

XT32F204/5x

Description

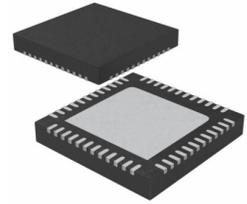
The XT32F205x and XT32F204x families integrate an Arm Cortex-M0 core and sensor, actuation, power management and communication functions. They offer up to 128KB Flash memory to future-proof software application development.

XT32F205x provides a highly integrated 3-phase BLDC motor driver solution with Charge Pump for automotive and robotics applications such as wiper, window lift, sunroof, pump, and robotic actuator. XT32F205x is compatible with XT32F204x which is tailored for H-Bridge BDC motor driver solution.

Both XT32F204x and XT32F205x families provide one full duplex serial interface with LIN support and two on-chip temperature and battery voltage measurement units.

XT32F205/4x includes one 10-bit ADC with 9 multiplexed analog inputs to process up to 4 HV voltage monitoring inputs. These HV voltage inputs don't need external voltage dividers to reduce external component cost. In addition, XT32F205/4x provides another 10-bit ADC with 12 multiplexed inputs for voltage and temperature supervision.

XT32F205x comes with full Arm tool chain enablement as well as a motor control algorithm reference library.



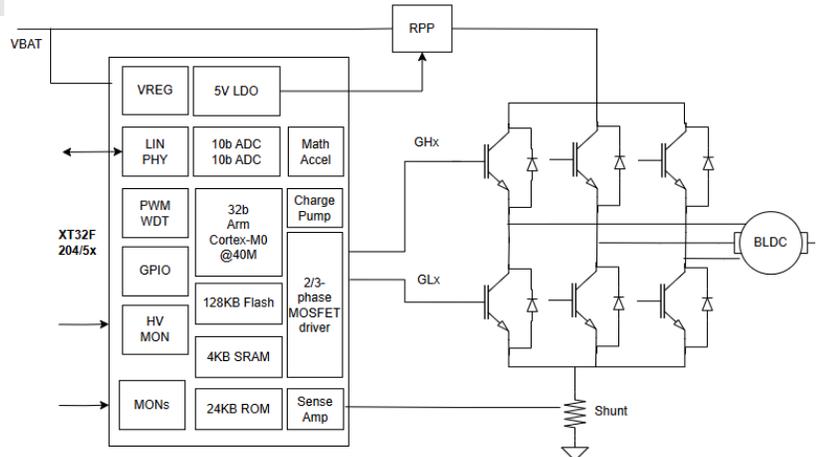
Applications

- Windshield Wiper
- Sunroof
- Window Lift
- Pump
- Robotic Actuator

Key Features

- Arm Cortex-M0 CPU up to 40Mhz
- Math co-processor with divider for 32-bit division
- On-chip oscillator & PLL
- Up to 128KB Flash memory
- 4KB EEPROM emulated in Flash
- 4KB RAM, 24KB ROM
- Two-phase H-bridge MOSFET driver
- Single protected high side switch
- PWM adaptive control for MOSFET driver
- 5-40V power supply input
- 5V power supply output
- Diagnostics and protection functions
 - UVLO
 - Over temperature detection

Block Diagram



Communication and Sensing Features

- Integrated LIN 2.2 transceiver
- Sensing and measurement units
 - 9 channel 10-bit ADC for HV inputs
 - 12 channel 10-bit ADC for voltage and temperature measurements
- Current sensing amplifier for shunt current sensing
- Independent programmable window watchdog

Overview for XT32F204/5x Product Variants

Product	Core Freq (Mhz)	Flash (KB)	EEPRO M Emu (KB)	SRAM (KB)	ROM (KB)	LIN PHY	3-ph Driver	2-ph Driver	Tj max (C)	Package
XT32F2044	40	64	4	4	24	1	0	1	150	QFN-48-31
XT32F2045	40	128	4	4	24	1	0	1	150	QFN-48-31
XT32F2048	40	64	4	4	24	1	0	1	175	QFN-48-31
XT32F2049	40	128	4	4	24	1	0	1	175	QFN-48-31
XT32F2054	40	64	4	4	24	1	1	0	150	QFN-48-31
XT32F2055	40	128	4	4	24	1	1	0	150	QFN-48-31
XT32F2058	40	64	4	4	24	1	1	0	175	QFN-48-31
XT32F2059	40	128	4	4	24	1	1	0	175	QFN-48-31

Device Package Details

- QFN-48 7mm x 7mm
- ESD 4KV HBM capability

Qualification

- Temperature range: Tj -40C up to 175C
- ASIL-B safety ready

Why Choose Xscend System Base Chip Solutions?

Automotive & Industrial Focus: Our products are tailored to meet the specific needs of automotive and industrial applications, including high data transfer speeds, power efficiency, and rugged reliability.

Cutting-Edge Innovation: With a strong emphasis on integrated sensing, HV drive, low-power and sensor integration, Xscend delivers advanced solutions that support the latest industry standards.

Cost-Efficiency: Our solutions reduce BOM costs and increase integration flexibility, helping customers achieve optimal performance at lower cost.

Discover more about Xscend's innovative semiconductor solutions at [xscend.com](https://www.xscend.com).

