Permanent magnet synchronous motors (PMSM) are typically used for high-performance and high-efficiency motor drives. High-performance motor control is characterized by smooth and accurate rotation over the entire speed range of the motor. NXP provides a comprehensive development ecosystem to support a rapid design of motor control devices that integrates PMSM.

3 Phase PMSM Block Diagram

Recommended Products for 3 Phase PMSM

| MCU | S32K3 Microcontrollers for General-Purpose |
**Power stage driver**
- MC33937: 3-Phase Field Effect Transistor Pre-Driver
- GD3100: Advanced Single-Channel Gate Driver for Insulated Gate Bipolar Transistors and Silicon Carbide MOSFETs

**Motor Control Software**
- FreeMASTER Run-Time Debugging Tool
- RTCESL: Real Time Control Embedded Software Motor Control and Power Conversion Libraries
- Model-Based Design Toolbox (MBDT)
- MCATSW: Motor Control Application Tuning (MCAT) Tool

**Voltage regulator**
- MC33730: Power Supply with Multiple Linear Regulators
- TJA1042: High-Speed CAN Transceiver with Standby Mode
- MC33903: SBC Gen2 with High-Speed CAN and LIN
- MC33904: System Basis Chip Gen2 with High Speed CAN
- MC33905: SBC Gen2 with High-Speed CAN and LIN
- MC34717: 5.0 A, 1.0 MHz Integrated Dual Switch-Mode Power Supply

**Security (EdgeLock Discrete)**
- EdgeLock® SE050: Plug & Trust Secure Element Family – Enhanced IoT security with high flexibility

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View our complete solution for **Permanent Magnet Synchronous Motor (PMSM)**.

**Note:** The information on this document is subject to change without notice.