## PRECISION POWER ANALOG PRODUCT REFERENCE GUIDE FOR

# **DRONE APPLICATIONS**



# "M/883" AND "M" GRADE LINEAR AMPLIFIERS

| Model     | Supply Voltage<br>max (V) | Output Current continuous (PEAK) within SDA (A) | Power Bandwidth k(Hz) | Slew Rate<br>(V/µs) | Power Dissipation<br>(W) | Quiescent Current<br>max (mA) | Package         |
|-----------|---------------------------|-------------------------------------------------|-----------------------|---------------------|--------------------------|-------------------------------|-----------------|
| PA85M     | 450                       | .2                                              | 300                   | 1000                | 30                       | 25                            | 8-pin TO-3 (CE) |
| PA84M/88  | 300                       | 0.04 (0.05)                                     | 250                   | 200                 | 17.5                     | 7.5                           | 8-pin TO-3 (CE) |
| PA83M/883 | 300                       | 0.075 (0.1)                                     | 60                    | 30                  | 17.5                     | 8.5                           | 8-pin TO-3 (CE) |
| PA08M/883 | 300                       | 0.15 (0.2)                                      | 90                    | 30                  | 17.5                     | 8.5                           | 8-pin TO-3 (CE) |
| PA07M/883 | 3 100                     | 5                                               | 18                    | 5                   | 67                       | 30                            | 8-pin TO-3 (CE) |
| PA10M/883 | 3 90                      | 5                                               | 15                    | 3                   | 67                       | 30                            | 8-pin TO-3 (CE) |
| PA12M/883 | 3 90                      | 10 (15)                                         | 20                    | 4                   | 125                      | 50                            | 8-pin TO-3 (CE) |
| PA61M/883 | 3 90                      | 10                                              | 16                    | 2.8                 | 97                       | 10                            | 8-pin TO-3 (CE) |
| PA09M/883 | 80                        | 4.5 (5)                                         | 150                   | 220                 | 78                       | 85                            | 8-pin TO-3 (CE) |
| PA51M/883 | 72                        | 10                                              | 16                    | 2.6                 | 97                       | 10                            | 8-pin TO-3 (CE) |
| PA73M/883 | 3 60                      | 5                                               | 23                    | 2.6                 | 67                       | 5                             | 8-pin TO-3 (CE) |
| PA74M     | 40                        | 2.5 (2 channels)                                | 13.6                  | 1.4                 | 36 per channel/60        | 40                            | 8-pin TO-3 (CE) |
| PA02M/883 | 38                        | 5                                               | 350                   | 20                  | 48                       | 40                            | 8-pin TO-3 (CE) |
|           |                           |                                                 |                       |                     |                          |                               |                 |

# "M" GRADE PRECISION VOLTAGE REFERENCES

| Model   | Output<br>(V) | Initial Error<br>(±mV) | Temperature Coefficient (ppm/°C) | Noise<br>(μVp-p) | Line Regulation<br>(ppm/V Typical) | Package    |
|---------|---------------|------------------------|----------------------------------|------------------|------------------------------------|------------|
| VRE102M | ±10           | ±1.7                   | 1.09                             | 6                | 3                                  | DIP14 (HC) |
| VRE104M | +4.5          | 0.8                    | 1.48                             | 3                | 6                                  | DIP14 (HC) |
| VRE107M | ±5            | 0.9                    | 1.33                             | 3                | 6                                  | DIP14 (HC) |
| VRE204M | 4.5           | 0.8                    | 1.48                             | 3                | 6                                  | LCC20 (HD) |
| VRE210M | 10            | 0.8                    | 1.11                             | 6                | 3                                  | LCC20 (HD) |

## RADIATION TOLERANT TESTING CAPABILITIES

Apex Microtechnology's radiation tolerant "R" grade devices are specifically built and tested to maintain operability after exposure to certain levels of radiation. Apex radiation tolerant devices include radiation characterization data for TID (HDR & ELDRS) and SEE as well as device lot traceability documentation and reporting.



For more information about Apex radiation tolerant "R" grade devices or for additional radiation testing options & capabilities offered by Apex please submit our Radiation - Tolerant Inquiry Form by scanning the QR code.

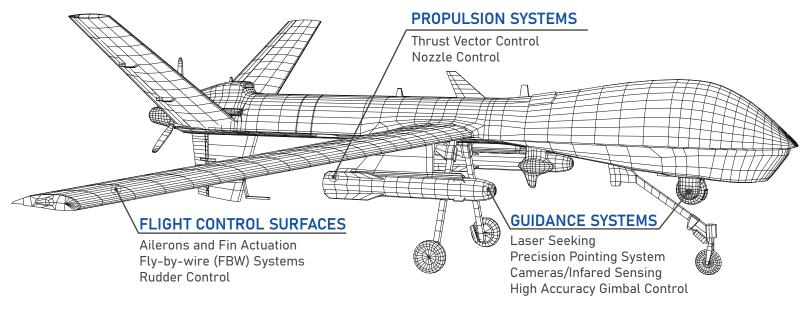
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# **DRONE APPLICATIONS**

# MISSION CRITICAL SYSTEMS DRIVEN BY APEX MICROTECHNOLOGY



### SILICON CARBIDE INTEGRATED POWER MODULES

Apex Microtechnology offers a dedicated range of integrated power modules that feature rugged hi-rel packaging, a compact footprint, and exceptional power density, all converging to redefine the cutting edge of integrated power modules. Apex is seamlessly integrated into propulsion, flight control, and guidance systems by providing commercial off-the-shelf analog solutions that meet the size, weight, and power (SWAP) requirements from the industry.

| Specification Parameter    | SA111                        | SA310                   | SA110                   |
|----------------------------|------------------------------|-------------------------|-------------------------|
| Output Current Continuous  | 32A                          | 30A                     | 28A                     |
| Output Current PEAK        | 80A                          | 80A                     | 40A                     |
| Supply Voltage Operation   | 650V                         | 600V                    | 400V                    |
| Internal Power Dissipation | 56W                          | 111W                    | 89W                     |
| Output Architecture        | Single-Phase                 | 3-Phase                 | Single-Phase            |
| Switching Frequency        | 1MHz                         | 400kHz                  | 400kHz                  |
| Package Style              | 52-pin QFP,<br>Surface Mount | 16-pin KR,<br>Power DIP | 12-pin DP,<br>Power SIP |



#### APEX MICROTECHNOLOGY INC.

5980 N Shannon Road Tucson, Arizona 85741 USA T: +1.520.690.8600

F: +1.520.888.3329

#### **SALES SUPPORT**

Toll Free: +1.800.862.1032 eMail: custserv@apexanalog.com

#### **TECHNICAL SUPPORT**

Toll Free: +1.800.546.2739

eMail: Apex.Support@apexanalog.com

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