030S-AMP5 Application Circuit Schematic, 50 V

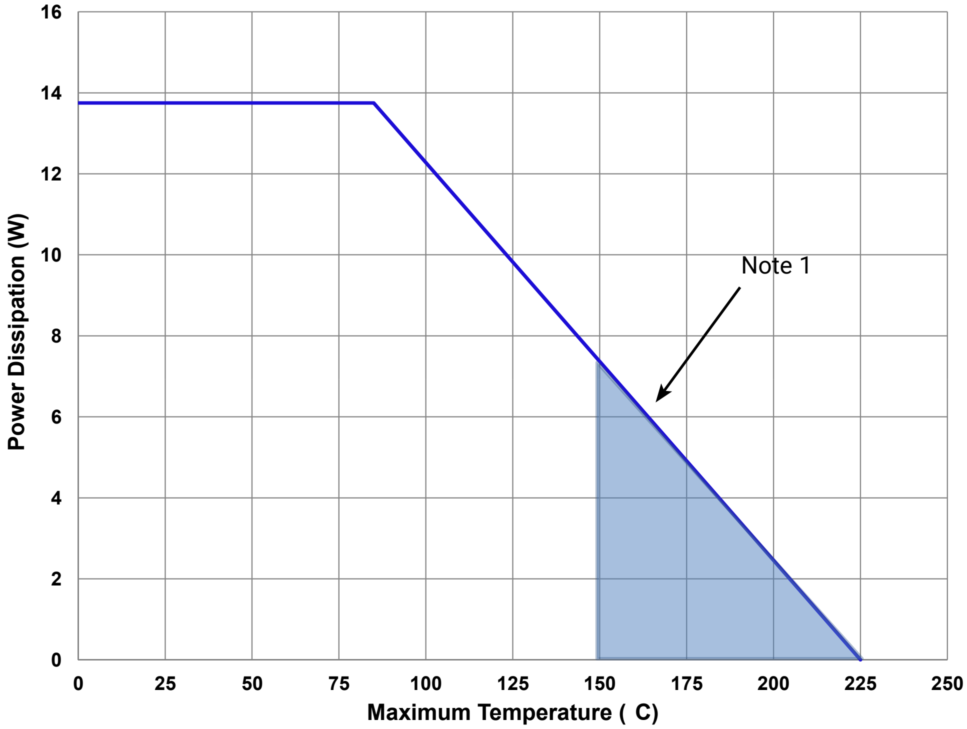


CGHV27030S-AMP5 Application Circuit Outline, 50 V



CGHV27030S Power Dissipation De-rating Curve

Figure 16. - CGHV27030S Power Dissipation De-Rating Curve



Note 1. Area exceeds Maximum Case Temperature (See Page 2).

Electrostatic Discharge (ESD) Classifications

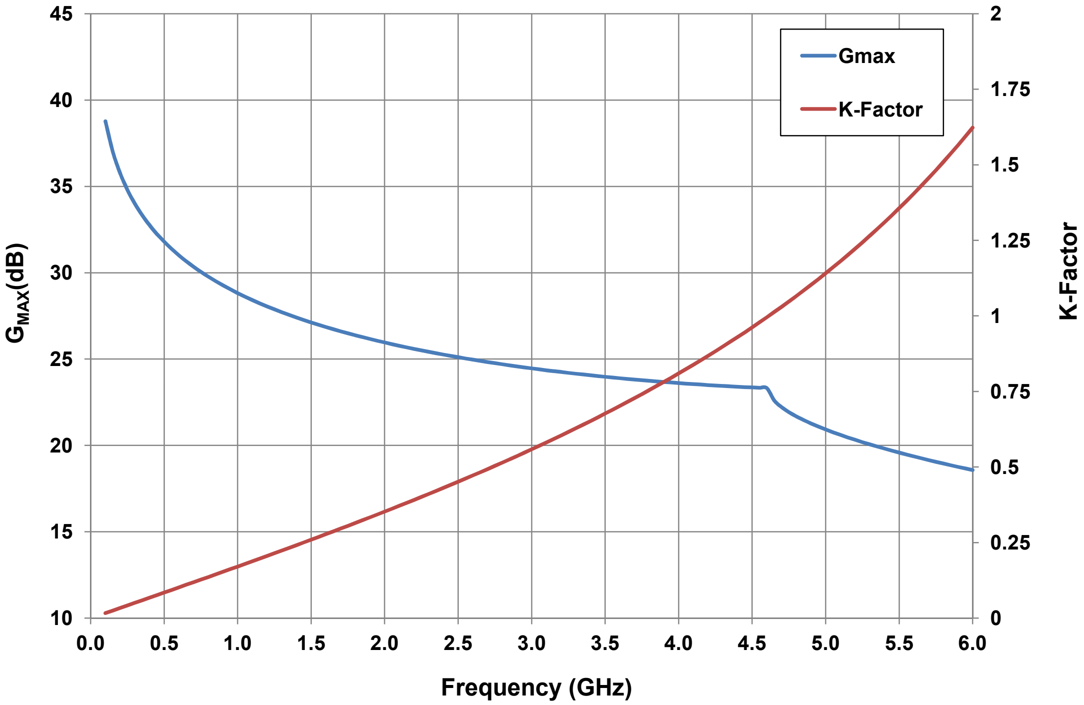
Parameter	Symbol	Class	Test Methodology
Human Body Model	HBM	1A (> 250 V)	JEDEC JESD22 A114-D
Charge Device Model	CDM	2 (125 V to 250 V)	JEDEC JESD22 C101-C

Moisture Sensitivity Level (MSL) Classification

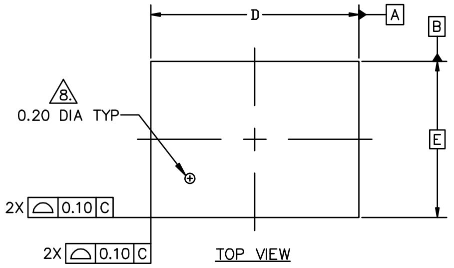
Parameter	Symbol	Level	Test Methodology
Moisture Sensitivity Level	MSL	3 (168 hours)	IPC/JEDEC J-STD-20

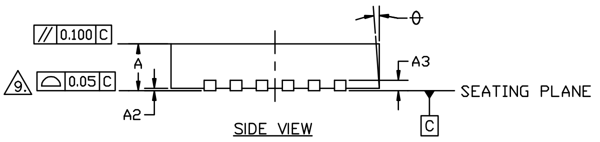
Typical Performance

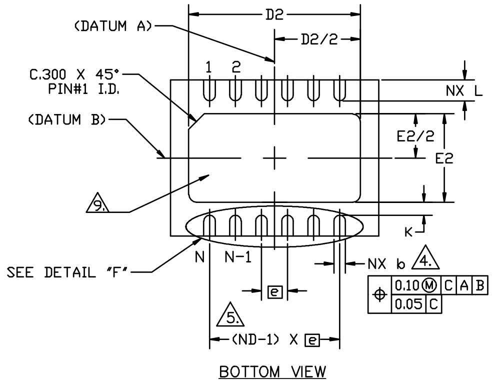
G_{MAX} and K-Factor vs Frequency
V_{DD} = 50 V, I_{DQ} = 130 mA, Tcase = 25°C

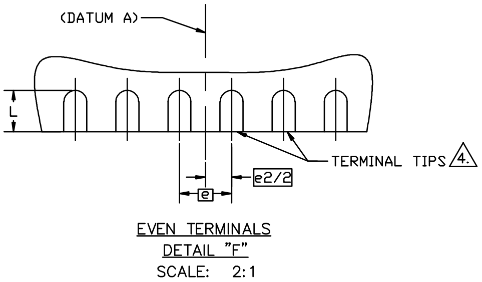


Product Dimensions CGHV27030S (Package 3 x 4 DFN)







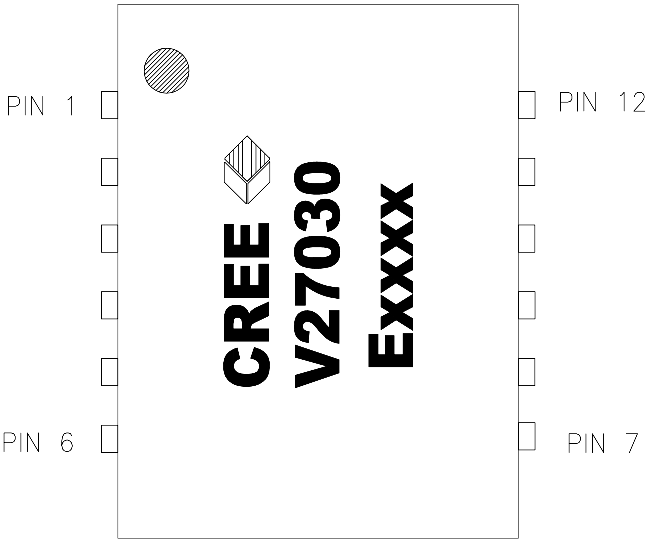


NOTES :

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M — 1994.
2. ALL DIMENSIONS ARE IN MILLIMETERS, θ IS IN DEGREES.
3. N IS THE TOTAL NUMBER OF TERMINALS.
4. DIMENSION b APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN .15 AND .30mm FROM TERMINAL TIP. IF THE TERMINAL HAS THE OPTIONAL RADIUS ON THE OTHER END OF THE TERMINAL, THE DIMENSION b SHOULD NOT BE MEASURED IN THAT RADIUS AREA.
5. ND REFERS TO THE NUMBER OF TERMINALS ON D SIDE
6. MAXIMUM PACKAGE WARPAGE IS .05 mm.
7. MAXIMUM ALLOWABLE BURRS IS .076 mm IN ALL DIRECTIONS.
8. PIN #1 ID ON TOP WILL BE LASER MARKED.
9. UNILATERAL COPLANARITY ZONE APPLIES TO THE EXPOSED HEAT SINK SLUG AS WELL AS THE TERMINALS.

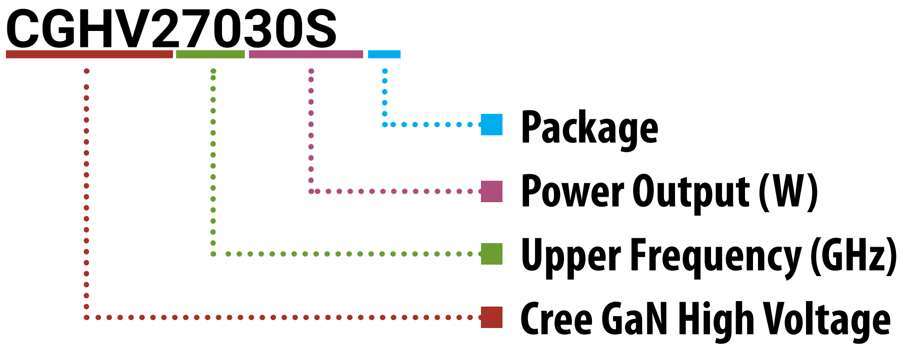
SYMBOL	COMMON DIMENSIONS			NOTE
	MIN.	NOM.	MAX.	
A	0.80	0.85	0.90	
A1	0.00	0.02	0.05	
A3	0.203 REF.			
θ	0	——	12	2
D	4.00 BSC			
E	3.00 BSC			
e	0.50 BSC			
N	6			3
ND	12			5
L	0.35	0.40	0.45	
b	0.17	0.22	0.27	4
D2	3.20	3.30	3.40	
E2	1.60	1.7	1.80	
K	0.20	——	——	

Pin	Input/Output
1	GND
2	NC
3	RF IN
4	RF IN
5	NC
6	GND
7	GND
8	NC
9	RF OUT
10	RF OUT
11	NC
12	GND



Note: Leadframe finish for 3x4 DFN package is Nickel/Palladium/Gold. Gold is the outer layer.

Part Number System



Parameter	Value	Units
Upper Frequency[1]	2.7	GHz
Power Output	30	W
Package	Surface Mount	-

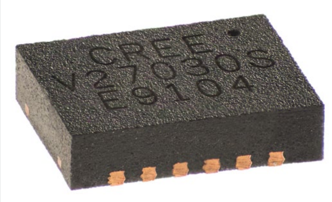
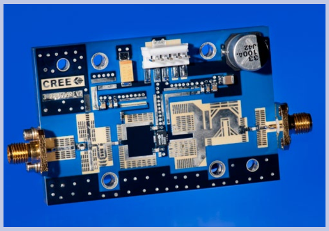
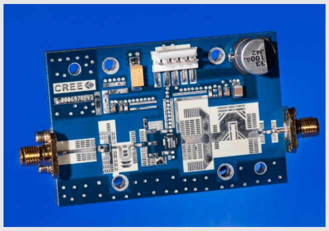
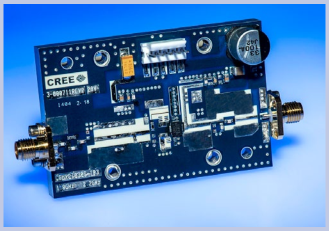
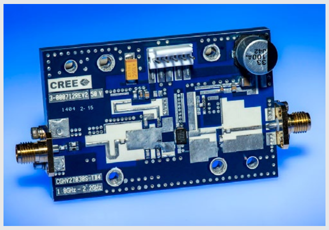
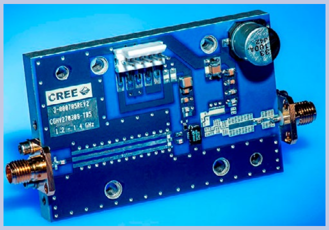
Table 1.

Note[1]: Alpha characters used in frequency code indicate a value greater than 9.9 GHz. See Table 2 for value.

Character Code	Code Value
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7
J	8
K	9
Examples:	1A = 10.0 GHz 2H = 27.0 GHz

Table 2.

Product Ordering Information

Order Number	Description	Unit of Measure	Image
CGHV27030S	GaN HEMT	Each	
CGHV27030S-AMP1	Test board without GaN HEMT, 50 V 2.5-2.7 GHz	Each	
CGHV27030S-AMP2	Test board with GaN HEMT installed 28 V 2.5-2.7 GHz	Each	
CGHV27030S-AMP3	Test board with GaN HEMT installed 28 V 1.8-2.2 GHz	Each	
CGHV27030S-AMP4	Test board with GaN HEMT installed 50 V 1.8-2.2 GHz	Each	
CGHV27030S-AMP5	Test board with GaN HEMT installed 50 V 1.2-1.4 GHz	Each	
CGHV27030S-TR	Delivered in Tape ard Reel	250 parts / reel	

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For more information, please contact:

Cree, Inc.
4600 Silicon Drive
Durham, North Carolina, USA 27703
www.cree.com/rf

Sarah Miller
Marketing
Cree, RF Components
1.919.407.5302

Ryan Baker
Marketing & Sales
Cree, RF Components
1.919.407.7816

Tom Dekker
Sales Director
Cree, RF Components
1.919.313.5639