FEATURES

- BROAD BAND INTERNALLY MATCHED HEMT
- HIGH POWER
  Pout = 48.0dBm at Pin = 40.0dBm
- HIGH GAIN
  GL = 12.5dB at 5.85GHz to 6.75GHz
- LOW INTERMODULATION DISTORTION
  IM3(Min.) = -25dBc at Po=41.0dBm
  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                         | Pout   | VDS= 40V  
IDSset= 0.4A  
f= 5.85 to 6.75GHz  
@Pin= 40dBm | dBm   | 47.0 | 48.0 | __   |
| Drain Current                        | IDS1   |                                                 | A    | __   | 3.5  | 4.5  |
| Power Added Efficiency                | ηadd   |                                                 | %    | __   | 38   | __   |
| Linear Gain                          | GL     | @Pin = 20dBm                                    | dB   | 11.5 | 12.5 | __   |
| Gain flatness                        | ΔG     |                                                 | dB   | __   | __   | ±0.8 |
| 3rd Order Intermodulation Distortion | IM3    | Two-Tone Test  
Po= 41.0dBm  
(Single Carrier Level)  
Δf= 5MHz (IM3)  
Δf= 150MHz (IM3-2) | dBc   | -25  | -30  | __   |
| Drain Current                        | IDS2   |                                                 | A    | __   | 2.0  | 2.5  |
| Channel Temperature Rise-1           | ΔTch   | @Po=44dBm *2                                    | °C   | __   | 120  | 140  |

Recommended Gate Resistance(Rg): 10 Ω

*1: ΔTch = (VDS × IDS + Pin(two-tone) – Po(two-tone)) × Rth(c-c), calculated using parameters of IM3 test

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

<table>
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<tr>
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<th>UNIT</th>
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<th>TYP.</th>
<th>MAX.</th>
</tr>
</thead>
</table>
| Transconductance                    | gm     | VDS= 5V  
IDS= 5.0A | S    | __   | 4.0  | __   |
| Pinch-off Voltage                   | VGSoff | VDS= 5V  
IDS= 15mA | V    | -2.0 | -3.0 | -5.0 |
| Saturated Drain Current             | IDSS   | VDS= 5V  
VGS= 0V | A    | __   | 10   | __   |
| Gate-Source Breakdown Voltage       | VGSO   | IGS= -12mA | V    | -10  | __   | __   |
| Thermal Resistance                  | Rth(c-c) | Channel to Case                | °C/W | __   | 1.6  | 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>50</td>
</tr>
<tr>
<td>Gate-Source Voltage</td>
<td>VGS</td>
<td>V</td>
<td>-10</td>
</tr>
<tr>
<td>Drain Current</td>
<td>IDS</td>
<td>A</td>
<td>6.0</td>
</tr>
<tr>
<td>Total Power Dissipation (Tc= 25 °C)</td>
<td>PT</td>
<td>W</td>
<td>111</td>
</tr>
<tr>
<td>Channel Temperature</td>
<td>Tch</td>
<td>°C</td>
<td>225</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>Tstg</td>
<td>°C</td>
<td>-65 to +175</td>
</tr>
</tbody>
</table>

PACKAGE OUTLINE (7-AA04A)

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 = 40V, IDSset = 0.4 A, f = 5.85, 6.3, 6.75 GHz, Ta = +25 °C
- IM3, IM5 vs. Pout

VDS = 40V, IDSset = 0.4 A, f = 5.85, 6.3, 6.75 GHz, Δf = 5 MHz, Ta = +25 °C

- IM3-2, IM5-2 vs. Pout

VDS = 40V, IDSset = 0.4 A, f = 5.85, 6.3, 6.75 GHz, Δf = 150 MHz, Ta = +25 °C
- Pout, Gain, PAE, IDS vs. Pin vs. Temperature

VDS = 40V, IDSset = 0.4 A, f = 6.3 GHz, Ta = -25, +25, +75 °C

Pout vs Pin
VDS=40V, IDS=0.4A, f=6.3GHz

Gain vs Pin
VDS=40V, IDS=0.4A, f=6.3GHz

PAE vs Pin
VDS=40V, IDS=0.4A, f=6.3GHz

IDS vs Pin
VDS=40V, IDS=0.4A, f=6.3GHz
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