**R&K-CA2856BW20-5858RP**

- **All Solid-State Amplifier**
- **Frequency Range:** 2856MHz±10MHz
- **Output Power:** 600W (min.) @Peak (Pulse)

**APPLICATION**

- **Accelerator Application**

**SPECIFICATIONS @ +25°C**

- **Frequency Range:** 2856MHz±10MHz
- **Small Signal Gain:** +57.8dB (min.)
- **Rated Output Power:** 600W (min.) @Peak
- **Maximum Output Power:** 800W
- **Pulse Rise Time:** 100ns (max.) @Po=600W
- **Pulse Fall Time:** 100ns (max.) @Po=600W
- **Overshoot / Undershoot:** 3% (max.) @Po=600W
- **Flat-top Flatness:** 1% (max.) @Po=600W @Flat-top
- **Output Power Stability:** ±1% @Pulse to Pulse Voltage fluctuation
- **Phase Variation:** ±3° @within a Pulse @Flat-top
- **Impedance:** 50Ω
- **Input Return Loss:** 20.8dB (min.) / VSWR : 1.2 (max.)
- **Maximum RF Input Power:** odBm
- **AC Supply Input:** AC100V±15%/ 1 φ, 50/60Hz, 200VA
- **Operating Temperature:** 0°C to +35°C
- **Storage Temperature:** −15°C to +55°C
- **Connectors:**
  - RF - IN: N - FEMALE
  - RF - OUT: N - FEMALE
- **Size:** (W)480mm×(D)559.5mm×(H)177mm (EIA:4U)
- **Weight:** 25.0kg (max.)
- **Cooling:** Water Cooling
  - (Water Temp: 30°C, Flow Rate: 3 liter/min, Pressure: 10kg/cm²)
- **Protection Circuits:**
  - Over Temperature Protection
  - Power Supply Voltage Protection
  - Output Over Power Protection(@800W)
- **Remote Interface:** Ethernet
- **Other Functions:**
  - R&K Multi Monitoring System
  - With Output Circulator

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**TYPICAL PERFORMANCE (Temp @+25°C)**

- **Gain Flatness**
- **Input Return Loss**
- **Output Power Linearity**

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R&K reserves the right to make changes in the specifications of or discontinue products at any time without notice. R&K products shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as aerospace uses or medical life support equipment. Further, the export of R&K products from Japan may be subject to an export license by the government of Japan, based on Japan's "Foreign Exchange and Foreign Trade Law".
TYPICAL PERFORMANCE (Temp @+25°C)

- **Output Pulse**
  - Frequency: 2856MHz
  - Output Power: 600W
  - Duty: 0.05%/100pps
  - Pulse Width: 5usec
  - Pulse Period: 10msec

- **Pulse Rise**
  - Frequency: 2856MHz
  - Output Power: 600W
  - Duty: 0.05%/100pps
  - Pulse Width: 5usec
  - Pulse Period: 10msec

- **Pulse Fall**
  - Frequency: 2856MHz
  - Output Power: 600W
  - Duty: 0.05%/100pps
  - Pulse Width: 5usec
  - Pulse Period: 10msec
**Used Offset Frequency Generator for measurement. (fig.1)**

**Offset Frequency Generator 2856MHz ⇒ 10MHz (RF Pulse Signal⇒I&Q Voltage)**

* I and Q value after 2.5us of the rising of a pulse are measured in each 2 seconds.

<table>
<thead>
<tr>
<th>Pulse No.</th>
<th>I (V)</th>
<th>Q (V)</th>
<th>Amp. (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse1</td>
<td>0.00023</td>
<td>-0.22464</td>
<td>0.22464</td>
</tr>
<tr>
<td>Pulse2</td>
<td>0.00002</td>
<td>-0.22454</td>
<td>0.22454</td>
</tr>
<tr>
<td>Pulse3</td>
<td>-0.00007</td>
<td>-0.22467</td>
<td>0.22467</td>
</tr>
<tr>
<td>Pulse4</td>
<td>-0.00003</td>
<td>-0.22452</td>
<td>0.22452</td>
</tr>
<tr>
<td>Pulse5</td>
<td>0.00005</td>
<td>-0.22462</td>
<td>0.22462</td>
</tr>
<tr>
<td>Pulse6</td>
<td>-0.00013</td>
<td>-0.22478</td>
<td>0.22478</td>
</tr>
<tr>
<td>Pulse7</td>
<td>-0.00028</td>
<td>-0.22470</td>
<td>0.22470</td>
</tr>
<tr>
<td>Pulse8</td>
<td>-0.00007</td>
<td>-0.22450</td>
<td>0.22450</td>
</tr>
<tr>
<td>Pulse9</td>
<td>-0.00028</td>
<td>-0.22447</td>
<td>0.22447</td>
</tr>
<tr>
<td>Pulse10</td>
<td>-0.00045</td>
<td>-0.22444</td>
<td>0.22444</td>
</tr>
<tr>
<td>Pulse11</td>
<td>-0.00007</td>
<td>-0.22448</td>
<td>0.22448</td>
</tr>
<tr>
<td>Pulse12</td>
<td>-0.00014</td>
<td>-0.22448</td>
<td>0.22448</td>
</tr>
</tbody>
</table>

\[ \sqrt{I^2+Q^2} \]

**Measuring Points**

- **Pulse Period 2sec x9**
- **Pulse Period 2sec**

**Pulse Width=5us**

**Measuring Point: 2.5us**

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**PULSED RF POWER AMPLIFIER**

**TYPICAL PERFORMANCE (Temp @+25℃)**

* Pulse to Pulse Phase Jitter

![Phase Jitter (12 pulse) graph](image)

*Std. (Phase) in degree = 0.045deg. (pulse1 to pulse12)*

*Used Offset Frequency Generator for measurement. (fig.1)*

Offset Frequency Generator 2856MHz ⇔ 10MHz (RF Pulse Signal ⇒ I&Q Voltage)

*I and Q value after 2.5us of the rising of a pulse are measured in each 2 seconds.*

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**Measuring Points**

![Measuring Points diagram](image)