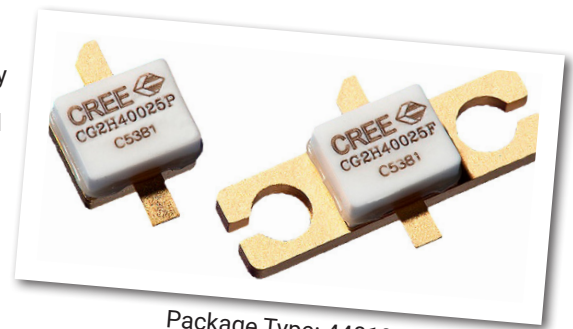


CG2H40025

25 W, 28 V RF Power GaN HEMT

Cree's CG2H40025 is an unmatched, gallium nitride (GaN) high electron mobility transistor (HEMT). The CG2H40025, operating from a 28 volt rail, offers a general purpose, broadband solution to a variety of RF and microwave applications. GaN HEMTs offer high efficiency, high gain and wide bandwidth capabilities making the CG2H40025 ideal for linear and compressed amplifier circuits. The transistor is available in a screw-down, flange package and solder-down, pill packages.



Package Type: 440196 and 440166
PN: CG2H40025P and CG2H40025F

FEATURES

- Up to 6 GHz Operation
- 17 dB Small Signal Gain at 2.0 GHz
- 15 dB Small Signal Gain at 4.0 GHz
- 30 W typical P_{SAT}
- 65 % Efficiency at P_{SAT}
- 28 V Operation

APPLICATIONS

- 2-Way Private Radio
- Broadband Amplifiers
- Cellular Infrastructure
- Test Instrumentation
- Class A, AB, Linear amplifiers suitable for OFDM, W-CDMA, EDGE, CDMA waveforms



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

| Parameter | Symbol | Rating | Units | Conditions |
|---|------------|-----------|-------|------------|
| Drain-Source Voltage | V_{DSS} | 120 | 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} | 7.0 | mA | 25°C |
| Maximum Drain Current ¹ | I_{DMAX} | 3 | A | 25°C |
| Soldering Temperature ² | T_S | 245 | °C | |
| Screw Torque | τ | 60 | in-oz | |
| Thermal Resistance, Junction to Case ³ | R_{JJC} | 3.8 | °C/W | 85°C |
| Case Operating Temperature ^{3,4} | T_C | -40, +150 | °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 Measured for the CG2H40025F at $P_{DISS} = 28.8$ W.

⁴ See also, the Power Dissipation De-rating Curve on Page 6.

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, $I_D = 7.2$ mA |
| Gate Quiescent Voltage | $V_{GS(Q)}$ | - | -2.7 | - | V_{DC} | $V_{DS} = 28$ V, $I_D = 250$ mA |
| Saturated Drain Current | I_{DS} | 5.8 | 7.0 | - | A | $V_{DS} = 6.0$ V, $V_{GS} = 2.0$ V |
| Drain-Source Breakdown Voltage | V_{BR} | 120 | - | - | V_{DC} | $V_{GS} = -8$ V, $I_D = 7.2$ mA |
| RF Characteristics² ($T_C = 25^\circ\text{C}$, $F_0 = 3.7$ GHz unless otherwise noted) | | | | | | |
| Small Signal Gain | G_{SS} | 13.05 | 15 | - | dB | $V_{DD} = 28$ V, $I_{DQ} = 250$ mA |
| Power Output ³ | P_{SAT} | 25 | 35 | - | W | $V_{DD} = 28$ V, $I_{DQ} = 250$ mA |
| Drain Efficiency ⁴ | η | 60 | 70 | - | % | $V_{DD} = 28$ V, $I_{DQ} = 250$ mA, P_{SAT} |
| Output Mismatch Stress | VSWR | - | - | 10 : 1 | Ψ | No damage at all phase angles, $V_{DD} = 28$ V, $I_{DQ} = 250$ mA, $P_{OUT} = 25$ W CW |
| Dynamic Characteristics | | | | | | |
| Input Capacitance | C_{GS} | - | 7.5 | - | pF | $V_{DS} = 28$ V, $V_{GS} = -8$ V, $f = 1$ MHz |
| Output Capacitance | C_{DS} | - | 2.4 | - | pF | $V_{DS} = 28$ V, $V_{GS} = -8$ V, $f = 1$ MHz |
| Feedback Capacitance | C_{GD} | - | 0.4 | - | pF | $V_{DS} = 28$ V, $V_{GS} = -8$ V, $f = 1$ MHz |

Notes:

¹ Measured on wafer prior to packaging.

² Measured in CG2H40025-AMP.

³ P_{SAT} is defined as $I_G = 0.72$ mA.

⁴ Drain Efficiency = P_{OUT} / P_{DC}

Typical Performance

Figure 1. - Small Signal Gain and Return Loss vs Frequency of the CG2H40025F in the CG2H40025-AMP

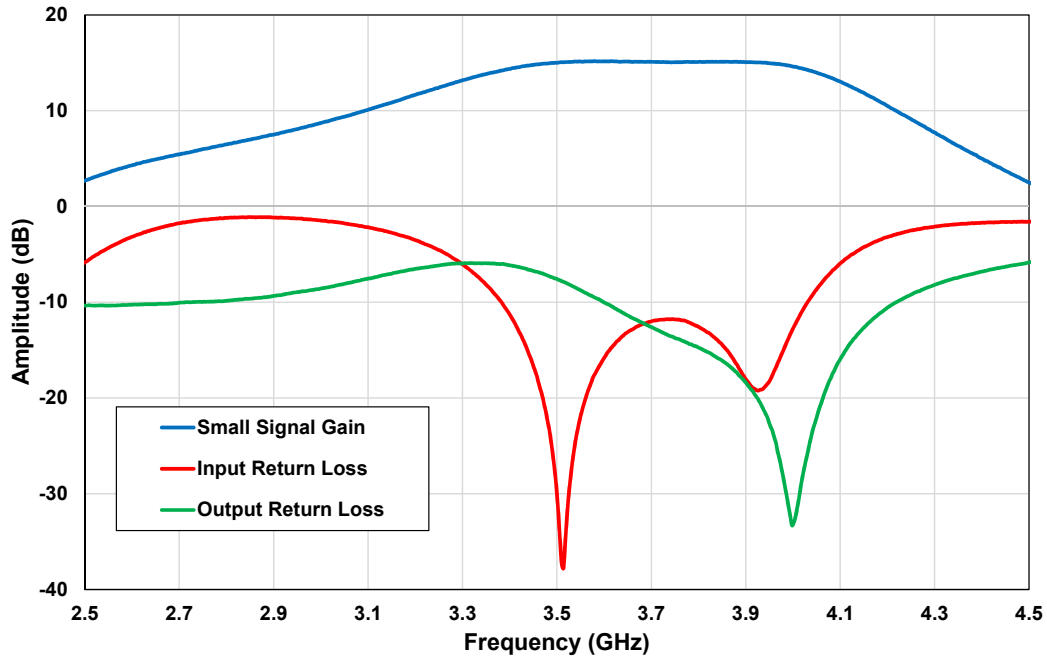
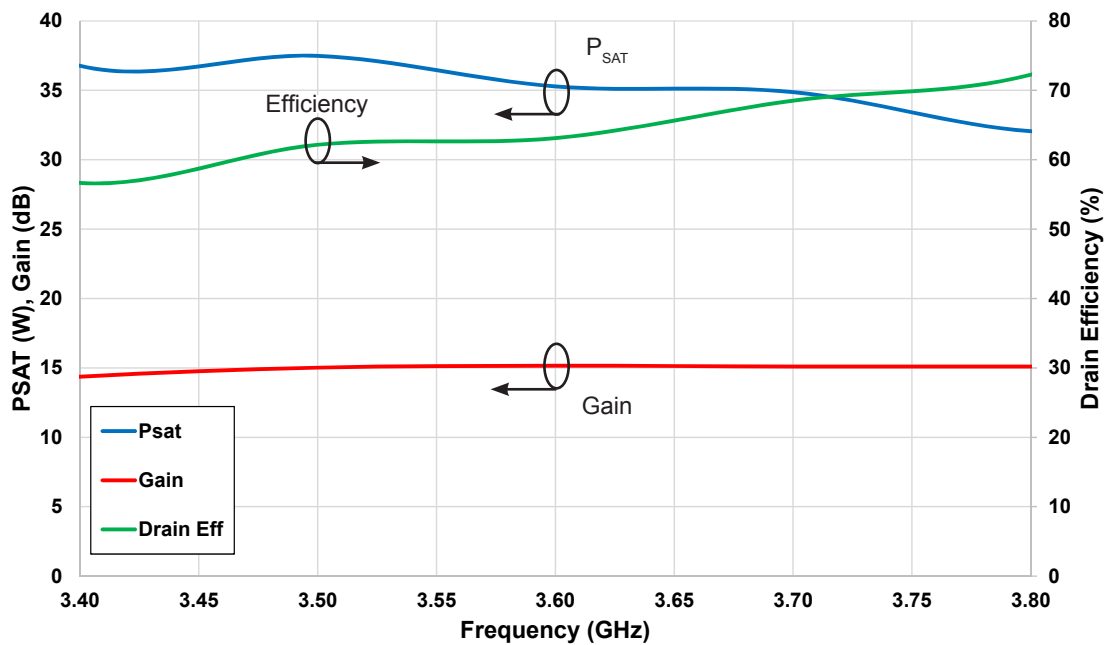


Figure 2. - P_{SAT} Gain, and Drain Efficiency vs Frequency of the CG2H40025F in the CG2H40025-AMP
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 250\text{ mA}$



Typical Performance

Figure 3. - Swept CW Data of CG2H40025 vs. Output Power in CG2H40025-AMP
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 250\text{ mA}$, Freq = 3.6 GHz

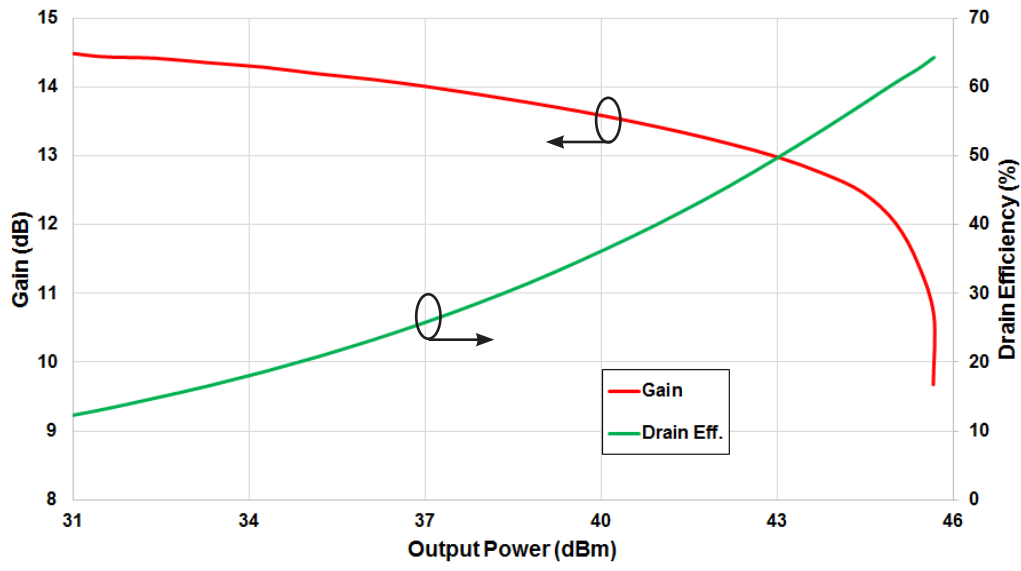
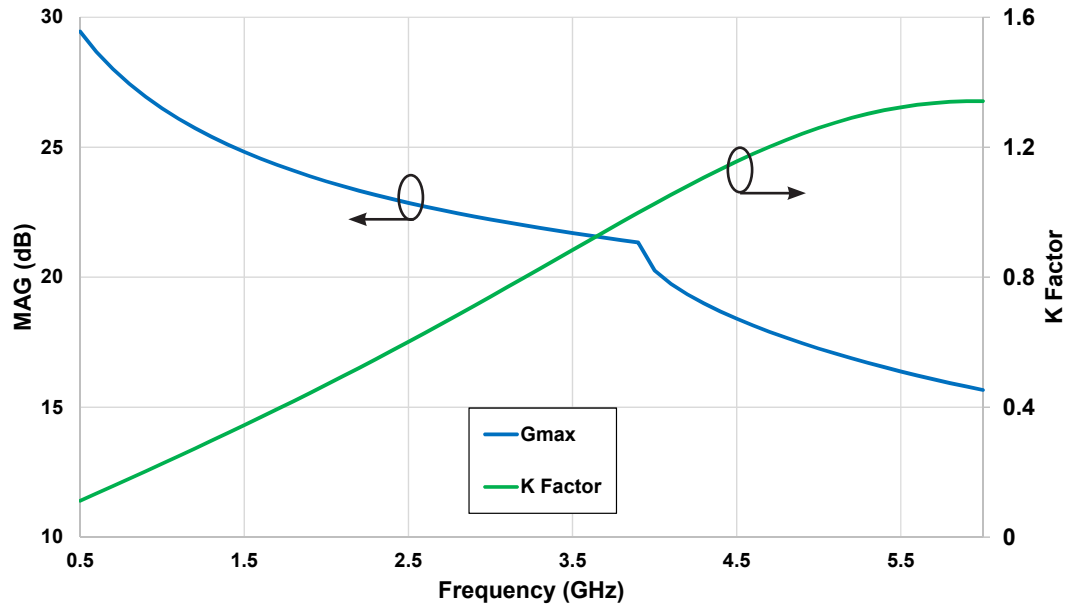
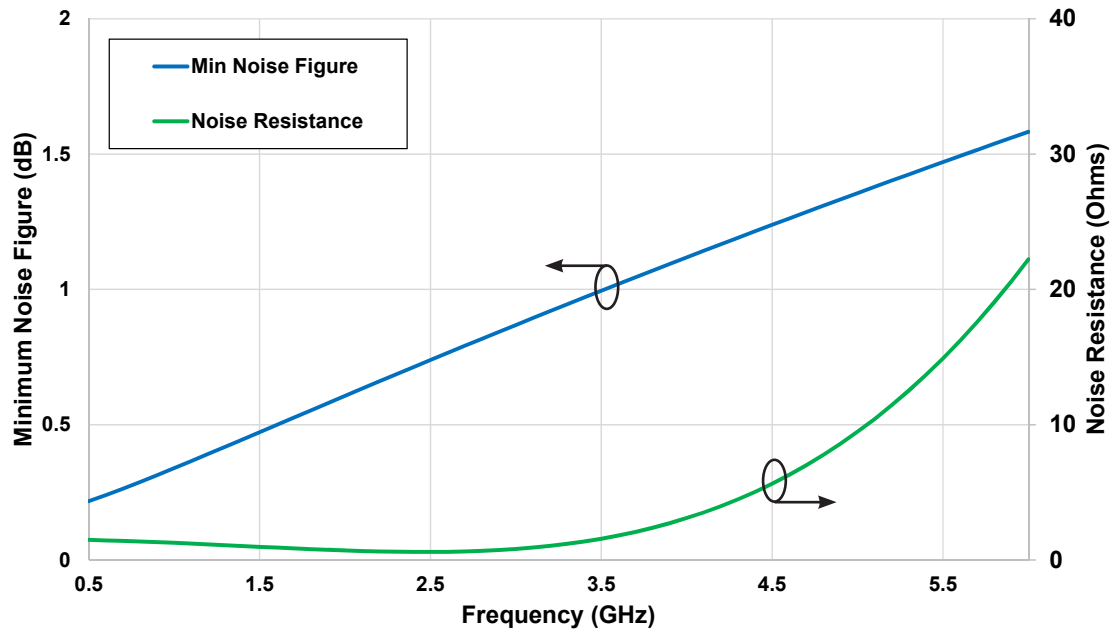


Figure 4. - Maximum Available Gain and K Factor of the CG2H40025
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 250\text{ mA}$



Typical Noise Performance

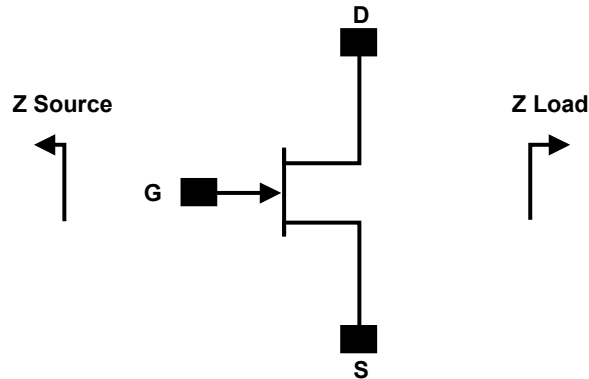
Figure 5. - Simulated Minimum Noise Figure and Noise Resistance vs Frequency of the CG2H40025F
 $V_{DD} = 28\text{ V}$, $I_{DQ} = 250\text{ mA}$



Electrostatic Discharge (ESD) Classifications

| Parameter | Symbol | Class | Test Methodology |
|---------------------|--------|------------|---------------------|
| Human Body Model | HBM | 1A > 250 V | JEDEC JESD22 A114-D |
| Charge Device Model | CDM | 1 < 200 V | JEDEC JESD22 C101-C |

Source and Load Impedances



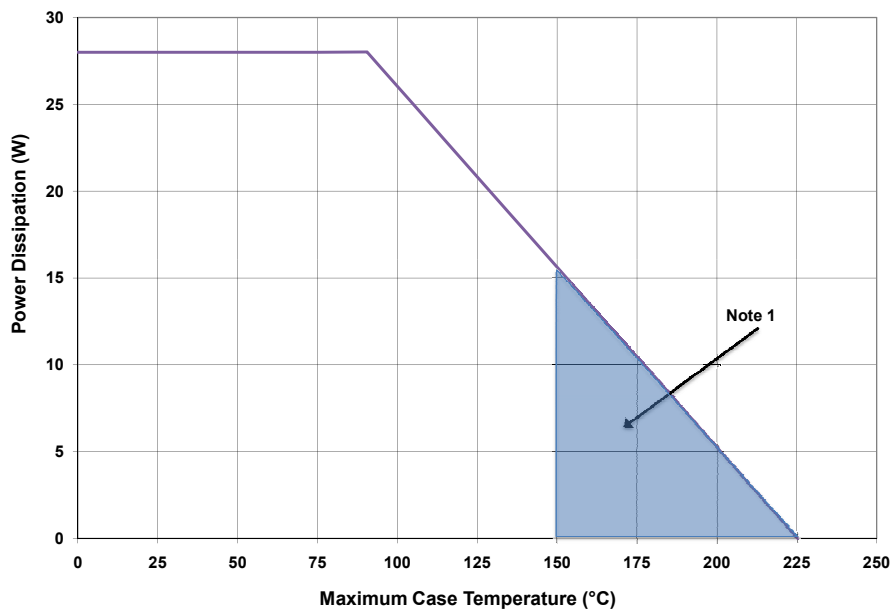
| Frequency (MHz) | Z Source | Z Load |
|-----------------|--------------|--------------|
| 500 | 7.75 + j15.5 | 20 + j5.2 |
| 1000 | 3.11 + j5.72 | 17 + j6.66 |
| 1500 | 2.86 + j1.63 | 16.8 + j3.2 |
| 2500 | 2.4 - j3.52 | 8.02 + j4.32 |
| 3500 | 1.31 - j7.3 | 5.85 - j0.51 |

Note 1. $V_{DD} = 28V$, $I_{DQ} = 250mA$ in the 440166 package.

Note 2. Optimized for power gain, P_{SAT} and PAE.

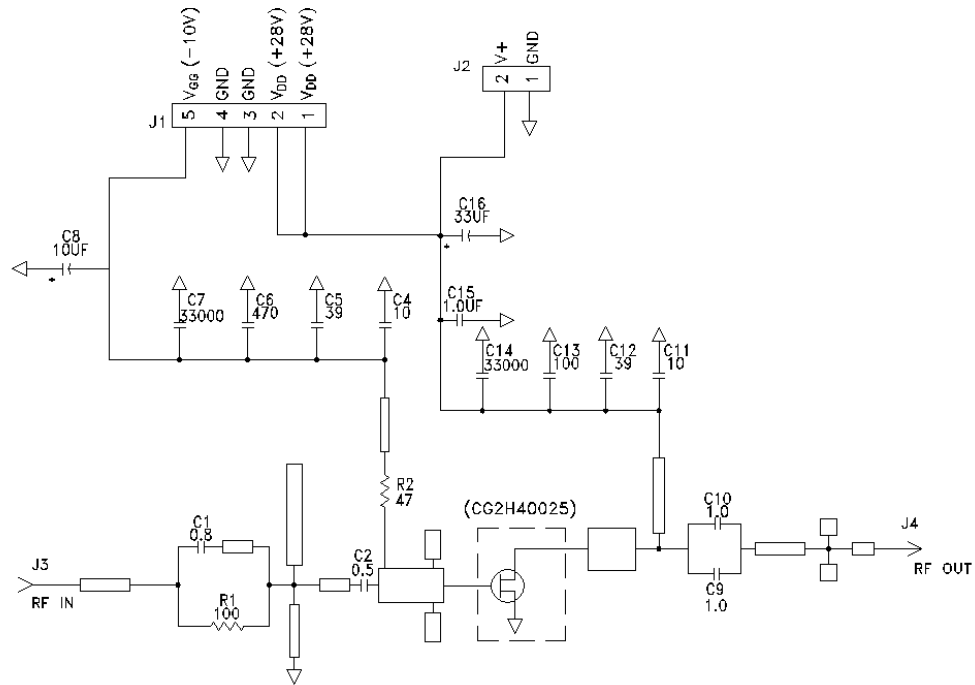
Note 3. When using this device at low frequency, series resistors should be used to maintain amplifier stability.

CG2H40025 Power Dissipation De-rating Curve

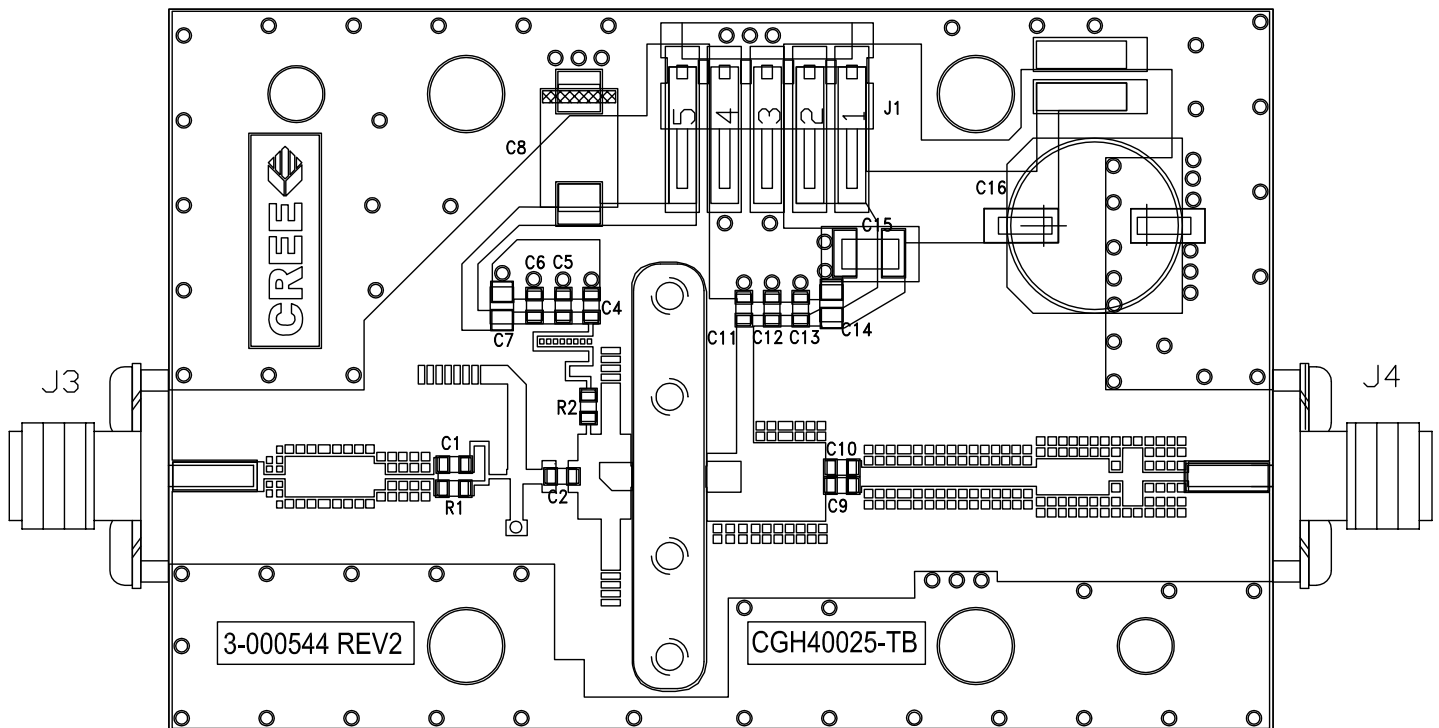


Note 1. Area exceeds Maximum Case Operating Temperature (See Page 2).

CG2H40025-AMP Demonstration Amplifier Circuit Schematic



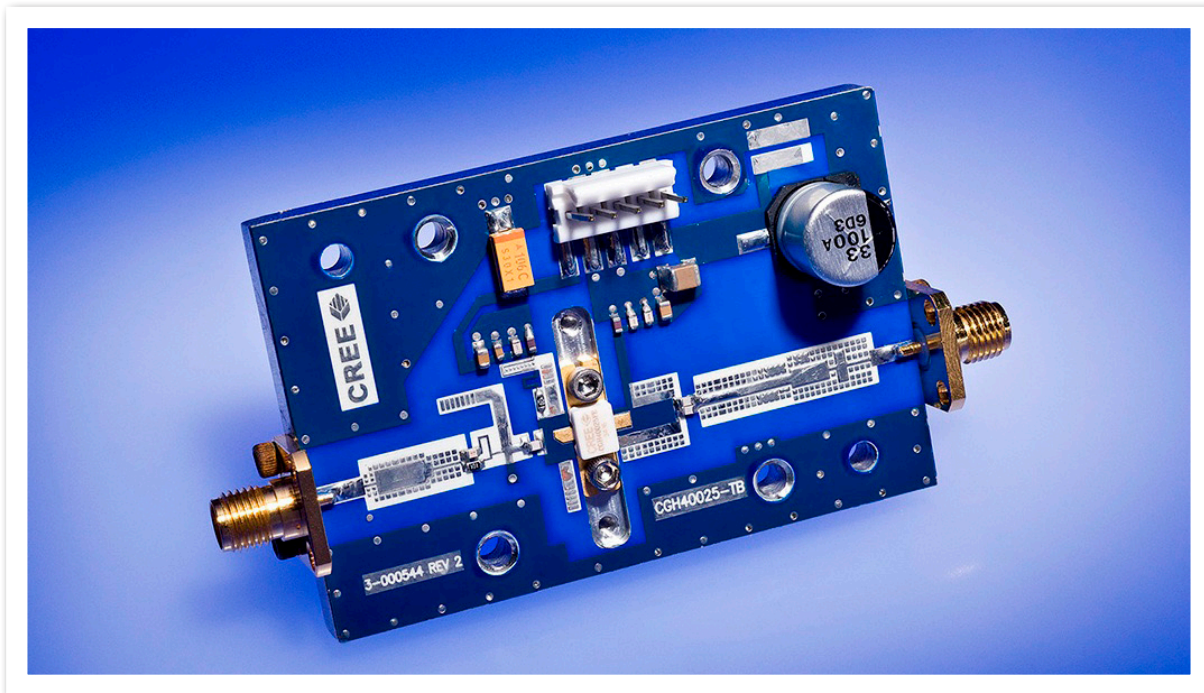
CG2H40025-AMP Demonstration Amplifier Circuit Outline



CG2H40025-AMP Demonstration Amplifier Circuit Bill of Materials

| Designator | Description | Qty |
|------------|-------------------------------------|-----|
| R2 | RES,1/16W,0603,1%,47 OHMS | 1 |
| R1 | RES,1/16W,0603,1%,100 OHMS | 1 |
| C6 | CAP, 470PF, 5%,100V, 0603 | 1 |
| C16 | CAP, 33 UF, 20%, G CASE | 1 |
| C15 | CAP, 1.0UF, 100V, 10%, X7R, 1210 | 1 |
| C8 | CAP 10UF 16V TANTALUM | 1 |
| C13 | CAP, 100.0pF, +/-5%, 0603 | 1 |
| C1 | CAP, 0.8pF, +/-0.1pF, 0603 | 1 |
| C2 | CAP, 0.5pF, +/-0.05pF, 0603 | 1 |
| C9,C10 | CAP, 1.0pF, +/-0.1pF, 0603 | 2 |
| C4,C11 | CAP, 10.0pF,+/-5%, 0603 | 2 |
| C5,C12 | CAP, 39pF, +/-5%, 0603 | 2 |
| C7,C14 | CAP,33000PF, 0805,100V, X7R | 2 |
| J3,J4 | CONN SMA STR PANEL JACK RECP | 2 |
| J1 | HEADER RT>PLZ .1CEN LK 5POS | 1 |
| - | PCB, RO4350B, Er = 3.48, h = 20 mil | 1 |
| - | CG2H40025F or CG2H40025P | 1 |

CG2H40025F-AMP Demonstration Amplifier Circuit



Typical Package S-Parameters for CG2H40025
 (Small Signal, $V_{DS} = 28\text{ V}$, $I_{DQ} = 100\text{ mA}$, angle in degrees)

| Frequency | Mag S11 | Ang S11 | Mag S21 | Ang S21 | Mag S12 | Ang S12 | Mag S22 | Ang S22 |
|-----------|---------|---------|---------|---------|----------|---------|---------|---------|
| 0.5 | 0.88499 | -149.28 | 14.898 | 95.505 | 0.027084 | 8.7483 | 0.49738 | -148.88 |
| 0.6 | 0.88261 | -155.31 | 12.533 | 90.905 | 0.027273 | 4.8054 | 0.50241 | -153.23 |
| 0.7 | 0.8814 | -159.89 | 10.792 | 87.004 | 0.027319 | 1.5653 | 0.50734 | -156.33 |
| 0.8 | 0.88088 | -163.52 | 9.4603 | 83.556 | 0.027276 | -1.2165 | 0.51241 | -158.65 |
| 0.9 | 0.88081 | -166.51 | 8.4095 | 80.419 | 0.027173 | -3.681 | 0.51774 | -160.46 |
| 1 | 0.88104 | -169.05 | 7.5594 | 77.507 | 0.027024 | -5.9148 | 0.52336 | -161.92 |
| 1.1 | 0.88151 | -171.26 | 6.8576 | 74.762 | 0.026839 | -7.9731 | 0.52928 | -163.15 |
| 1.2 | 0.88215 | -173.22 | 6.2682 | 72.148 | 0.026623 | -9.8931 | 0.5355 | -164.2 |
| 1.3 | 0.88293 | -174.99 | 5.7662 | 69.638 | 0.026381 | -11.7 | 0.54199 | -165.14 |
| 1.4 | 0.88382 | -176.6 | 5.3332 | 67.212 | 0.026116 | -13.412 | 0.54872 | -166 |
| 1.5 | 0.88481 | -178.1 | 4.9559 | 64.858 | 0.02583 | -15.041 | 0.55567 | -166.8 |
| 1.6 | 0.88588 | -179.5 | 4.624 | 62.565 | 0.025526 | -16.598 | 0.56281 | -167.57 |
| 1.7 | 0.88701 | 179.18 | 4.3298 | 60.326 | 0.025204 | -18.088 | 0.57009 | -168.31 |
| 1.8 | 0.88821 | 177.92 | 4.0671 | 58.133 | 0.024867 | -19.516 | 0.5775 | -169.04 |
| 1.9 | 0.88945 | 176.71 | 3.8311 | 55.984 | 0.024515 | -20.887 | 0.585 | -169.77 |
| 2 | 0.89073 | 175.55 | 3.6178 | 53.873 | 0.024151 | -22.202 | 0.59257 | -170.51 |
| 2.1 | 0.89204 | 174.43 | 3.4242 | 51.797 | 0.023775 | -23.463 | 0.60019 | -171.25 |
| 2.2 | 0.89338 | 173.34 | 3.2476 | 49.755 | 0.023388 | -24.672 | 0.60781 | -171.99 |
| 2.3 | 0.89474 | 172.27 | 3.0859 | 47.744 | 0.022992 | -25.828 | 0.61543 | -172.75 |
| 2.4 | 0.89612 | 171.23 | 2.9373 | 45.763 | 0.022587 | -26.933 | 0.62303 | -173.52 |
| 2.5 | 0.89751 | 170.21 | 2.8002 | 43.81 | 0.022175 | -27.985 | 0.63058 | -174.3 |
| 2.6 | 0.89891 | 169.2 | 2.6735 | 41.883 | 0.021757 | -28.985 | 0.63807 | -175.1 |
| 2.7 | 0.90031 | 168.21 | 2.5559 | 39.982 | 0.021334 | -29.932 | 0.64549 | -175.91 |
| 2.8 | 0.9017 | 167.23 | 2.4465 | 38.105 | 0.020906 | -30.824 | 0.65282 | -176.73 |
| 2.9 | 0.9031 | 166.25 | 2.3446 | 36.252 | 0.020474 | -31.66 | 0.66005 | -177.57 |
| 3 | 0.90449 | 165.29 | 2.2494 | 34.422 | 0.020041 | -32.439 | 0.66717 | -178.42 |
| 3.2 | 0.90724 | 163.39 | 2.0768 | 30.828 | 0.019169 | -33.818 | 0.68106 | 179.85 |
| 3.4 | 0.90993 | 161.5 | 1.9245 | 27.316 | 0.018299 | -34.946 | 0.69442 | 178.08 |
| 3.6 | 0.91255 | 159.63 | 1.7893 | 23.882 | 0.017437 | -35.802 | 0.70724 | 176.27 |
| 3.8 | 0.91508 | 157.78 | 1.6687 | 20.522 | 0.01659 | -36.365 | 0.71948 | 174.43 |
| 4 | 0.91753 | 155.92 | 1.5605 | 17.231 | 0.015767 | -36.609 | 0.73115 | 172.55 |
| 4.2 | 0.91988 | 154.07 | 1.4631 | 14.006 | 0.014976 | -36.507 | 0.74223 | 170.66 |
| 4.4 | 0.92214 | 152.22 | 1.3751 | 10.841 | 0.014224 | -36.031 | 0.75275 | 168.74 |
| 4.6 | 0.92429 | 150.37 | 1.2952 | 7.735 | 0.01352 | -35.155 | 0.76271 | 166.81 |
| 4.8 | 0.92634 | 148.52 | 1.2225 | 4.6828 | 0.012876 | -33.855 | 0.77213 | 164.85 |
| 5 | 0.92829 | 146.66 | 1.1562 | 1.6815 | 0.012301 | -32.122 | 0.78103 | 162.89 |
| 5.2 | 0.93014 | 144.79 | 1.0955 | -1.2722 | 0.011806 | -29.957 | 0.78944 | 160.91 |
| 5.4 | 0.9319 | 142.92 | 1.0399 | -4.1815 | 0.011402 | -27.388 | 0.79738 | 158.92 |
| 5.6 | 0.93356 | 141.04 | 0.98868 | -7.0492 | 0.011098 | -24.468 | 0.80486 | 156.92 |
| 5.8 | 0.93513 | 139.15 | 0.94152 | -9.8782 | 0.010902 | -21.282 | 0.81193 | 154.92 |
| 6 | 0.93661 | 137.25 | 0.89796 | -12.671 | 0.010821 | -17.938 | 0.81859 | 152.9 |

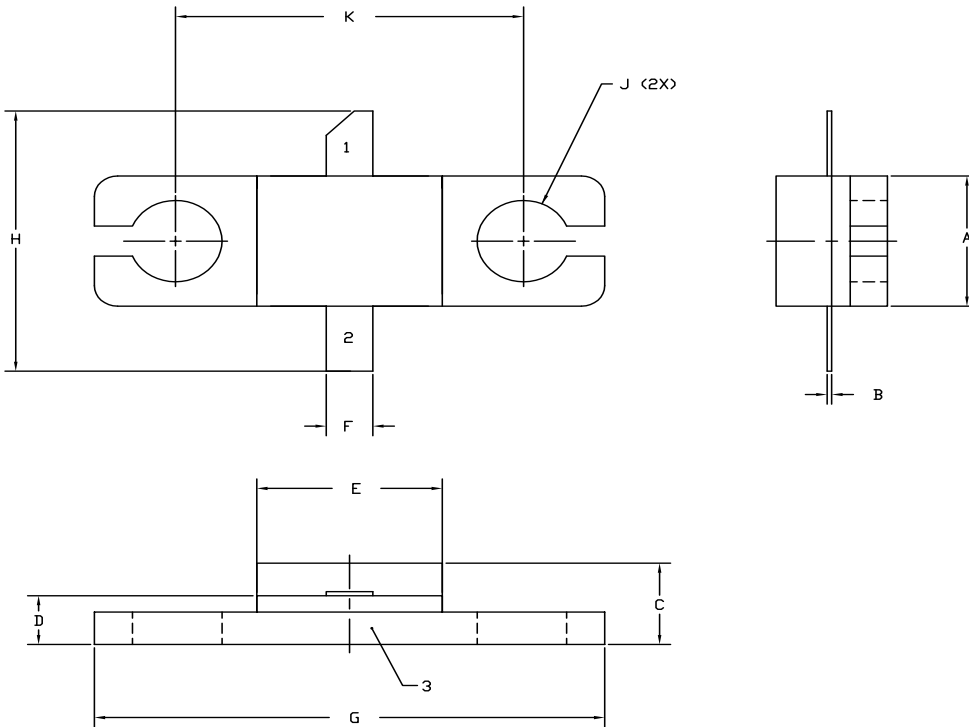
Typical Package S-Parameters for CG2H40025
 (Small Signal, $V_{DS} = 28\text{ V}$, $I_{DQ} = 250\text{ mA}$, angle in degrees)

| Frequency | Mag S11 | Ang S11 | Mag S21 | Ang S21 | Mag S12 | Ang S12 | Mag S22 | Ang S22 |
|-----------|---------|---------|---------|---------|----------|----------|---------|---------|
| 0.5 | 0.90491 | -156.21 | 16.477 | 94.241 | 0.018693 | 9.2168 | 0.58893 | -164.26 |
| 0.6 | 0.90353 | -161.33 | 13.824 | 90.4 | 0.018786 | 6.3828 | 0.59428 | -167.21 |
| 0.7 | 0.90278 | -165.23 | 11.891 | 87.143 | 0.018813 | 4.1397 | 0.59824 | -169.41 |
| 0.8 | 0.90239 | -168.36 | 10.423 | 84.261 | 0.0188 | 2.2779 | 0.60153 | -171.14 |
| 0.9 | 0.90223 | -170.96 | 9.2712 | 81.632 | 0.01876 | 0.67825 | 0.60449 | -172.55 |
| 1 | 0.90222 | -173.19 | 8.3431 | 79.185 | 0.0187 | -0.73148 | 0.60732 | -173.74 |
| 1.1 | 0.90233 | -175.15 | 7.5795 | 76.871 | 0.018624 | -1.9974 | 0.61011 | -174.77 |
| 1.2 | 0.90253 | -176.91 | 6.9403 | 74.659 | 0.018534 | -3.15 | 0.61293 | -175.69 |
| 1.3 | 0.90279 | -178.51 | 6.3972 | 72.527 | 0.018434 | -4.2101 | 0.61581 | -176.53 |
| 1.4 | 0.90311 | -179.98 | 5.93 | 70.459 | 0.018323 | -5.1924 | 0.61877 | -177.3 |
| 1.5 | 0.90348 | 178.64 | 5.5237 | 68.444 | 0.018203 | -6.107 | 0.62182 | -178.03 |
| 1.6 | 0.90389 | 177.34 | 5.1671 | 66.473 | 0.018075 | -6.9615 | 0.62496 | -178.72 |
| 1.7 | 0.90433 | 176.11 | 4.8515 | 64.54 | 0.01794 | -7.761 | 0.6282 | -179.39 |
| 1.8 | 0.90481 | 174.93 | 4.5702 | 62.64 | 0.017798 | -8.5096 | 0.63154 | 179.96 |
| 1.9 | 0.90531 | 173.8 | 4.3179 | 60.768 | 0.01765 | -9.2098 | 0.63496 | 179.33 |
| 2 | 0.90585 | 172.7 | 4.0901 | 58.922 | 0.017496 | -9.8635 | 0.63847 | 178.7 |
| 2.1 | 0.9064 | 171.63 | 3.8836 | 57.1 | 0.017337 | -10.472 | 0.64206 | 178.07 |
| 2.2 | 0.90697 | 170.59 | 3.6954 | 55.298 | 0.017174 | -11.036 | 0.64571 | 177.45 |
| 2.3 | 0.90757 | 169.58 | 3.5231 | 53.515 | 0.017007 | -11.556 | 0.64943 | 176.83 |
| 2.4 | 0.90818 | 168.58 | 3.3648 | 51.751 | 0.016838 | -12.032 | 0.65321 | 176.21 |
| 2.5 | 0.9088 | 167.6 | 3.2189 | 50.004 | 0.016665 | -12.464 | 0.65704 | 175.58 |
| 2.6 | 0.90944 | 166.64 | 3.084 | 48.272 | 0.016491 | -12.851 | 0.6609 | 174.95 |
| 2.7 | 0.91009 | 165.69 | 2.9588 | 46.555 | 0.016315 | -13.193 | 0.66481 | 174.31 |
| 2.8 | 0.91075 | 164.75 | 2.8423 | 44.853 | 0.016139 | -13.49 | 0.66874 | 173.66 |
| 2.9 | 0.91142 | 163.81 | 2.7337 | 43.165 | 0.015962 | -13.741 | 0.67269 | 173 |
| 3 | 0.9121 | 162.89 | 2.6322 | 41.489 | 0.015786 | -13.945 | 0.67666 | 172.34 |
| 3.2 | 0.91346 | 161.06 | 2.4478 | 38.177 | 0.015439 | -14.21 | 0.68461 | 170.99 |
| 3.4 | 0.91485 | 159.25 | 2.2847 | 34.911 | 0.015102 | -14.282 | 0.69255 | 169.6 |
| 3.6 | 0.91623 | 157.45 | 2.1395 | 31.691 | 0.014781 | -14.157 | 0.70045 | 168.18 |
| 3.8 | 0.91762 | 155.66 | 2.0094 | 28.514 | 0.014482 | -13.834 | 0.70825 | 166.72 |
| 4 | 0.91899 | 153.87 | 1.8923 | 25.377 | 0.01421 | -13.317 | 0.71595 | 165.23 |
| 4.2 | 0.92035 | 152.09 | 1.7863 | 22.279 | 0.013971 | -12.612 | 0.7235 | 163.7 |
| 4.4 | 0.92169 | 150.31 | 1.69 | 19.217 | 0.013771 | -11.731 | 0.73088 | 162.14 |
| 4.6 | 0.923 | 148.52 | 1.6022 | 16.191 | 0.013614 | -10.692 | 0.73809 | 160.55 |
| 4.8 | 0.92428 | 146.73 | 1.5219 | 13.198 | 0.013506 | -9.5178 | 0.74511 | 158.93 |
| 5 | 0.92553 | 144.93 | 1.4481 | 10.238 | 0.01345 | -8.2372 | 0.75193 | 157.28 |
| 5.2 | 0.92675 | 143.12 | 1.3802 | 7.3068 | 0.01345 | -6.8834 | 0.75854 | 155.6 |
| 5.4 | 0.92793 | 141.31 | 1.3176 | 4.4046 | 0.013508 | -5.4927 | 0.76493 | 153.9 |
| 5.6 | 0.92908 | 139.48 | 1.2597 | 1.5294 | 0.013626 | -4.1024 | 0.77111 | 152.17 |
| 5.8 | 0.93018 | 137.65 | 1.206 | -1.3203 | 0.013803 | -2.7494 | 0.77708 | 150.42 |
| 6 | 0.93125 | 135.8 | 1.1561 | -4.1462 | 0.014039 | -1.4677 | 0.78283 | 148.65 |

Typical Package S-Parameters for CG2H40025
 (Small Signal, $V_{DS} = 28\text{ V}$, $I_{DQ} = 400\text{ mA}$, angle in degrees)

| Frequency | Mag S11 | Ang S11 | Mag S21 | Ang S21 | Mag S12 | Ang S12 | Mag S22 | Ang S22 |
|-----------|---------|---------|---------|---------|----------|----------|---------|---------|
| 0.5 | 0.91411 | -158.63 | 16.661 | 93.602 | 0.015946 | 9.5249 | 0.61632 | -168.1 |
| 0.6 | 0.91304 | -163.41 | 13.965 | 90 | 0.016016 | 7.1218 | 0.62117 | -170.62 |
| 0.7 | 0.91246 | -167.07 | 12.007 | 86.941 | 0.01604 | 5.2677 | 0.62463 | -172.53 |
| 0.8 | 0.91214 | -170.01 | 10.523 | 84.227 | 0.016035 | 3.767 | 0.62741 | -174.06 |
| 0.9 | 0.912 | -172.47 | 9.3601 | 81.748 | 0.016012 | 2.5091 | 0.62983 | -175.33 |
| 1 | 0.91197 | -174.59 | 8.4243 | 79.434 | 0.015975 | 1.4271 | 0.63209 | -176.43 |
| 1.1 | 0.91203 | -176.46 | 7.6551 | 77.243 | 0.015927 | 0.47849 | 0.63429 | -177.4 |
| 1.2 | 0.91215 | -178.14 | 7.0117 | 75.144 | 0.015871 | -0.36499 | 0.63647 | -178.27 |
| 1.3 | 0.91232 | -179.67 | 6.4654 | 73.119 | 0.015808 | -1.1225 | 0.63869 | -179.08 |
| 1.4 | 0.91253 | 178.9 | 5.9958 | 71.152 | 0.015738 | -1.8074 | 0.64096 | -179.83 |
| 1.5 | 0.91277 | 177.57 | 5.5877 | 69.232 | 0.015663 | -2.4292 | 0.64329 | 179.45 |
| 1.6 | 0.91305 | 176.31 | 5.2297 | 67.352 | 0.015582 | -2.9947 | 0.64569 | 178.77 |
| 1.7 | 0.91335 | 175.1 | 4.9131 | 65.506 | 0.015498 | -3.509 | 0.64816 | 178.11 |
| 1.8 | 0.91368 | 173.95 | 4.631 | 63.689 | 0.01541 | -3.9755 | 0.65071 | 177.46 |
| 1.9 | 0.91403 | 172.84 | 4.378 | 61.897 | 0.015318 | -4.3969 | 0.65333 | 176.83 |
| 2 | 0.91439 | 171.76 | 4.1499 | 60.128 | 0.015224 | -4.7751 | 0.65603 | 176.2 |
| 2.1 | 0.91478 | 170.72 | 3.943 | 58.378 | 0.015128 | -5.1114 | 0.65879 | 175.58 |
| 2.2 | 0.91518 | 169.69 | 3.7545 | 56.647 | 0.01503 | -5.4068 | 0.66162 | 174.96 |
| 2.3 | 0.91559 | 168.69 | 3.5821 | 54.933 | 0.01493 | -5.6617 | 0.6645 | 174.34 |
| 2.4 | 0.91602 | 167.71 | 3.4238 | 53.234 | 0.014831 | -5.8768 | 0.66744 | 173.73 |
| 2.5 | 0.91646 | 166.74 | 3.2779 | 51.549 | 0.01473 | -6.0522 | 0.67043 | 173.11 |
| 2.6 | 0.91691 | 165.79 | 3.1429 | 49.878 | 0.014631 | -6.1881 | 0.67347 | 172.48 |
| 2.7 | 0.91737 | 164.84 | 3.0178 | 48.219 | 0.014532 | -6.2847 | 0.67655 | 171.85 |
| 2.8 | 0.91784 | 163.91 | 2.9014 | 46.572 | 0.014434 | -6.342 | 0.67966 | 171.22 |
| 2.9 | 0.91832 | 162.99 | 2.7928 | 44.937 | 0.014339 | -6.3603 | 0.6828 | 170.58 |
| 3 | 0.9188 | 162.07 | 2.6914 | 43.313 | 0.014246 | -6.3396 | 0.68597 | 169.94 |
| 3.2 | 0.91979 | 160.25 | 2.5071 | 40.096 | 0.014069 | -6.1828 | 0.69237 | 168.63 |
| 3.4 | 0.92079 | 158.46 | 2.3442 | 36.918 | 0.01391 | -5.8752 | 0.69882 | 167.28 |
| 3.6 | 0.92181 | 156.67 | 2.1991 | 33.777 | 0.013772 | -5.4232 | 0.70528 | 165.91 |
| 3.8 | 0.92283 | 154.89 | 2.069 | 30.671 | 0.01366 | -4.8358 | 0.71174 | 164.51 |
| 4 | 0.92384 | 153.12 | 1.9519 | 27.598 | 0.013578 | -4.1254 | 0.71815 | 163.08 |
| 4.2 | 0.92486 | 151.35 | 1.8459 | 24.558 | 0.01353 | -3.3083 | 0.7245 | 161.61 |
| 4.4 | 0.92586 | 149.58 | 1.7494 | 21.547 | 0.013519 | -2.4038 | 0.73077 | 160.12 |
| 4.6 | 0.92686 | 147.8 | 1.6615 | 18.565 | 0.01355 | -1.4342 | 0.73694 | 158.59 |
| 4.8 | 0.92783 | 146.02 | 1.5809 | 15.611 | 0.013624 | -0.42447 | 0.743 | 157.04 |
| 5 | 0.92879 | 144.23 | 1.5068 | 12.683 | 0.013743 | 0.59953 | 0.74893 | 155.45 |
| 5.2 | 0.92973 | 142.44 | 1.4386 | 9.7806 | 0.013909 | 1.6115 | 0.75473 | 153.84 |
| 5.4 | 0.93065 | 140.64 | 1.3756 | 6.9015 | 0.014122 | 2.5859 | 0.76038 | 152.2 |
| 5.6 | 0.93154 | 138.82 | 1.3172 | 4.0448 | 0.014382 | 3.4993 | 0.76588 | 150.54 |
| 5.8 | 0.93241 | 137 | 1.263 | 1.2093 | 0.014688 | 4.3307 | 0.77123 | 148.85 |
| 6 | 0.93325 | 135.16 | 1.2126 | -1.6063 | 0.01504 | 5.0626 | 0.77642 | 147.14 |

Product Dimensions CG2H40025F (Package Type – 440166)



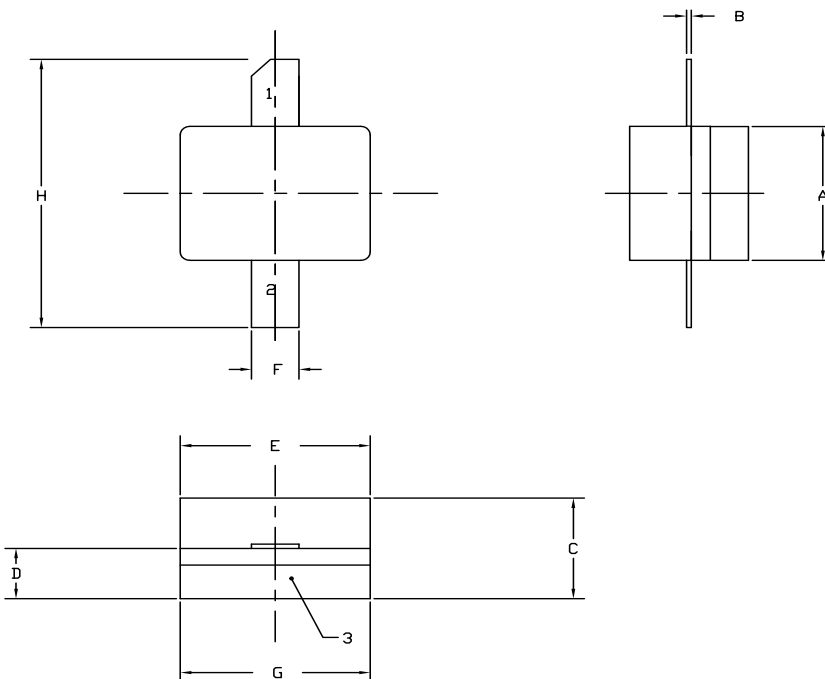
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ADHESIVE FROM LID MAY EXTEND A MAXIMUM OF 0.020" BEYOND EDGE OF LID.
4. LID MAY BE MISALIGNED TO THE BODY OF THE PACKAGE BY A MAXIMUM OF 0.008" IN ANY DIRECTION.
5. ALL PLATED SURFACES ARE NI/AU

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.155 | 0.165 | 3.94 | 4.19 |
| B | 0.004 | 0.006 | 0.10 | 0.15 |
| C | 0.115 | 0.135 | 2.92 | 3.43 |
| D | 0.057 | 0.067 | 1.45 | 1.70 |
| E | 0.195 | 0.205 | 4.95 | 5.21 |
| F | 0.045 | 0.055 | 1.14 | 1.40 |
| G | 0.545 | 0.555 | 13.84 | 14.09 |
| H | 0.280 | 0.360 | 7.11 | 9.14 |
| J | ∅ .100 | | 2.54 | |
| K | 0.375 | | 9.53 | |

- PIN 1. GATE
 PIN 2. DRAIN
 PIN 3. SOURCE

Product Dimensions CG2H40025P (Package Type – 440196)





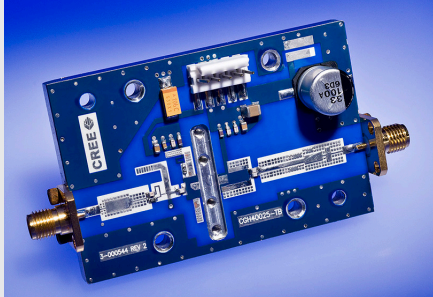
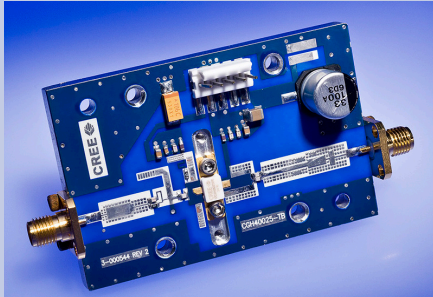
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ADHESIVE FROM LID MAY EXTEND A MAXIMUM OF 0.020" BEYOND EDGE OF LID.
4. LID MAY BE MISALIGNED TO THE BODY OF THE PACKAGE BY A MAXIMUM OF 0.008" IN ANY DIRECTION.
5. ALL PLATED SURFACES ARE NI/AU

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.155 | 0.165 | 3.94 | 4.19 |
| B | 0.003 | 0.006 | 0.10 | 0.15 |
| C | 0.115 | 0.135 | 2.92 | 3.17 |
| D | 0.057 | 0.067 | 1.45 | 1.70 |
| E | 0.195 | 0.205 | 4.95 | 5.21 |
| F | 0.045 | 0.055 | 1.14 | 1.40 |
| G | 0.195 | 0.205 | 4.95 | 5.21 |
| H | 0.280 | 0.360 | 7.11 | 9.14 |

- PIN 1. GATE
 PIN 2. DRAIN
 PIN 3. SOURCE

Product Ordering Information

| Order Number | Description | Unit of Measure | Image |
|----------------|------------------------------------|-----------------|---|
| CG2H40025F | GaN HEMT | Each |  |
| CG2H40025P | GaN HEMT | Each |  |
| CG2H40025F-TB | Test board without GaN HEMT | Each |  |
| CG2H40025F-AMP | Test board with GaN HEMT installed | Each |  |



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