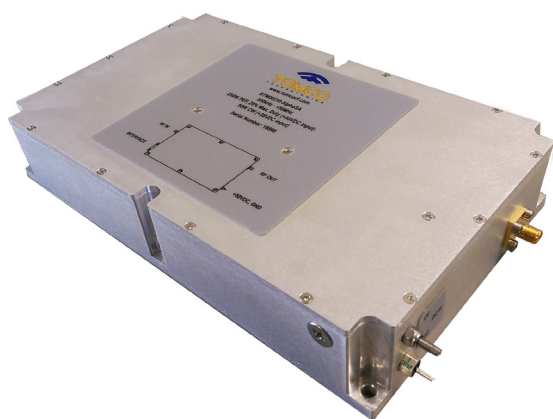


BTM00300-GammaS 5MHz-310MHz 300W Pulsed/30W CW

- Scientific and Industrial Applications



The BTM-GammaS series is a range of class AB RF power amplifier modules covering the 5MHz to 310MHz frequency range.

- Rugged, solid-state design - high reliability
- Extremely high phase and amplitude stability
- Very fast pulse rise/fall times
- High linearity
- Very low interpulse noise
- Competitively priced

Can be supplied as amplifier module only or with optional heatsink and cooling fans

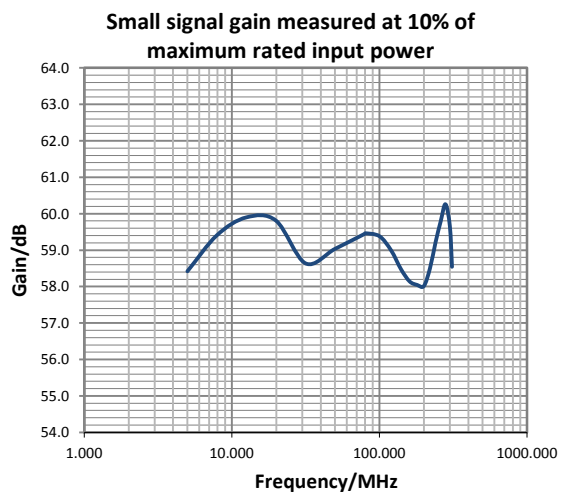
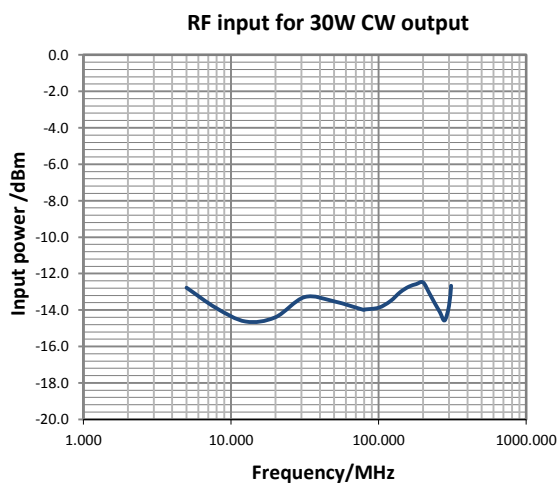
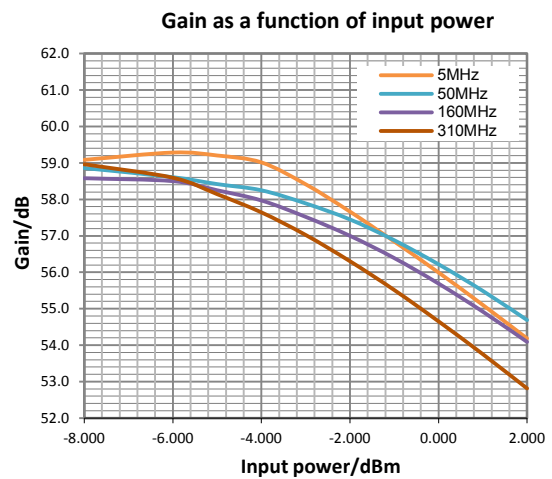
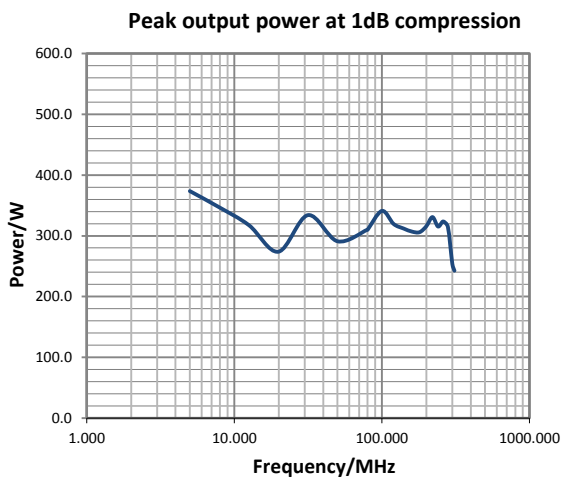
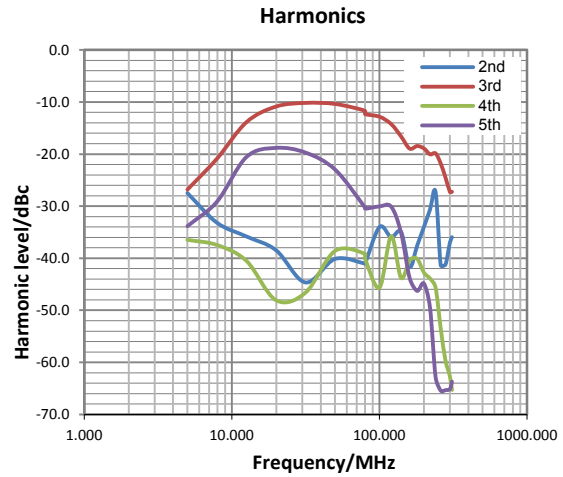
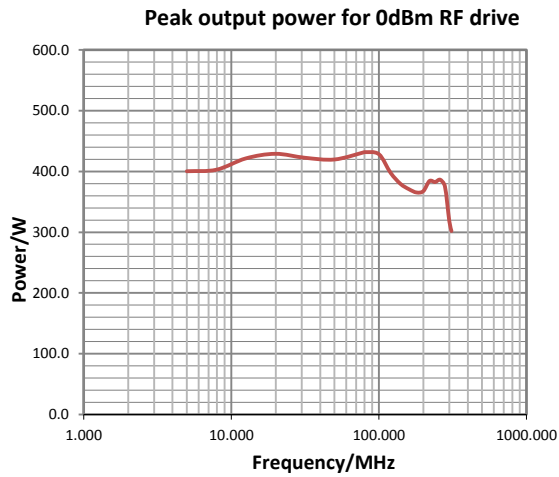
RF Specifications

| | |
|--------------------------------------|--|
| Rated power in pulsed mode | 300W minimum PEP for input power of 0dBm |
| Rated power in CW mode | 30W minimum CW operation is automatically available at output power level less than approx. 10% of full rated power |
| P1dB | 240W minimum in pulsed mode 24W minimum in CW mode Minimum output power at P1dB compression |
| Gain | 55dB minimum in pulsed mode 45dB minimum in CW mode |
| Type | Class AB MOSFET |
| Frequency | 5MHz-310MHz |
| Gain flatness | ±2dB maximum (measured at 1/10th rated output power) |
| Max. duty cycle in pulsed operation | 20% Maximum GATE duty cycle in pulsed mode |
| Max. pulse width in pulsed operation | 300ms Maximum GATE pulse width in pulsed mode |
| Pulse droop | 0.5dB maximum Measured at max. pulse width at P1dB level |
| Pulse rise and fall times | Risetime: 200ns typical Falltime: 100ns typical using a pre-gated RF input signal |
| Gate rise and fall times | Risetime: 300ns typical Falltime: 150ns typical |
| Gate delay | Rising edge: 1µs typical Falling edge: 500ns typical Rising edge measured from rising edge of GATE pulse to 90% RF output voltage. Falling edge measured from falling edge of GATE pulse to 10% RF output voltage |
| Harmonics | Odd: -20dBc typical, -10dBc max. Even: -30dBc typical, -20dBc max. |
| Spurious | <-70dBc maximum |
| Output noise (blanked) | <10dB above thermal (100kHz bandwidth) |
| Phase change/power | <10° from -40dB to full power |
| Phase stability | <1° across 300ms pulse |
| Input/output impedance | 50 Ω nominal |
| Load VSWR | Tolerates at least 3:1 @ full rated power without damage External mismatch protection is recommended No internal mismatch protection included |
| Gain control range | 10dB minimum for 0-5V control voltage Control via parallel interface |
| RF Input | 0dBm nominal, +10dBm for no damage for full rated power in pulsed mode CW mode automatically available at RF input of approx. <-10dBm |
| GATE (blanking) | Logic low = Blank, logic high = unblank. CMOS and TTL compatible |

Electrical Specifications

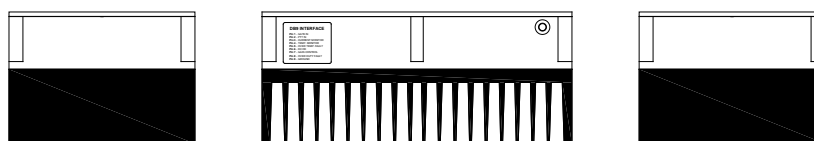
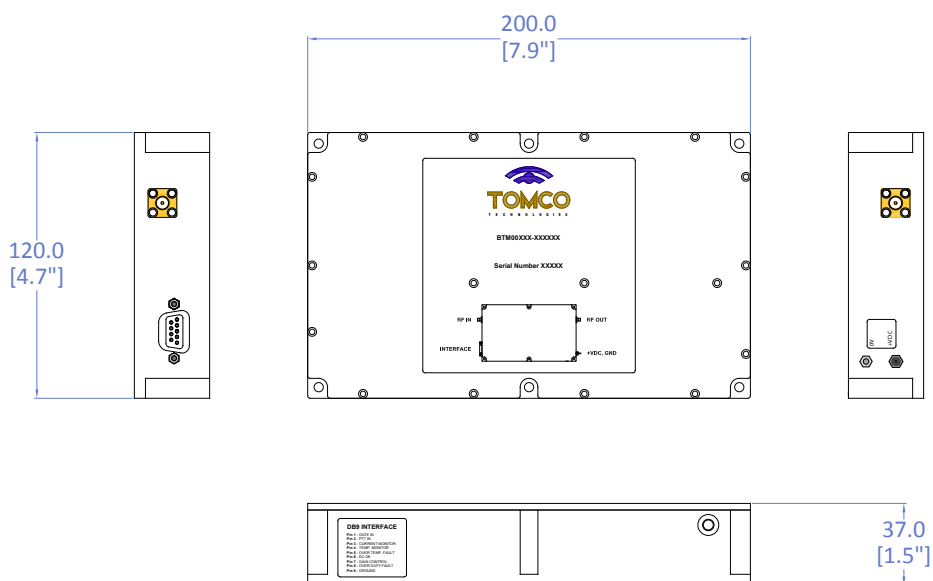
| | |
|-------------------|------------------------|
| DC supply voltage | 50V max. at approx. 5A |
| DC connection | Solder pin |

Typical Performance Plots

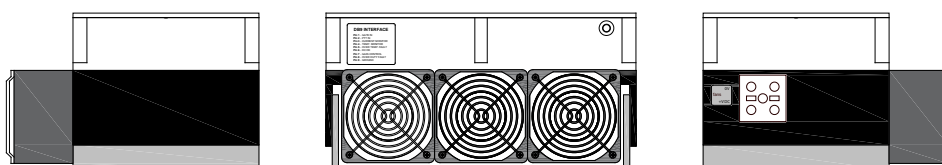


Mechanical Specifications

| | |
|--------------------------|---|
| Connectors | RF IN: SMA RF OUT: SMA INTERFACE: DB9 female |
| Dimensions | Module only: 200mm (7.9") x 120mm (4.7") x 37mm (1.5") Module with heatsink: 200mm (7.9") x 120mm (4.7") x 85mm (3.3") Module with heatsink and fan assembly: 200mm (7.9") x 168mm (6.6") x 85mm (3.3") |
| Weight | approx. 1.3kg (2.8lbs), module only |
| Enclosure classification | IP20 |



With optional heatsink



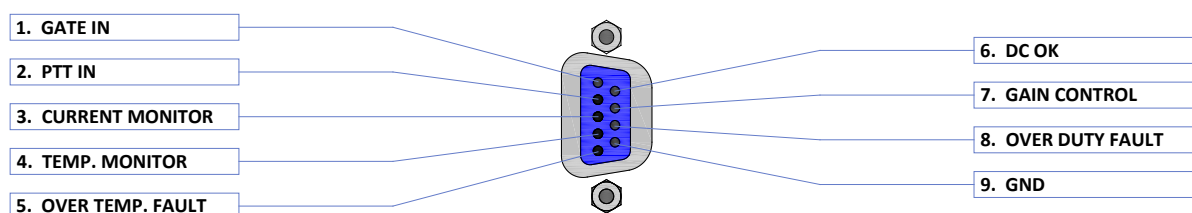
With optional heatsink and fan assembly

Protection

| | |
|-------------------------|---|
| Over temperature | Self-resetting shutdown protection activates if thermal limits are exceeded |
| Reverse polarity | Reverse-current protection circuitry |
| Input/output transients | High voltage transient protection circuitry |

Monitoring and Control

| | |
|--------------------|--------------------------|
| Parallel Interface | 9-pin D-connector female |
|--------------------|--------------------------|



Environmental

| | |
|--------------------------------|---|
| General | Intended for use only in controlled, indoor environment. Non-consumer product for industrial and scientific use |
| Cooling | Requires heatsink and/or external fan (optional extras) |
| Operating temperature | +5°C to +40°C |
| Storage temperature | -20°C to +60°C |
| Humidity | 80% for temperature up to 31°C, decreasing linearly to 50% relative humidity at 40°C |
| Operating altitude | Up to 2000m |
| Pollution degree | 2 |
| Electromagnetic compatibility | In line with IEC61326-1:2012 ISM sub-assembly, Group 1, Class A |
| Safety | In line with IEC61010-1:2010 |
| Electromagnetic field strength | In line with ICNIRP Guidelines: 1998, occupational limits |

Change record

| Document/Issue number | Originator | Date | Change |
|-----------------------|------------|----------|----------|
| DS006715A | JR | 21/08/18 | Original |
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