FEATURES
- BROAD BAND INTERNALLY MATCHED FET
- HIGH POWER
  P1dB = 42.5dBm at 7.1GHz to 7.9GHz
- HIGH GAIN
  G1dB = 10.5dB at 7.1GHz to 7.9GHz
- LOW INTERMODULATION DISTORTION
  IM3(MIN.) = -40dBc at Pout = 30.5dBm
  Single Carrier Level
- HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta = 25°C)

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>SYMBOL</th>
<th>CONDITIONS</th>
<th>UNIT</th>
<th>MIN.</th>
<th>TYP.</th>
<th>MAX.</th>
</tr>
</thead>
</table>
| Output Power at 1dB Gain Compression Point | P1dB   | VDS= 10V  
IDSset= 2.8A  
f = 7.1 to 7.9GHz | dBm   | 41.5  | 42.5  | __   |
| Power Gain at 1dB Gain Compression Point | G1dB   |  | dB   | 9.5   | 10.5  | __   |
| Drain Current                          | IDS1   | A |      | 4.4   | 5.0   |      |
| Gain Flatness                          | ΔG     | dB |      |      |      | ±0.8 |
| Power Added Efficiency                 | ηadd   | % |      |      | 37    | __   |
| 3rd Order Intermodulation Distortion   | IM3    | Two Tone Test  
Po = 30.5dBm, Δf = 5MHz  
(Single Carrier Level) | dBc   | -40   | -45   | __   |
| Drain Current                          | IDS2   | A |      |      | 5.0   |      |
| Channel Temperature Rise               | ΔTch   | (VDS X IDS + Pin – P1dB) X Rth(c-c)  | °C   |      | 80    |      |

Recommended Gate Resistance(Rg): 68 Ω

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>SYMBOL</th>
<th>CONDITIONS</th>
<th>UNIT</th>
<th>MIN.</th>
<th>TYP.</th>
<th>MAX.</th>
</tr>
</thead>
</table>
| Transconductance                       | gm     | VDS= 3V  
IDS= 5.2A | S   | __   | 5.2   | __   |
| Pinch-off Voltage                      | VGSoff | VDS= 3V  
IDS= 40mA | V   | -1.0   | -1.9   | -4.0 |
| Saturated Drain Current                | IDSS   | VDS= 3V  
VGS= 0V | A   | __   | 8.8   | 14.0 |
| Gate-Source Breakdown Voltage          | VGSO   | IGS= -180μA  
V   | V   | -5.0   | -7.0   | __   |
| Thermal Resistance                     | Rth(c-c) | Channel to Case | °C/W | 1.5   | 1.8   |      |

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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>SYMBOL</th>
<th>UNIT</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain-Source Voltage</td>
<td>VDS</td>
<td>V</td>
<td>15</td>
</tr>
<tr>
<td>Gate-Source Voltage</td>
<td>VGS</td>
<td>V</td>
<td>-5</td>
</tr>
<tr>
<td>Drain Current</td>
<td>IDS</td>
<td>A</td>
<td>14.0</td>
</tr>
<tr>
<td>Total Power Dissipation (Tc= 25°C)</td>
<td>PT</td>
<td>W</td>
<td>83.3</td>
</tr>
<tr>
<td>Channel Temperature</td>
<td>Tch</td>
<td>°C</td>
<td>175</td>
</tr>
<tr>
<td>Storage</td>
<td>Tstg</td>
<td>°C</td>
<td>-65 to +175</td>
</tr>
</tbody>
</table>

PACKAGE OUTLINE (7-AA05A)

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.
Pout, Gain, PAE, IDS vs. Pin

VDS = 10 V, IDS = 2.8 A, f = 7.1, 7.5, 7.9 GHz, Ta = +25 °C
- IM3, IM5 vs. Pout

VDS = 10 V, IDSset = 2.8 A, f = 7.1, 7.5, 7.9 GHz, Δf = 5 MHz, Ta = +25 °C
• Pout, Gain, PAE, IDS vs. Pin vs. IDSset

VDS = 10 V, IDSset = 2.4, 2.8, 3.2 A, f = 7.5 GHz, Ta = +25 °C
- **IM3, IM5 vs. Pout vs. IDS_set**

  VDS = 10 V, IDS_set = 2.4, 2.8, 3.2 A, f = 7.5 GHz, Δf = 5 MHz, Ta = +25 °C

![IM3 vs Pout](image)

![IM5 vs Pout](image)
- **S-Parameters**
  
  \[
  \text{VDS}= 10 \text{ V}, \text{ IDS}= 2.8 \text{ A}, f= 5.0 \text{ to } 10.0 \text{ GHz}, \text{ Ta}= +25 ^\circ \text{C}
  \]
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