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Radiation Tolerant 3-Phase DC Motor Torque Controllers

Product Brief

Models: PW-82540R0



The PW-82540R0 is a high performance radiation tolerant torque loop controller designed to precisely regulate current in the motor windings of 3-phase brushless DC motors.

Key Features

- Self-Contained 3-Phase Motor Controller
- Operates as Current or Voltage Controller
- 1, 3, or 10 Amp Output Current
- 1.5% Linearity
- 3% Current Regulating Accuracy
- User-Programmable Compensation
- 10kHz - 100kHz PWM Frequency
- Complementary Four Quadrant Operation
- Holding Torque Through Zero Current
- Cycle-by-Cycle Current Limit
- Designed to Meet the Following Radiation Levels:
  - 100kRad Total Dose
  - 36MeV SEU

Benefits

- Ideal for Harsh Military/Space Environments, Able to Endure Extreme:
  - Shock
  - Vibration
  - Temperature (-55°C to +125°C)

Provides Constant Output Performance for Switching Frequencies from DC to 50kHz

- Powerful MOSFET Output Stage Provides:
  - High Speed
  - High Current
  - High-Efficiency

Applications

- Robotic Arms
- Electromechanical
- Valve Assemblies
- Actuator Systems
- Antenna and Solar Panel Positioning
- Fan and Blower Motors for Environmental Conditioning
- Reaction Wheels
- Compressor Motors for Cryogenic Coolers

WARNING: ITAR CONTROLLED PRODUCT
The product(s) referenced on this data sheet or product brief and certain related technical data is subject to the U.S. Department of State International Traffic in Arms Regulations (ITAR) 22 CFR 120-130 and may not be exported without the appropriate prior authorization from the Directorate of Defense Trade Controls, United States Department of State. This datasheet includes only basic marketing information on the function of the product and therefore is not considered technical data as defined in 22CFR 120.10.

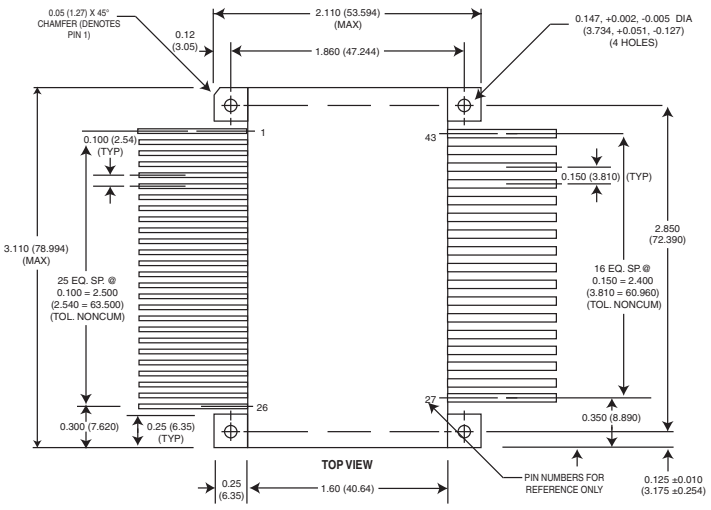
Custom Design Capability - PDC can customize designs for all cards, ranging from simple modifications of standard products to fully customized solutions for commercial, military, aerospace, and industrial applications.

For more information: powerdevicecorp.com/PWR-82540R

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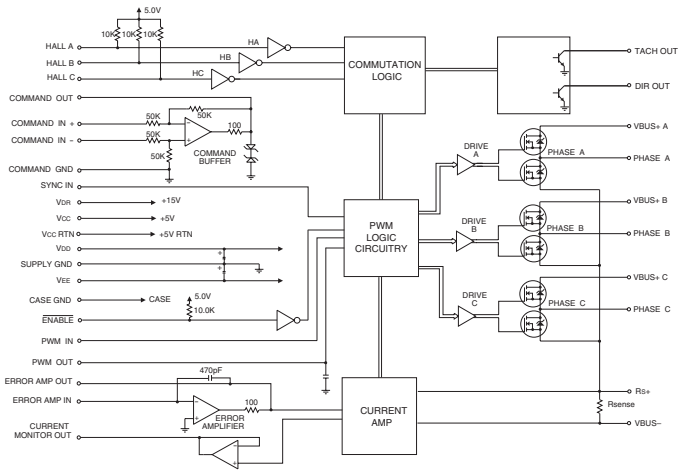
Printed on recycled paper.

Mechanical Outline



NOTES:
1. DIMENSIONS IN INCHES (MM). TOL = ±0.005 (±0.127)
2. LEAD IDENTIFICATION NUMBERS ARE FOR REFERENCE ONLY.

Block Diagram



Ordering Information

PW-82540RX-X X X X

Supplemental Process Requirements :
- L = 100% Pull Test
- Q = 100% Pull Test and Pre-Cap Source Inspection
- Y = 100% Pull Test and One Lot Date Code
- Z = 100% Pull Test, One Lot Date Code, and Pre-Cap Source Inspection

Other Criteria:
- 0 = No X-Ray
- 1 = X-Ray

Process Requirements:
- 0 = Standard PDC Processing, no Burn-In
- 1 = MIL-PRF-38534 Compliant, 320 Hours Burn-In
- 2 = Standard PDC Processing,.160 Hours Burn-In
- 3 = MIL-PRF-38534 Compliant, 320 Hours Burn-In, with PIND Testing
- 4 = MIL-PRF-38534 Compliant, 320 Hours Burn-In, with Solder Dip
- 5 = MIL-PRF-38534 Compliant, 320 Hours Burn-In, with Solder Dip & PIND Testing

Temperature Range:
- 1 = -55°C to +125°C
- 2 = -40°C to +85°C
- 3 = 0°C to +70°C
- 4 = -55°C to +125°C with Variables Test Data
- 5 = -40°C to +85°C with Variables Test Data
- 8 = 0°C to +70°C with Variables Test Data

Rating/Package:
- 0 = 10A/Flat Package

Notes:
1. Devices are not compliant with the RHA requirements stipulated in MIL-PRF-38534, Appendix G. Parameters specified are derived from initial qualification testing and component (ASIC) manufacturers published data.
2. These products contain tin-lead solder finish as applicable to solder dip requirements.

Standard PDC Processing For Hybrid and Monolithic Hermetic Products		
Test	MIL-STD-883	
	Method(s)	Condition(s)
Inspection	2009, 2010, 2017, and 2032	—
Seal	1014	A and C
Temperature Cycle	1010	C
Constant Acceleration	2001	3000g
Burn-In	1015(note1), 1030 (note 2)	See Spec Table in Data Sheet

Notes:
1. For Process Requirement "B" (refer to ordering information), devices maybe non-compliant with MIL-STD-883, Test Method 1015, Paragraph 3.2. Contact Factory for details.
2. When applicable.

For ordering assistance and technical support,
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Power Device Corporation

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