

We Provide Solutions....

AN ISO 9001:2015 COMPANY



POWER SUPPLY COMPATIBILITY & BACKUP UNIT (PSCBU)



GROW CONTROL is a research-driven power electronics organization that integrates technology, innovation, and engineering to transform concepts into world-class products and solutions.

GROW CONTROL has developed resonant topology-basedPower Supply Compatibility Unit (PSCBU) for defense and aerospace applications. Our custom designed PSCBUs operate at very high frequency. These converters generate minimum EMI. High frequency resonant operation makes the converters very compact, light weight and reliable.

Resonant conversion eliminates switching losses, thereby generates less heat, effective thermal management facilitates the converters to operate over wide ambient temperature range.

Power Supply Compatibility & Back-up Unit Features:

- Main feature of PSCBU is it provides 100mSec back-up time during power interruptions.
- Wide Input Voltage Range:
 - Input range is 16-50VDC to meet MIL-STD-704F compatibility.
- **High Efficiency**: Up to **85% efficiency**including back-up capacitors charging of unit for minimal energy loss.
- Isolated DC-DC converter topology.
- **Advanced Protection Mechanisms**: Inbuilt protections Over-Voltage, Over-Current, Short-Circuit, and Over Temperature available in all units.
- Compact & Lightweight: Optimized for space-constrained applications
- Ruggedized Design: Compliances to MIL-STD Environmental Specifications (Static & Dynamic) & EMI/EMC
- Indigenous Technology: Fully designed and manufactured in INDIA
- Adjustable output voltage for versatile applications



Applications:

- Military & Aerospace Systems
- Directed Energy Weapons (DEW)
- Missile Sub-Systems
- Radar Power Supplies
- Laser Diodes
- Electronic Warfare (EW)

Customization Options:

GROW CONTROL offers the following customization options to meet the unique needs of various industries:

- Output Voltage & Power Adjustments
- Enhanced Protection Features
- Additional Monitoring and Control Interfaces
- Modular Form Factors for Easy Integration

Our engineering team collaborates with customers to design and develop solutions tailored to their specific operational and environmental requirements

Why Choose GROW CONTROL?

- **Indigenous Expertise**: *GROW CONTROL* indigenous technology is backed by decades of experience in power electronics, providing PSCBU solutions that meet the highest standards in defense, aerospace, and commercial sectors.
- **Precision & Stability**: PSCBU provides highly stable and precise voltage regulation with low ripple and noise, ensuring optimal performance of TWT amplifiers in high-frequency applications.
- **Energy Efficient**: Designed for high efficiency, the PSCBU minimizes power loss and heat dissipation, reducing operational costs and enhancing system longevity.
- **Rugged Design**: Compliant with military standards for shock, vibration, and environmental conditions, the PSCBU is built for reliability in the toughest environments.
- **Customer Support**: From design and customization to installation and support, *GROW CONTROL* provides comprehensive customer support to ensure seamless integration and operation.



Technical Specification:

| Model No. | GC28V8ADCDC |
|---|---|
| Input Supply Variation Range (DC) | 22V to 29.5V DC(Testing) 16V to 50V DC (Design Capability) |
| Nominal Input Voltage | 28V DC |
| Input In-rush current | 2.5x rated input current |
| Capacitor Holdup / Backup time (minimum) | 100msec @ 8A load current (MIL-STD-704F). (Note: Initial charging time of backup capacitor bank is 3-5 Sec with charging current of 1A) |
| Output Voltace at nominal input voltage | 28±1%V DC |
| Output Voltage during all the tests as per MIL-STD-704F | 24V TO 32V (Except for Test Power Failure for 7 seconds i.e. MIL-HDBK-704-8, Test Method LDC 601) |
| Maximum output current | 8A Continuous for 8 hours |
| capability fo | |
| functional Performance | |
| Maximum output current | 11 A Continuous for 15 min |
| capability for peak performance | |
| Output Power rating | 224W Nominal (continuous) at full load (8A), 308WPeak power (for 15 minutes) at peak load (11 A). design capability 448W at 16A load. |
| Current at which short circuit protection to be enabled | If it crosses >12A load current |
| Allowed Output tupple Voltage (As per MIL-HDBK- 704-8, LDC 104) | ≤±100mV (RMS) |
| Allowed Output Noise Voltage (Max) (As per MIL-HDBK-704-8, LDC 103) | ≤± 100 mV |
| Load & Line Regulation | ≤ 1% |
| Minimum Efficiency | ≥ 85% |
| Maximum restart time | ≤ 100msec |
| EMI/EMC specifications | As per MIL-STD-461E & G specifications |
| Power supply Compatibility | As per MIL-STD-704F specifications |
| Input / Output isolation (min) | 500V DC |



| Input / Base Plate isolation (min) | 500V DC |
|-------------------------------------|--|
| Output / Base Plate isolation (min) | 500V DC |
| Operating Temperature | -40°C to +71°C |
| Storage Temperature | -55°C to +85°C |
| Chassis material | AL-HF-15 T652 (CEMILAC type approved) |
| Dimensions | (L X W X H) (150mm x 150mm x 65mm) \pm 1mm |
| Weight | ≤2 Kgs |



OUR CLIENTS



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