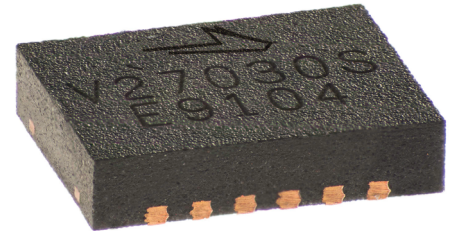


CGHV27030S

30 W, DC - 6.0 GHz, GaN HEMT

Description

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.



Package Type: 3x4 DFN
PN: CGHV27030S

Typical Performance 2.5-2.7 GHz ($T_c = 25^\circ\text{C}$), 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 @ $P_{AVE} = 5\text{ W}$	-34.5	-35.0	-34.0	dBc
Drain Efficiency @ $P_{AVE} = 5\text{ W}$	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

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			28 V
CGHV27030S-AMP3	1.8 - 2.2 GHz		50 V
CGHV27030S-AMP4			50 V
CGHV27030S-AMP5	1.2 - 1.4 GHz		50 V



Large Signal Models Available for ADS and MWO





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

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

Notes:

¹ Current limit for long term, reliable operation

² Refer to the Application Note on soldering at wolfspeed.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

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

The $R_{\theta TH}$ for Wolfspeed'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 $R_{\theta TH}$ from the heat sink to the junction is 6.18°C + 3.9°C = 10.08°C/W

Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Characteristics	Symbol	Min.	Typ.	Max.	Units	Conditions
DC Characteristics¹						
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	—		$V_{DS} = 50$ V, $I_D = 0.13$ mA
Saturated Drain Current	I_{DS}	2.6	3.7	—	A	$V_{DS} = 6.0$ V, $V_{GS} = 2.0$ V
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	125	—	—	V_{DC}	$V_{GS} = -8$ V, $I_D = 4$ mA
RF Characteristics³ ($T_C = 25^\circ\text{C}$, $F_0 = 2.65$ GHz unless otherwise noted)						
Gain	G	20	23	—	dB	$V_{DD} = 50$ V, $I_{DQ} = 0.13$ A, $P_{IN} = 10$ dBm
Output Power ⁴	P_{OUT}	44.5	45	—	dBm	$V_{DD} = 50$ V, $I_{DQ} = 0.13$ A, $P_{IN} = 28$ dBm
Drain Efficiency ⁴	η	64	73	—	%	
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	—		
Feedback Capacitance	C_{GD}	—	0.12	—		

Notes:

¹ Measured on wafer prior to packaging

² Scaled from PCM data

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

⁴ Un-modulated Pulsed Signal 100 μ s, 10% duty cycle

⁵ Includes package parasitics



Typical Performance in Application Circuit CGHV27030S-AMP1

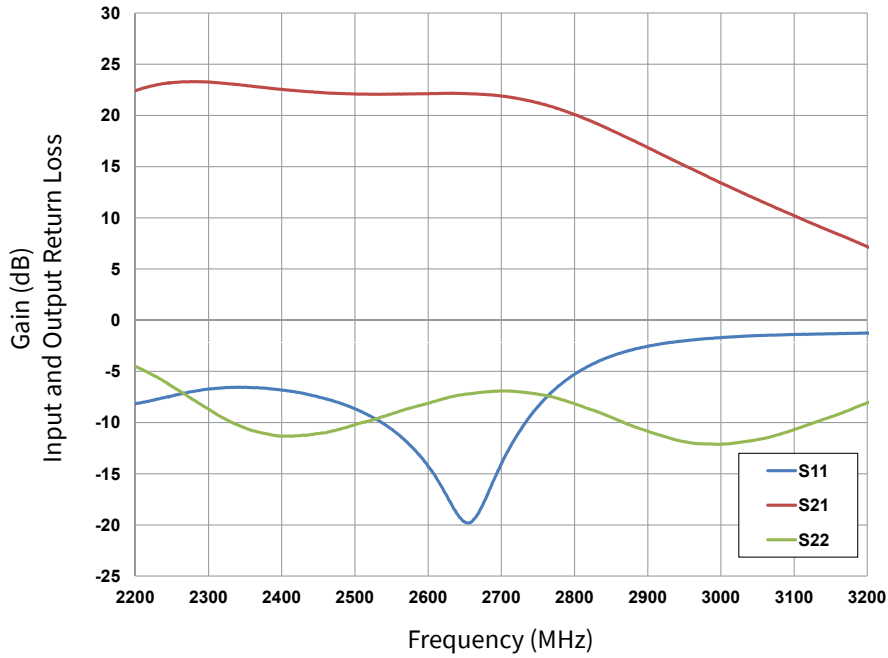


Figure 1. Small Signal Gain and Return Losses vs Frequency
 $V_{DD} = 50\text{ V}, I_{DQ} = 0.13\text{ A}$

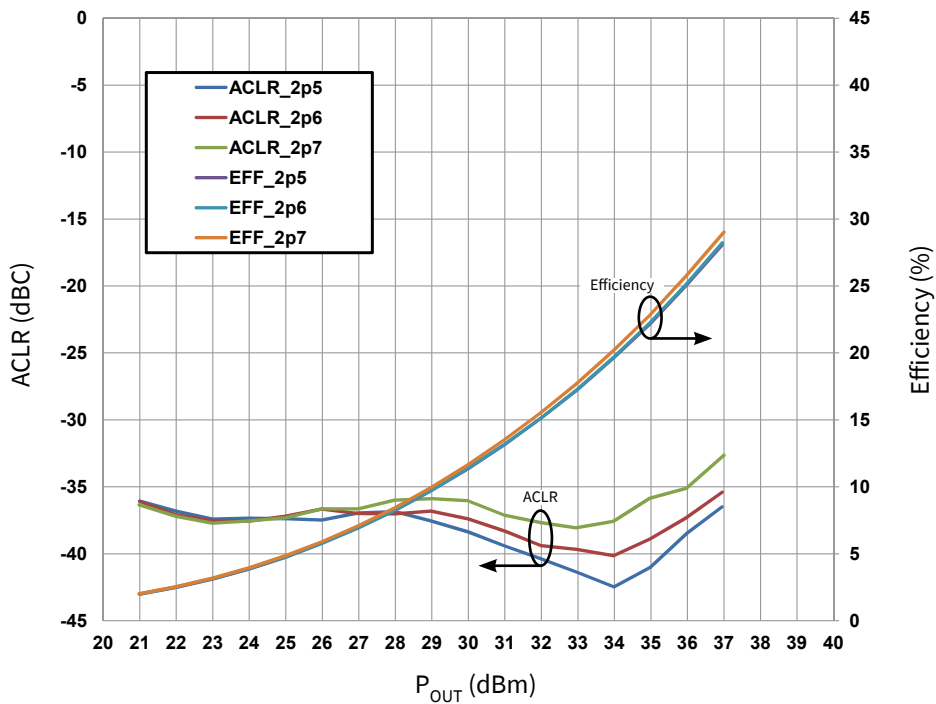


Figure 2. Typical Drain Efficiency and ACLR vs. Output Power
 $V_{DD} = 50\text{ V}, I_{DQ} = 0.13\text{ A}, 1\text{c WCDMA}, \text{PAR} = 7.5\text{ dB}$

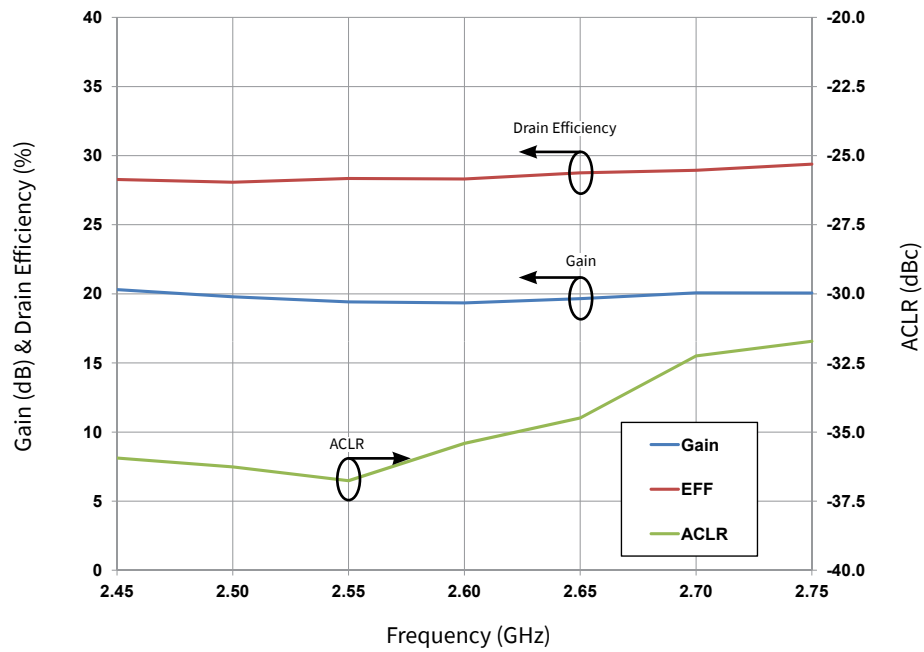
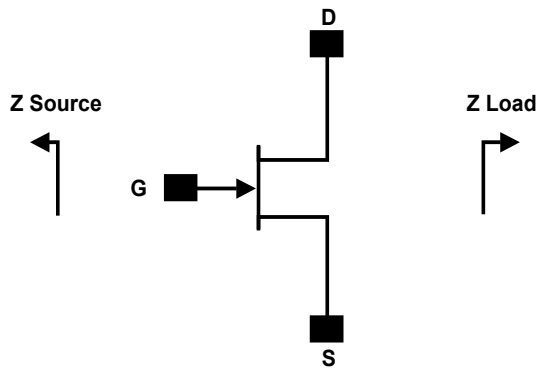
Typical Performance in Application Circuit CGHV27030S-AMP1

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



Source and Load Impedances for Application Circuit CGHV27030S-AMP1



Frequency (MHz)	Z Source	Z Load
2500	5.69 + j7.82	10.9 + j15.7
2600	2.8 - j1.1	11.5 + j16.7
2700	2.5 - j1.7	12.1 + j17.7

Notes:

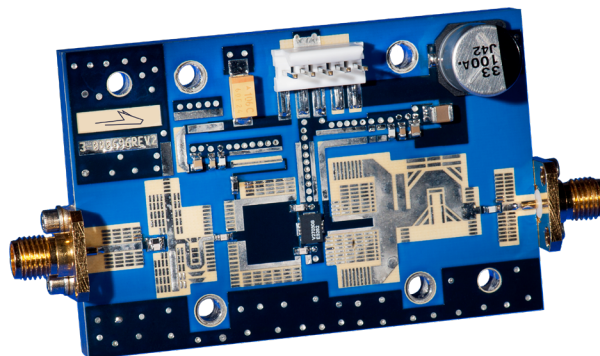
¹ $V_{DD} = 50\text{ V}$, $I_{DQ} = 0.13\text{ A}$ in the DFN package

² Impedances are extracted from the CGHV27030S-AMP1 application circuit and are not source and load pull data derived from the transistor

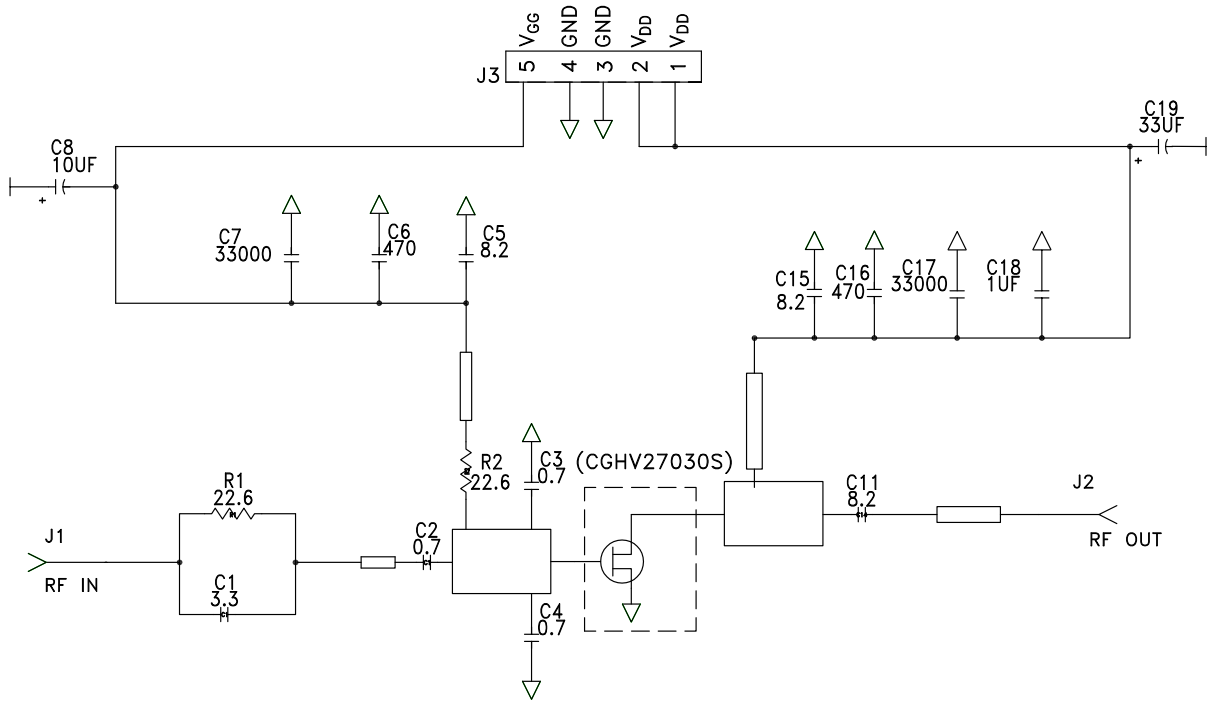
CGHV27030S-AMP1 Bill of Materials

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 μF, 100 V, 10%, X7R, 1210	1
C8	CAP, 10 μF, 16 V, TANTALUM	1
C19	CAP, 33 μF, 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

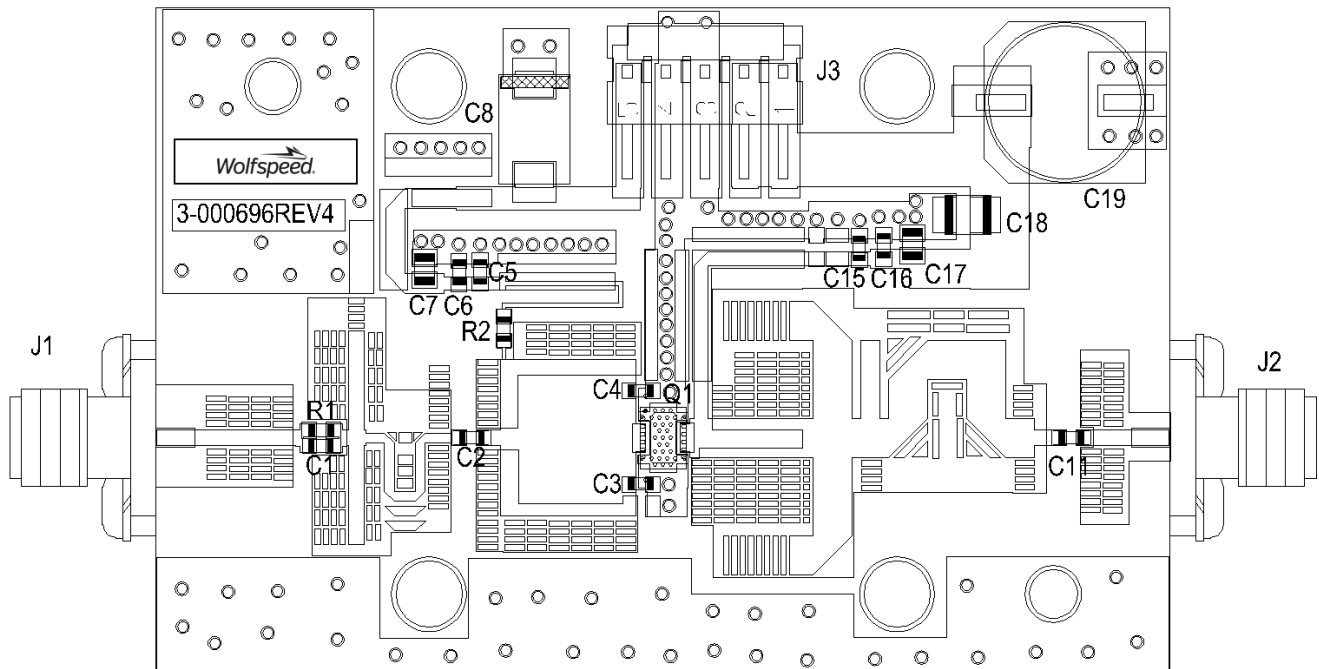
CGHV27030S -AMP1 Application Circuit



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 @ $P_{AVE} = 3.2$ W	-42.0	-41.7	-41.2	dBc
Drain Efficiency @ $P_{AVE} = 3.2$ W	33.5	34.2	34.1	%
Input Return Loss	-9.0	-8.8	-10.2	dB

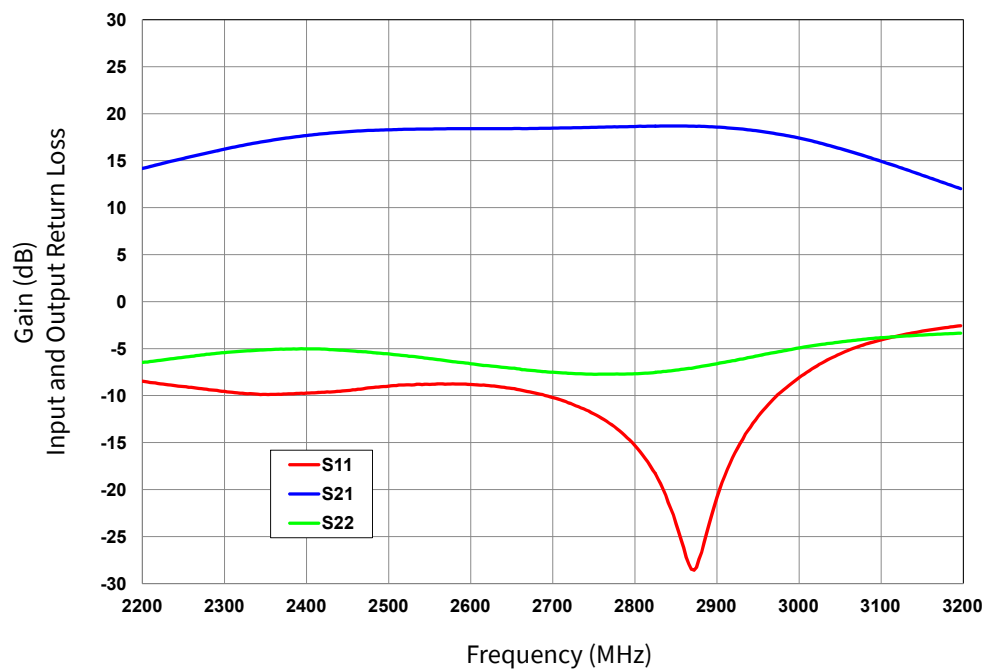


Figure 4. Small Signal Gain and Return Losses vs Frequency

$$V_{DD} = 28 \text{ V}, I_{DQ} = 0.13 \text{ A}$$



Typical Performance in Application Circuit CGHV27030S-AMP2

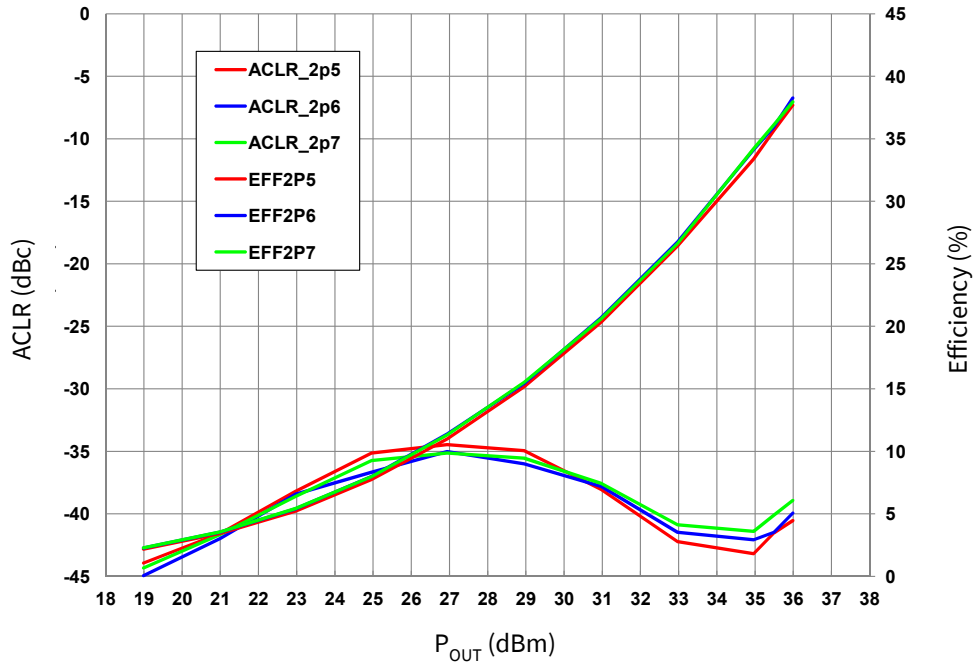


Figure 5. Typical Drain Efficiency and ACLR vs. Output Power
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 0.13\text{ A}$, 1c WCDMA, PAR = 7.5 dB

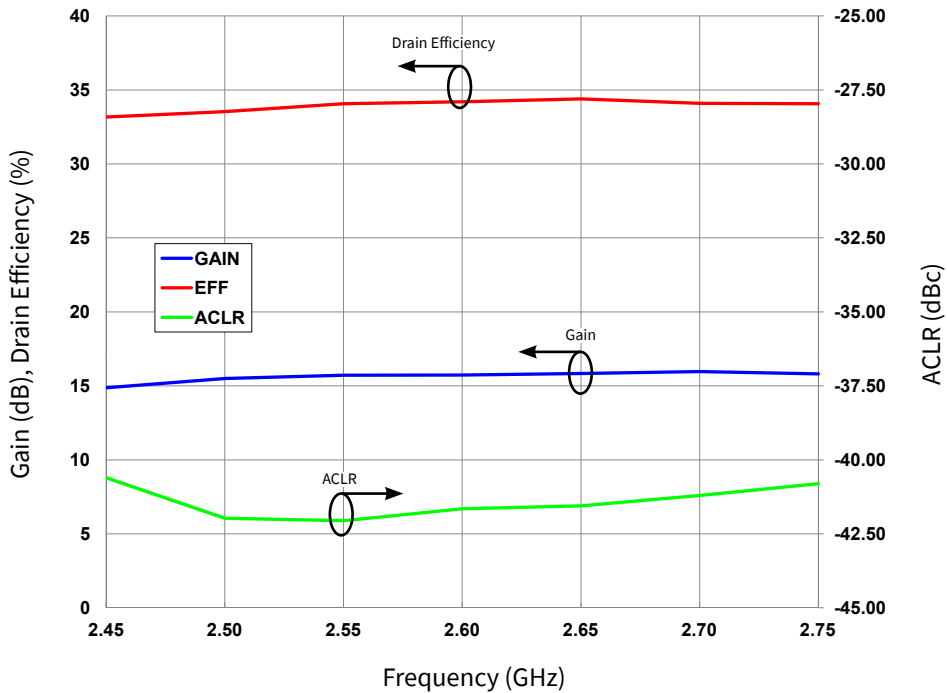
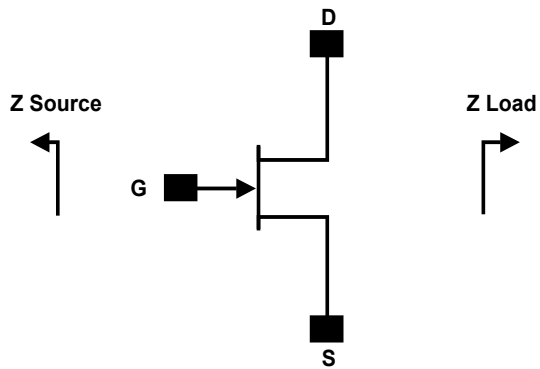


Figure 6. Typical Gain, Drain Efficiency and ACLR vs Frequency
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 0.13\text{ A}$, $P_{AVE} = 3.2\text{ W}$, 1c WCDMA, PAR = 7.5 dB



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

Notes:

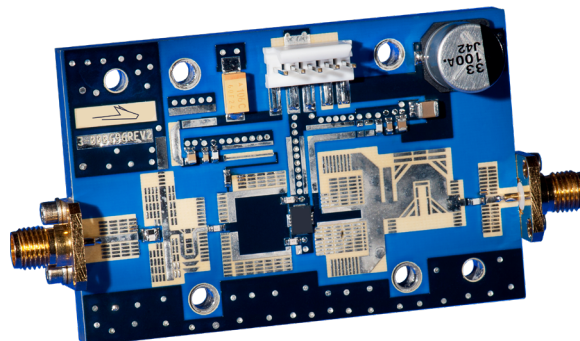
¹ $V_{DD} = 28\text{ V}$, $I_{DO} = 0.13\text{ A}$ in the DFN package

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

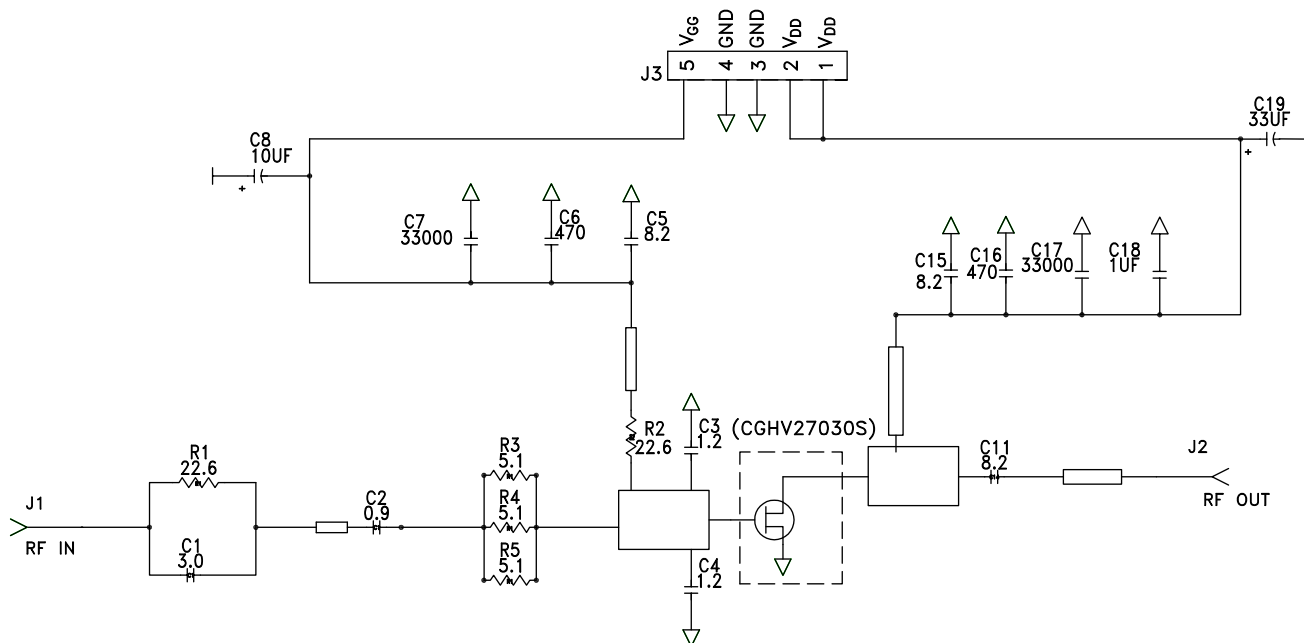
Designator	Description	Qty
R1, R2	RES, 22.6 ohm, +/-1%, 1/16W, 0603	2
C1	CAP, 3.0 pF, $\pm 0.1\text{ pF}$, 0603, ATC	1
C2	CAP, 0.9 pF, $\pm 0.05\text{ pF}$, 0603, ATC	3
R3, R4, R5	RES, 1/16W, 0603, 1%, 5.1% ohms	3
C3, C4	CAP, 1.2 pF, $\pm 0.1\text{ pF}$, 0603, ATC	2
C5, C11, C15	CAP, 8.2 pF, $\pm 0.25\text{ pF}$, 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 μF , 100 V, 10%, X7R, 1210	1
C8	CAP, 10 μF , 16 V TANTALUM	1
C19	CAP, 33 μF , 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

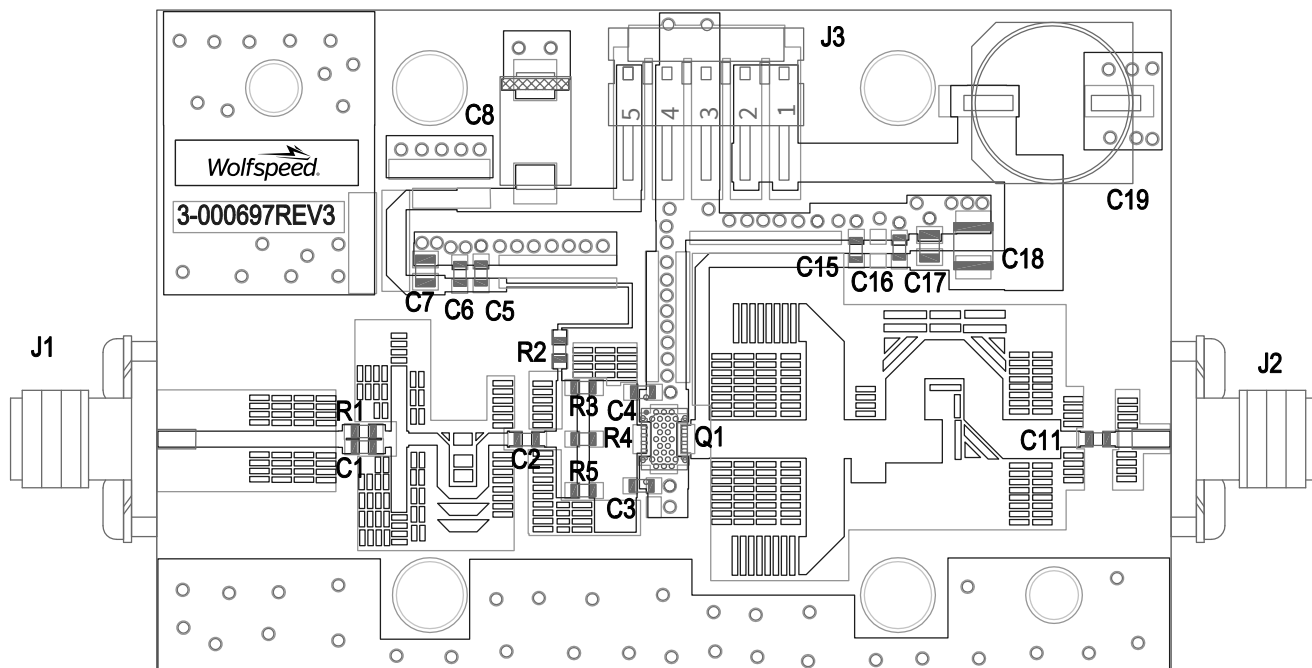




CGHV27030S-AMP2 Application Circuit Schematic, 28 V



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 @ $P_{AVE} = 3.2$ W	-37	-38	-39	dBc
Drain Efficiency @ $P_{AVE} = 3.2$ W	35	35	33	%
Input Return Loss	5	6	7	dB

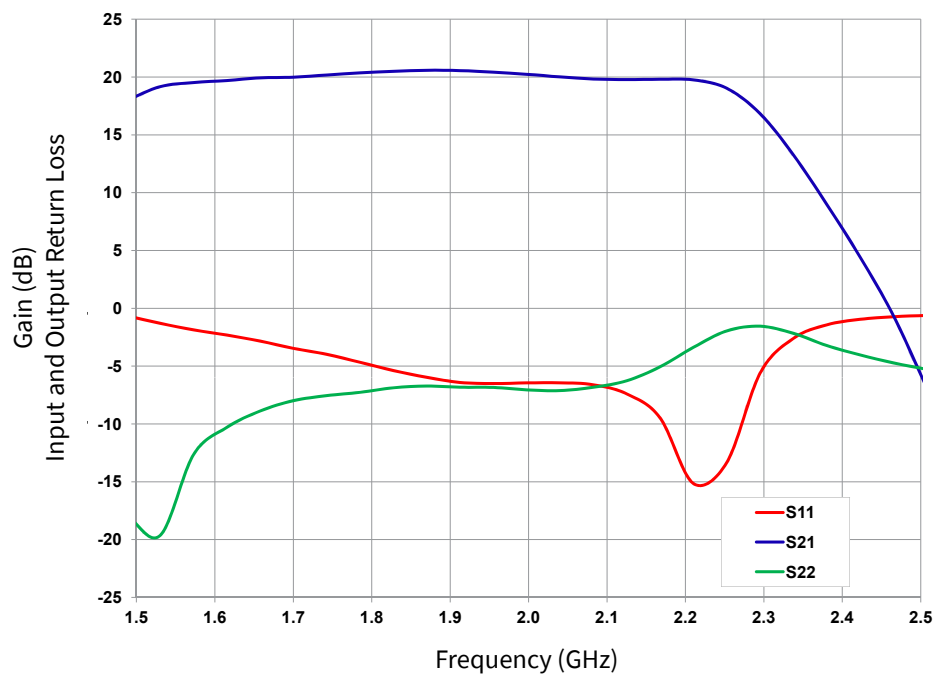


Figure 7. Small Signal Gain and Return Losses vs Frequency

$$V_{DD} = 28 \text{ V}, I_{DQ} = 0.13 \text{ A}$$



Typical Performance in Application Circuit CGHV27030S-AMP3

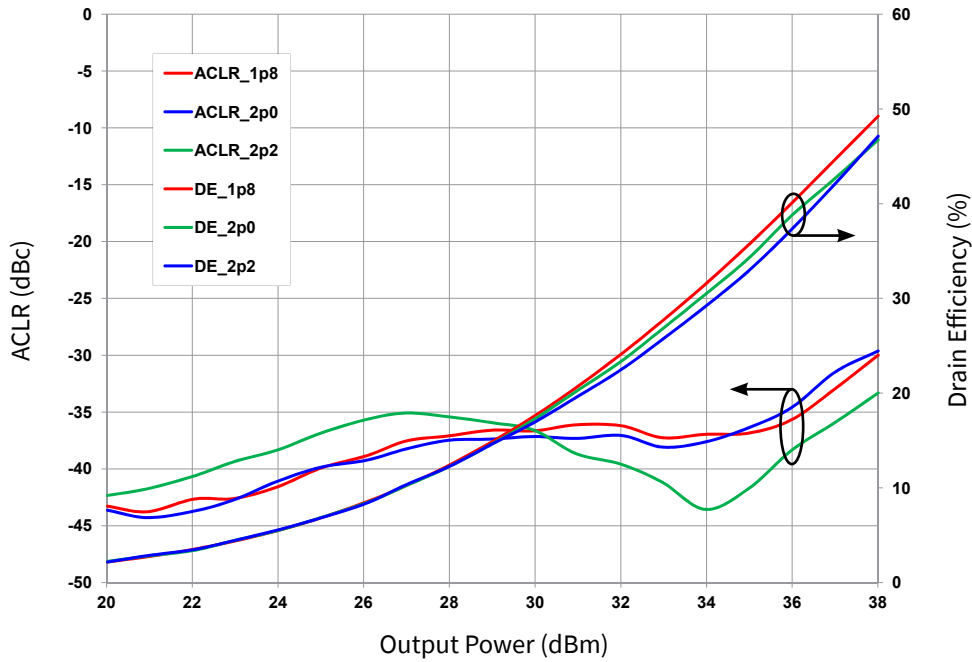


Figure 8. Typical Drain Efficiency and ACLR vs. Output Power
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 0.13\text{ A}$, 1c WCDMA, PAR = 7.5 dB

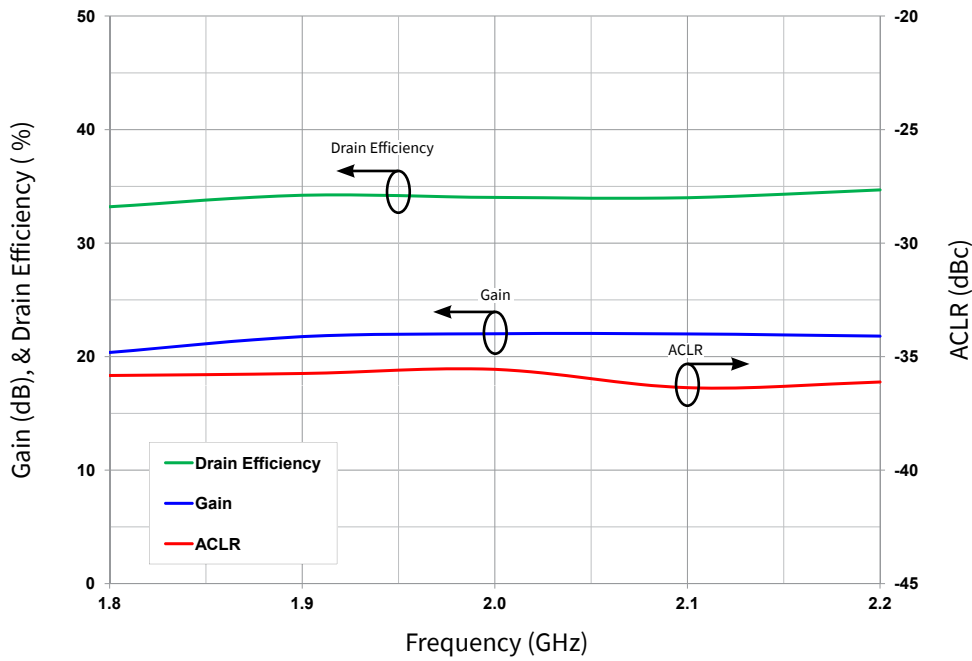
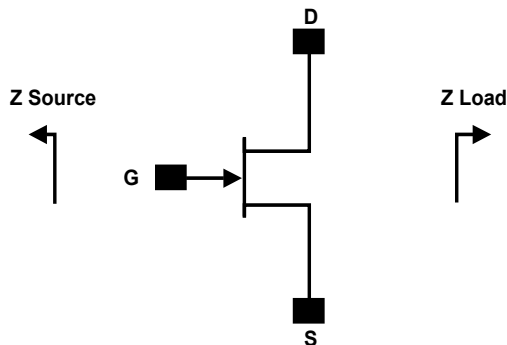


Figure 9. Typical Gain, Drain Efficiency and ACLR vs Frequency
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 0.13\text{ A}$, $P_{AVE} = 3.2\text{ W}$, 1c WCDMA, PAR = 7.5 dB



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

Notes:

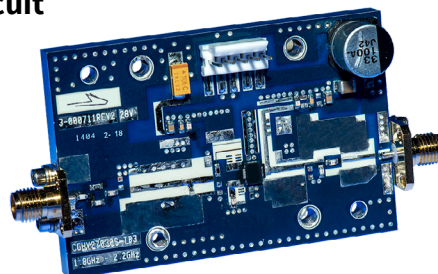
¹ $V_{DD} = 28\text{ V}$, $I_{DD} = 0.13\text{ A}$ in the DFN package

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

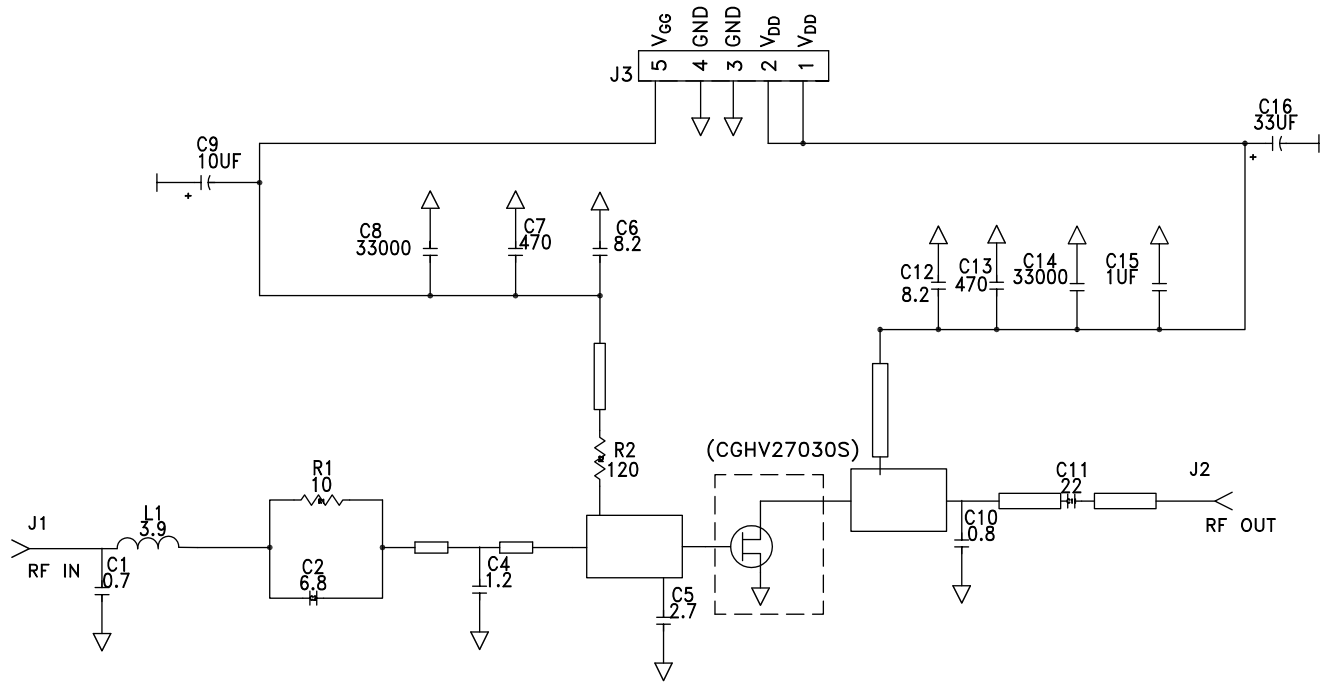
Designator	Description	Qty
R1	RES, 10 ohm, +/-1%, 1/16W, 0603	1
R2	RES, 120 ohm, +/-1%, 1/16W, 0603	1
L1	IND, 3.9 nH, +/-5%, 0603, JOHANSON	1
C1	CAP, 0.7 pF, +/-0.1 pF, 0603, ATC	1
C2	CAP, 6.8 pF, +/-5%, 0603, ATC	1
C3	CAP, 47 pF, +/-0.1 pF, 0603, ATC	1
C4	CAP, 1.5 pF, +/-0.1 pF, 0603, ATC	1
C5	CAP, 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 μF , 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 μF , 100V, 10%, X7R, 1210	1
C16	CAP, 33 μF , 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

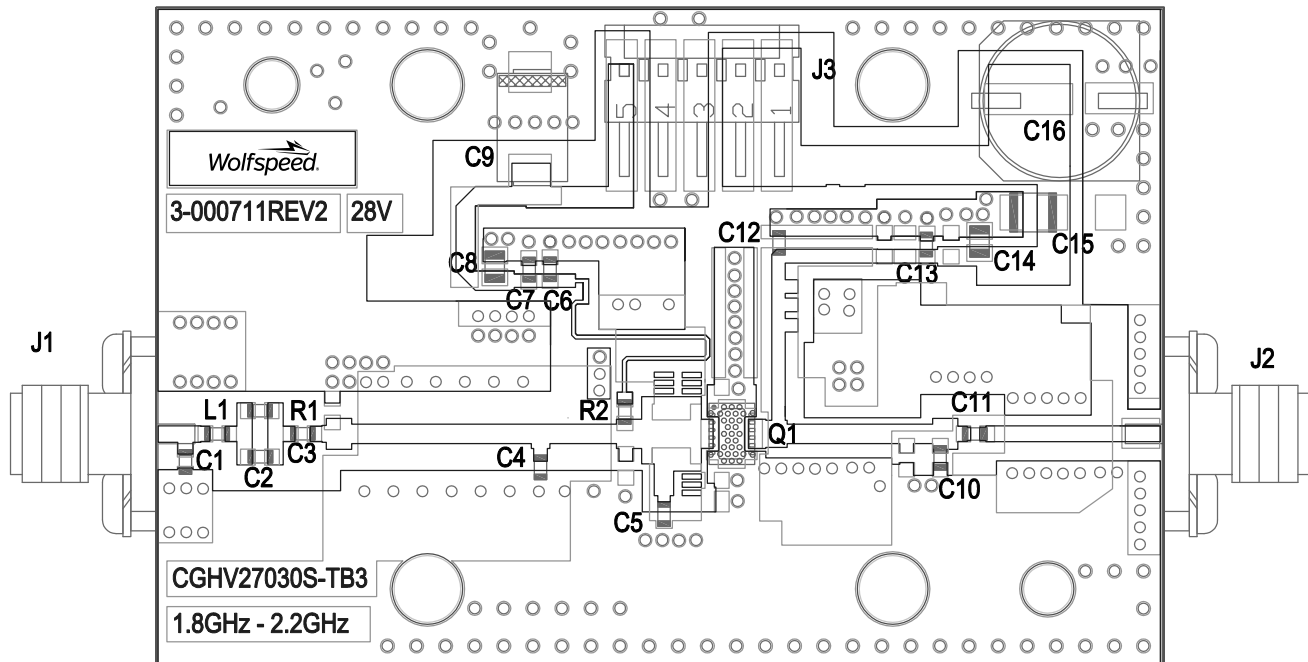




CGHV27030S-AMP3 Application Circuit Schematic, 28 V



CGHV27030S-AMP3 Application Circuit Outline, 28 V





Electrical Characteristics When Tested in CGHV27030S-AMP3, 28 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 @ $P_{AVE} = 5\text{ W}$	-39	-38	-37	dBc
Drain Efficiency @ $P_{AVE} = 5\text{ W}$	31	31	33	%
Input Return Loss	5	7	6	dB

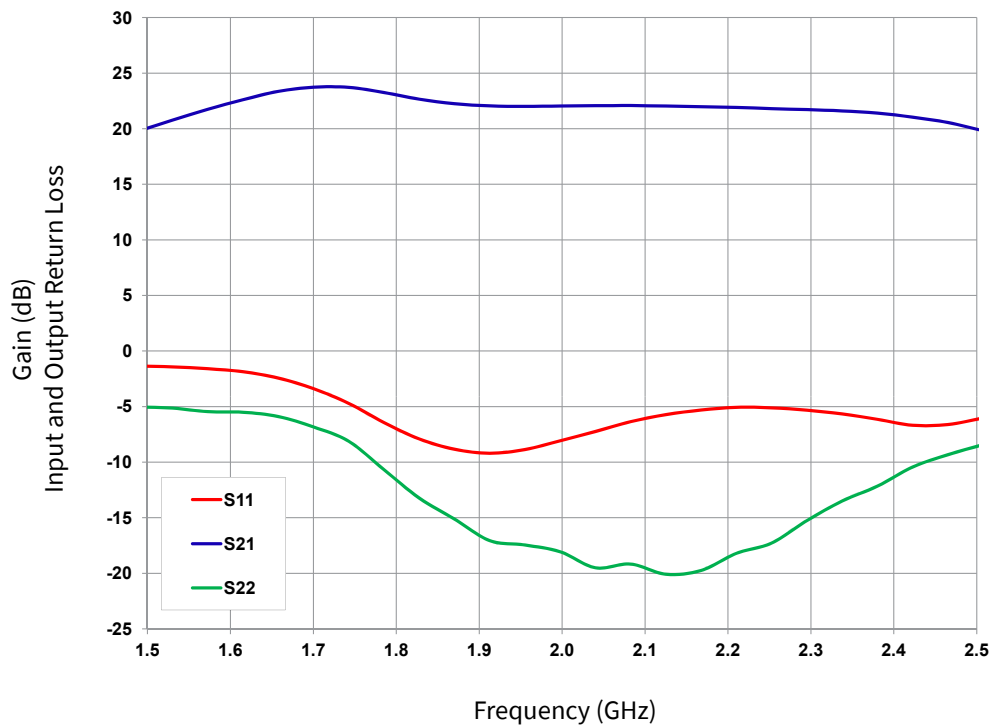


Figure 10. Small Signal Gain and Return Losses vs Frequency

$$V_{DD} = 50\text{ V}, I_{DQ} = 0.13\text{ A}$$



Typical Performance in Application Circuit CGHV27030S-AMP4

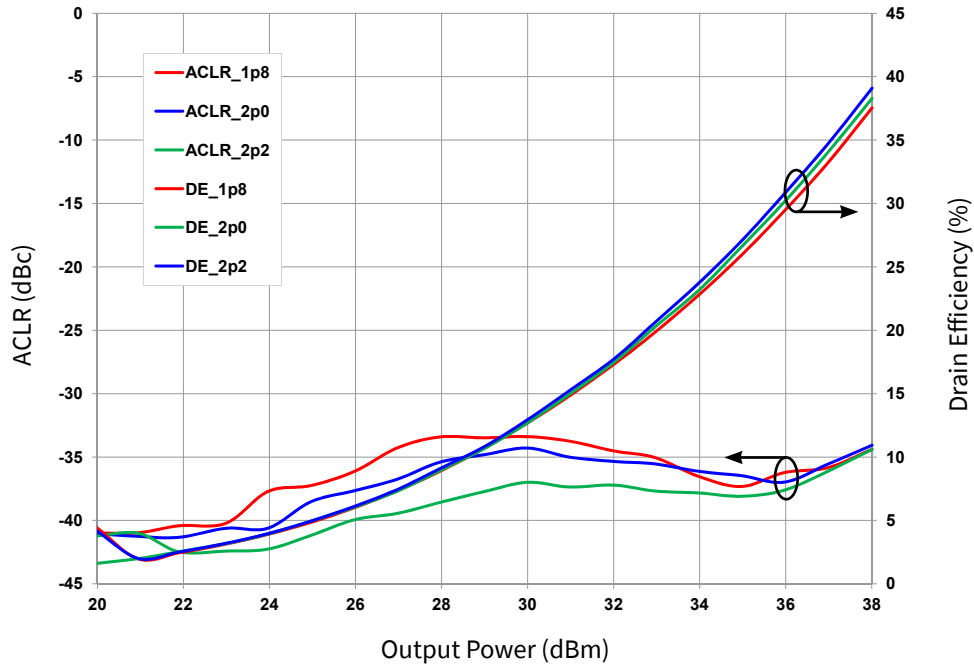


Figure 11. Typical Drain Efficiency and ACLR vs. Output Power
 $V_{DD} = 50\text{ V}$, $I_{DQ} = 0.13\text{ A}$, 1c WCDMA, PAR = 7.5 dB

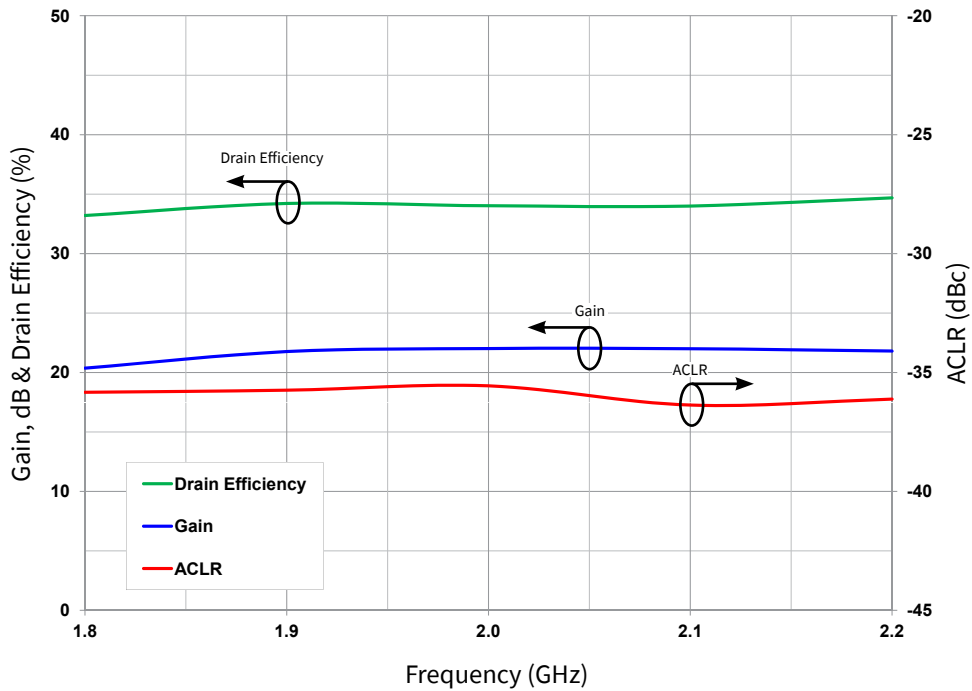
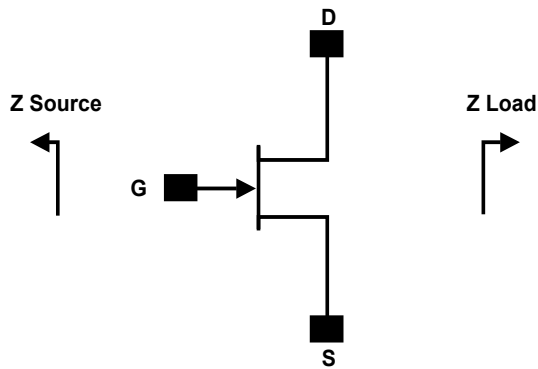


Figure 12. Typical Gain, Drain Efficiency and ACLR vs Frequency
 $V_{DD} = 50\text{ V}$, $I_{DQ} = 0.13\text{ A}$, $P_{AVE} = 5\text{ W}$, 1c WCDMA, PAR = 7.5 dB



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

Notes:

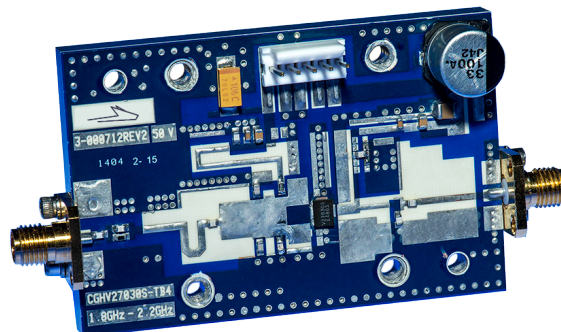
¹ $V_{DD} = 50\text{ V}$, $I_{DD} = 0.13\text{ A}$ in the DFN package

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

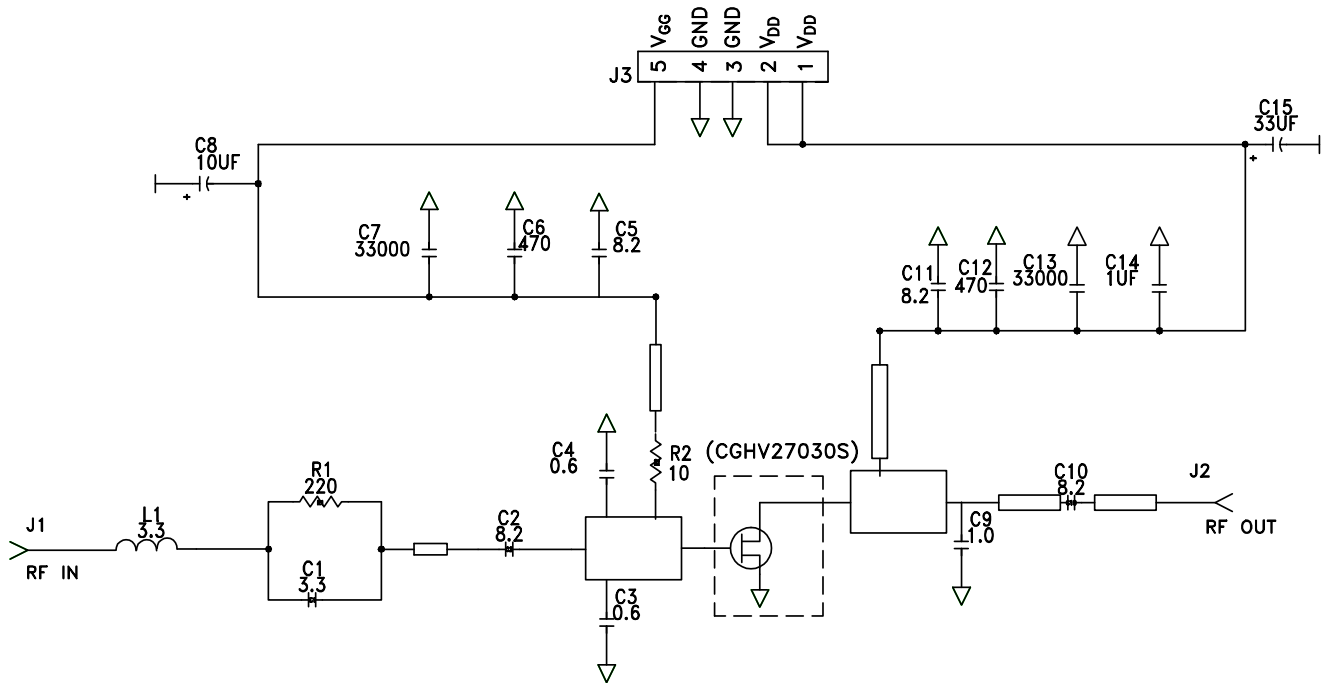
Designator	Description	Qty
R1	RES, 220 ohm, +/-1%, 1/16W, 0603	1
R2	RES, 10 ohm, +/-1%, 1/16W, 0603	1
L1	IND, 3.3 nH, +/-5%, 0603, JOHANSON	1
C1	CAP, 3.3 pF, +/-0.1 pF, 0603, ATC	1
C2, C5, C10, C11	CAP, 8.2 pF, +/-5%, 0603, ATC	1
C3, C4	CAP, 0.6 pF, +/-0.1 pF, 0603, ATC	2
C6, C12	CAP, 470 pF, 5%, 100V, 0603, X	2
C7, C13	CAP, 33000 pF, 0805, 100V, X7R	2
C8	CAP, 10 μF , 16 V, TANTALUM	1
C9	CAP, 1.0 pF, +/-0.1 pF, 0603, ATC	1
C14	CAP, 1.0 μF , 100V, 10%, X7R, 1210	1
C15	CAP, 33 μF , 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

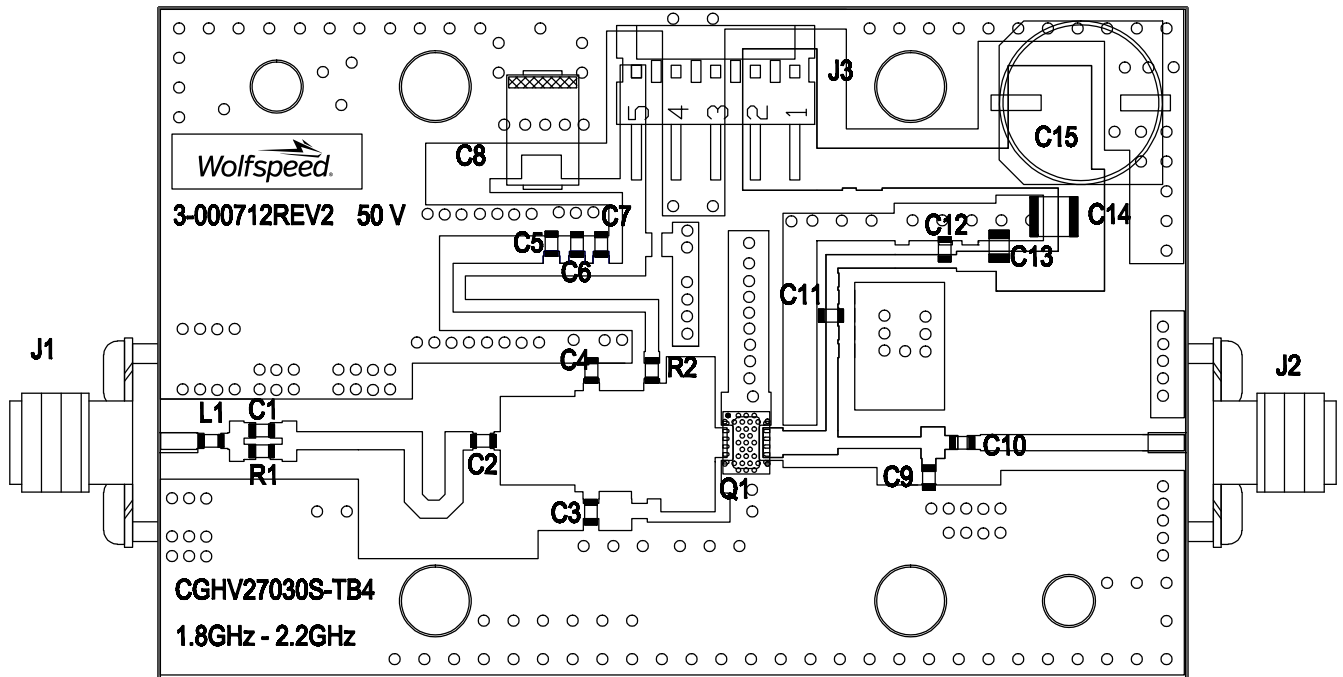




CGHV27030S-AMP4 Application Circuit Schematic, 50 V



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	%

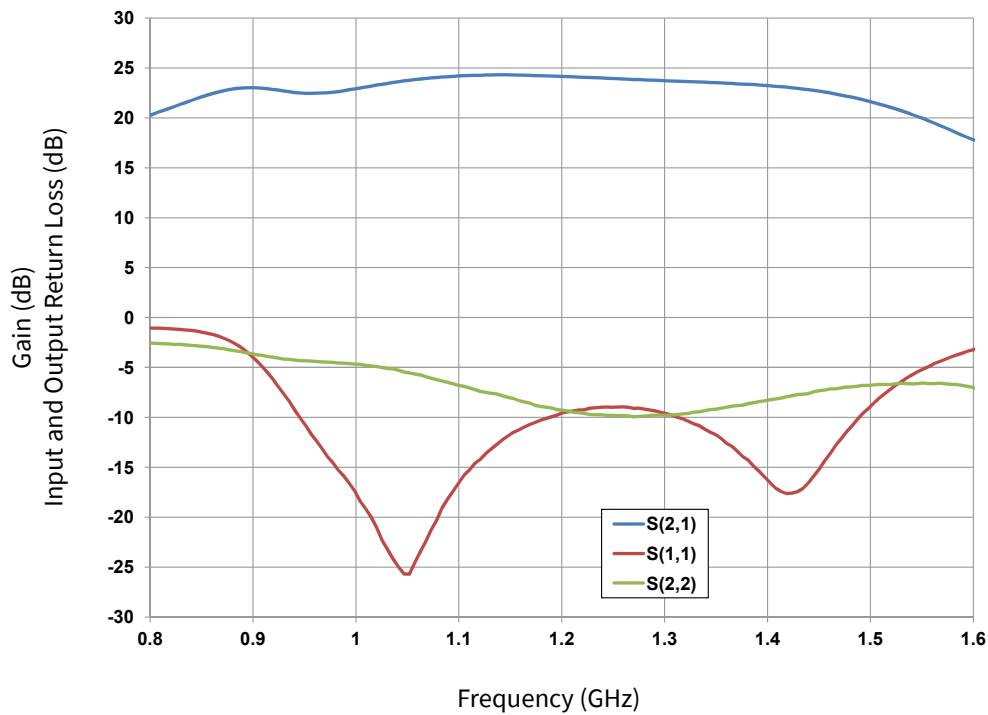


Figure 13. Small Signal Gain and Return Losses vs Frequency
 $V_{DD} = 50$ V, $I_{DQ} = 0.125$ A



Typical Performance in Application Circuit CGHV27030S-AMP5

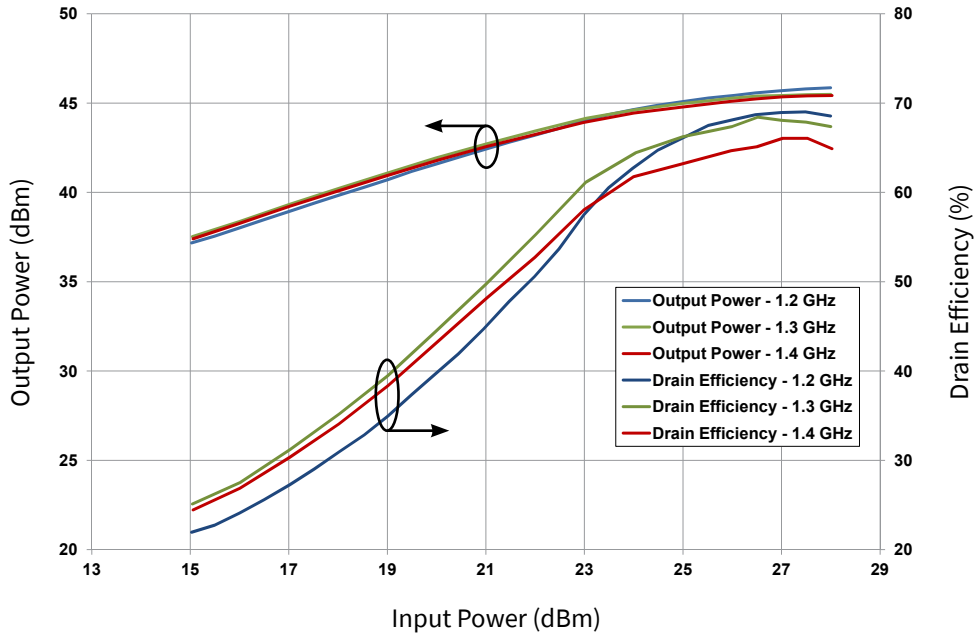


Figure 14. Typical Output Power and Drain Efficiency Input Power
 $V_{DD} = 50\text{ V}$, $I_{DQ} = 0.125\text{ A}$, Pulse Width = 100 us, Duty Cycle = 10%

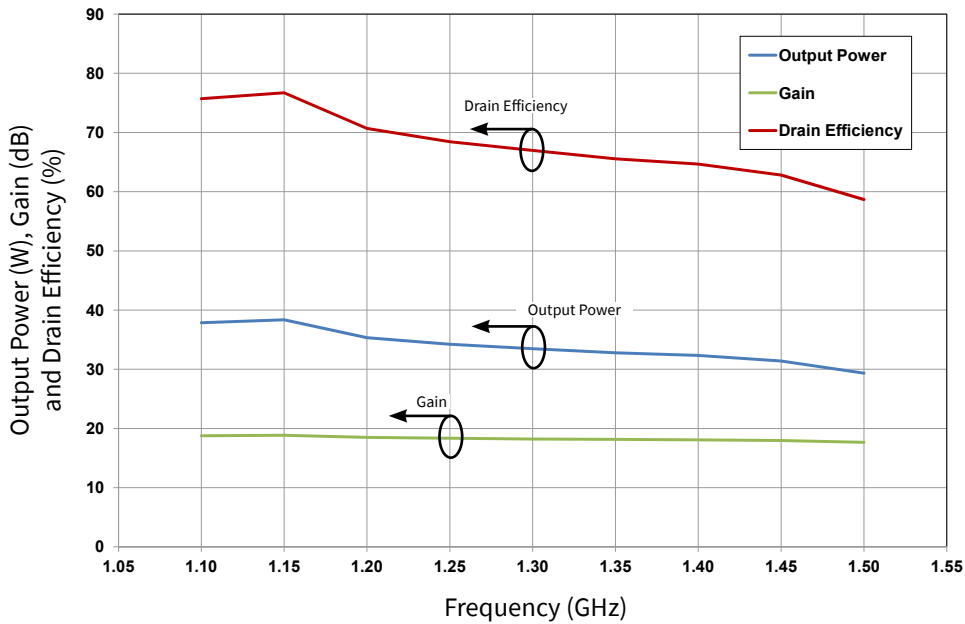
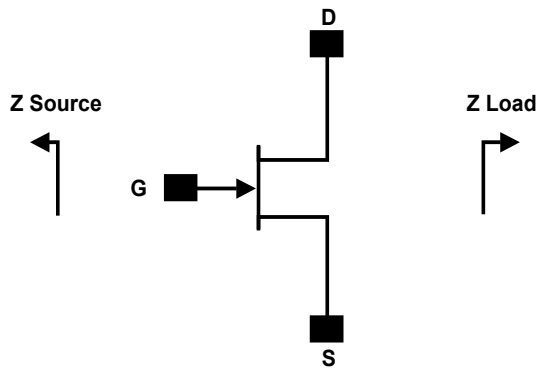


Figure 15. Typical Output Power, Gain, and Drain Efficiency vs Frequency
 $V_{DD} = 50\text{ V}$, $I_{DQ} = 0.125\text{ A}$, $P_{IN} = 27\text{ dBm}$, Pulse Width = 100 us, Duty Cycle = 10%



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

Notes:

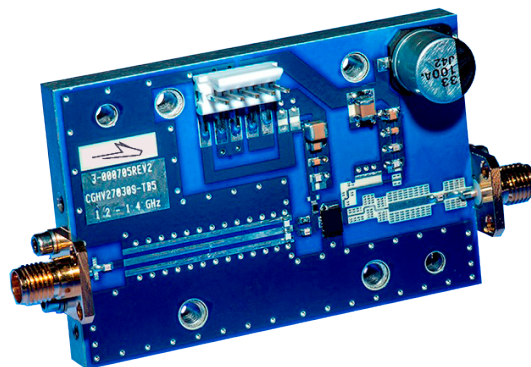
¹ $V_{DD} = 50\text{ V}$, $I_{DQ} = 0.125\text{ A}$ in the DFN package

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

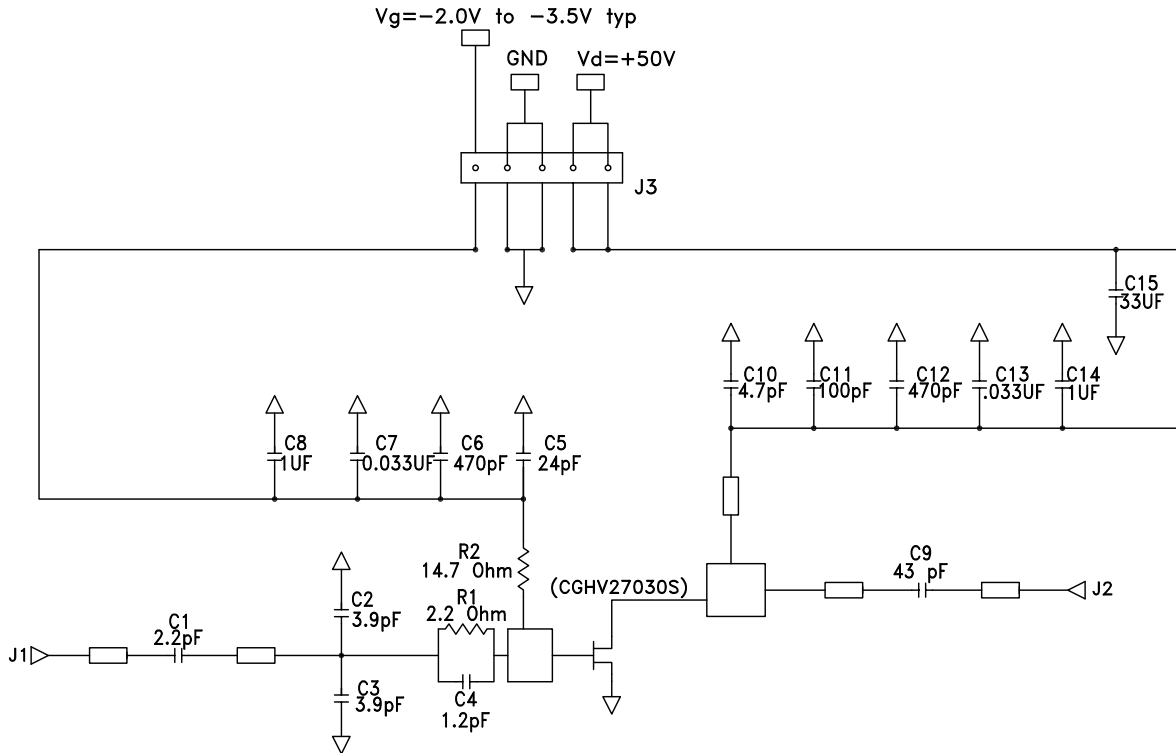
Designator	Description	Qty
R1	RES, 2.2 ohm, 1/10W 5% 0603 SMD	1
R2	RES, 1/16W, 0603, 1%, 14.7 ohms	1
C1	CAP, 2.2 pF, +/-0.1 pF, 0603, ATC	1
C2, C3	CAP, 3.9 pF, +/-0.1 pF, 0603, ATC	2
C4	CAP, 1.2 pF, +/-0.1 pF, 0603, ATC	1
C5	CAP, 24 pF, +/-5%, 0603, ATC	1
C6, C12	CAP, 470 pF, 5%, 100V, 0603, X	2
C7, C13	CAP, 33000 pF, 0805, 100V, Z7R	2
C8, C14	CAP, 1.0 μF , 100V, 10%, X7R, 1210	2
C9	CAP, 43 pF, +/-5%, 0603, ATC	1
C10	CAP, 4.7 pF, +/-0.1 pF, 0603, ATC 600S	1
C11	CAP, 100.0 pF, +/-5%, 0603, ATC	1
C15	CAP, 33 μF , 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

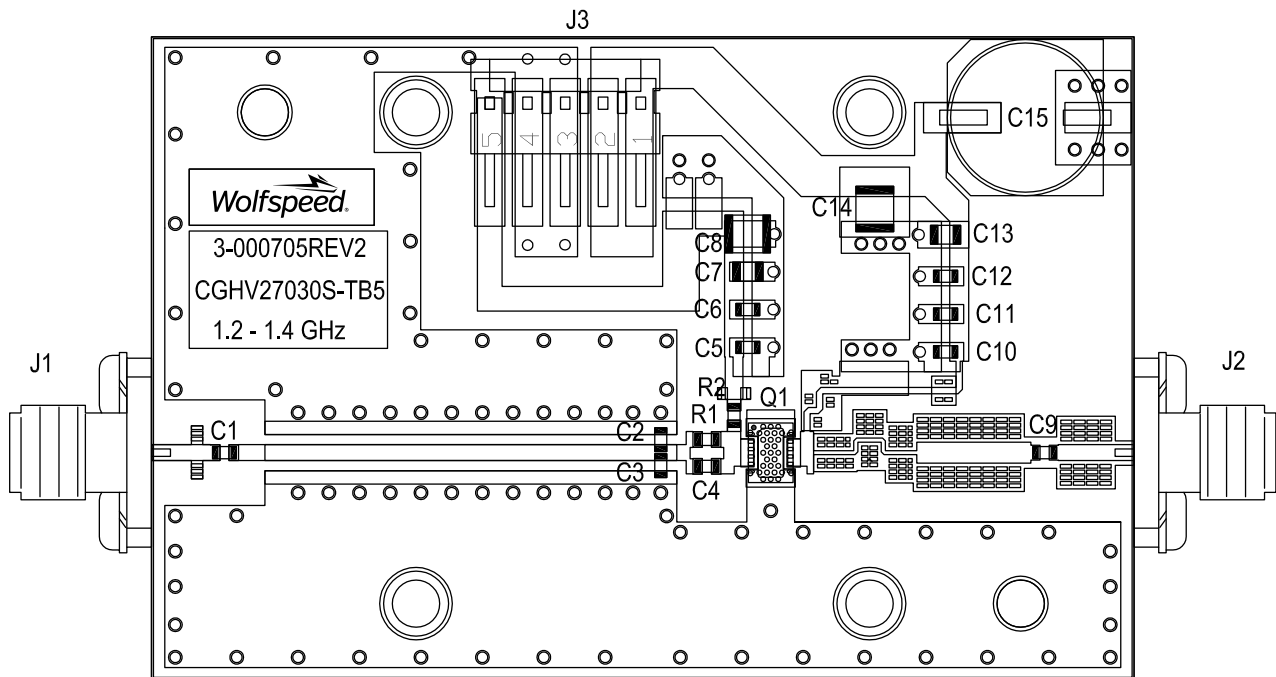




CGHV27030S-AMP5 Application Circuit Schematic, 50 V



CGHV27030S-AMP5 Application Circuit Outline, 50 V





Electrostatic Discharge (ESD) Classifications

Parameter	Symbol	Class	Classification Level	Test Methodology
Human Body Model	HBM	1A		JEDEC JESD22 A114-D
Charge Device Model	CDM	0CB		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

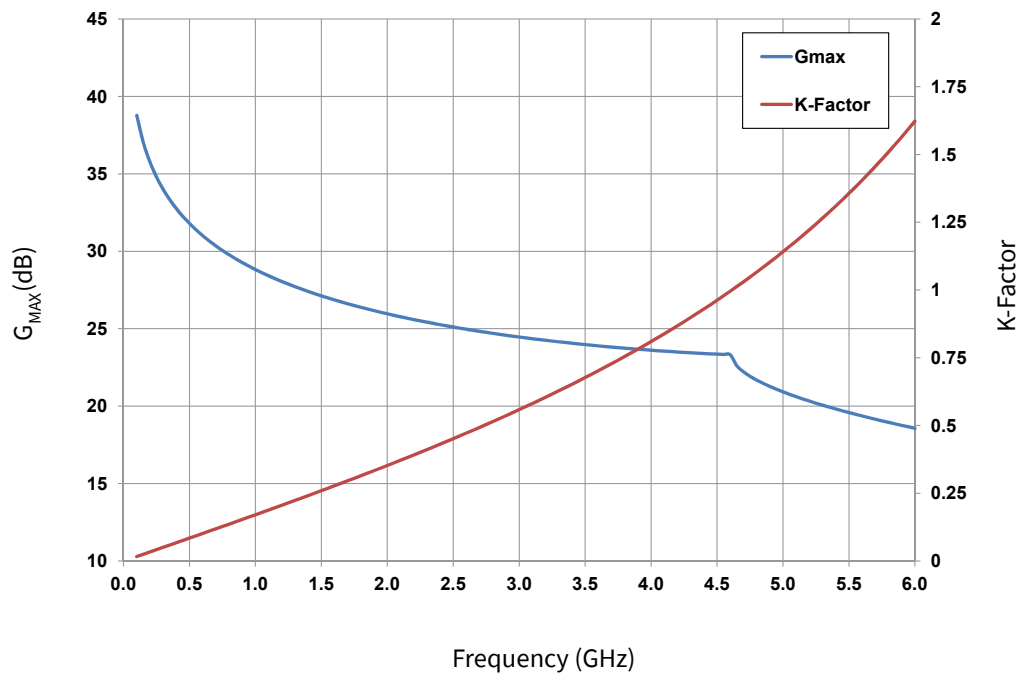
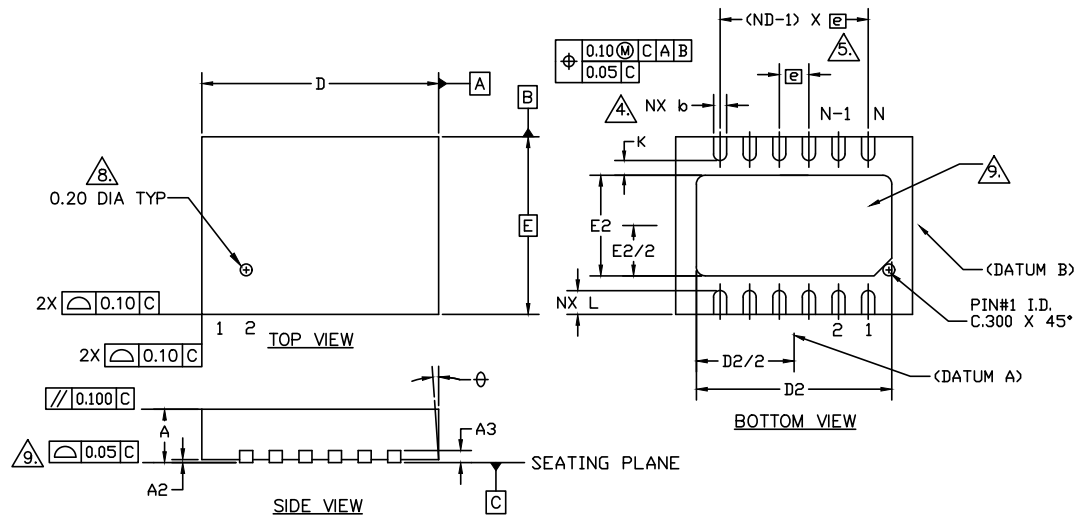


Figure 16. G_{MAX} and K-Factor vs Frequency
 $V_{DD} = 50\text{ V}$, $I_{DQ} = 130\text{ mA}$, $T_{CASE} = 25^{\circ}\text{C}$

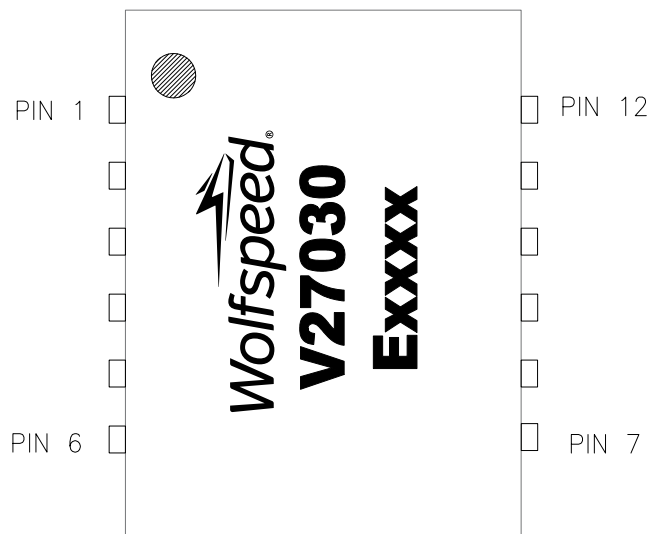


Product Dimensions CGHV27030S (Package 3 x 4 DFN)

SYMBOL	COMMON DIMENSIONS			NOTE
	MIN.	NOM.	MAX.	
A	0.80	0.90	1.0	
A1	0.00	0.02	0.05	
A3	0.203 REF.			
Ø	0	—	12	2
D	4.00 BSC			
E	3.00 BSC			
Ⓢ	0.50 BSC			
N	12			3
ND	6			△
L	0.35	0.40	0.45	
b	0.18	0.25	0.30	△
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

CGHV27030S



Table 1.

Parameter	Value	Units
Upper Frequency ¹	2.7	GHz
Power Output	30	W
Package	Surface Mount	—

Note:

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

Table 2.

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



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	

**For more information, please contact:**

4600 Silicon Drive
Durham, NC 27703 USA
Tel: +1.919.313.5300
www.wolfspeed.com/RF

Sales Contact
RFSales@wolfspeed.com

RF Product Marketing Contact
RFMarketing@wolfspeed.com

Notes & Disclaimer

Specifications are subject to change without notice. “Typical” parameters are the average values expected by Wolfspeed in large quantities and are provided for information purposes only. Wolfspeed products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death. No responsibility is assumed by Wolfspeed for any infringement of patents or other rights of third parties which may result from use of the information contained herein. No license is granted by implication or otherwise under any patent or patent rights of Wolfspeed.

© 2013-2022 Wolfspeed, Inc. All rights reserved. Wolfspeed® and the Wolfstreak logo are registered trademarks and the Wolfspeed logo is a trademark of Wolfspeed, Inc.
PATENT: <https://www.wolfspeed.com/legal/patents>

The information in this document is subject to change without notice.