New High-Performance SSPA Technology

Delivering a Higher Standard of Efficiency, Reliability & Frequency Range

Qorvo™
all around you
High-Power, Ultra-Broadband Performance & Solid State Reliability Using Spatium™ Technology

Qorvo’s patented Spatium™ RF power combining technology provides a highly reliable, efficient alternative to traveling wave tube amplifiers (TWTAs) for commercial and defense communications, radar, electronic warfare (EW) and other defense systems. Spatium solutions are readily customizable and dramatically improve broadband RF power and efficiency through patented coaxial spatial combining techniques using gallium arsenide (GaAs) or gallium nitride (GaN) MMIC amplifiers. Spatium’s all solid-state construction delivers longer service lifetimes than comparable TWTAs or conventional planar power combining products; they provide clear size, weight, power and cost (SWaP-C) advantages. RF designers can use Spatium to achieve unprecedented efficiency with output power from hundreds to thousands of watts.

**Spatium™ Amplifiers**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Frequency (GHz)</th>
<th>Psat (W)</th>
<th>Small Signal Gain (dB)</th>
<th>Power Gain (dB)</th>
<th>PAE (%)</th>
<th>Vd (V)</th>
<th>Power (VAC)</th>
<th>ECCN</th>
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<td>50</td>
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<td>25</td>
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</tbody>
</table>

Parameters at 40°C baseplate

**Benefits of Spatium™ Technology**

- Ultra-broadband operation: up to decade BW
- Efficiently combines 10, 16, 20 or 32 amplifiers
- 93% combining efficiency / high PAE
- Smaller than comparable TWTAs
- High reliability: 7+ years compared to TWTAs
- No limiting microstrip or other legacy architectures
- Graceful degradation
- Lower supply voltage: 4-48V
- No warm-up
- Higher output performance

**Applications**

- Electronic warfare
- Radar systems
- Satellite & terrestrial communications
- Test & measurement

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