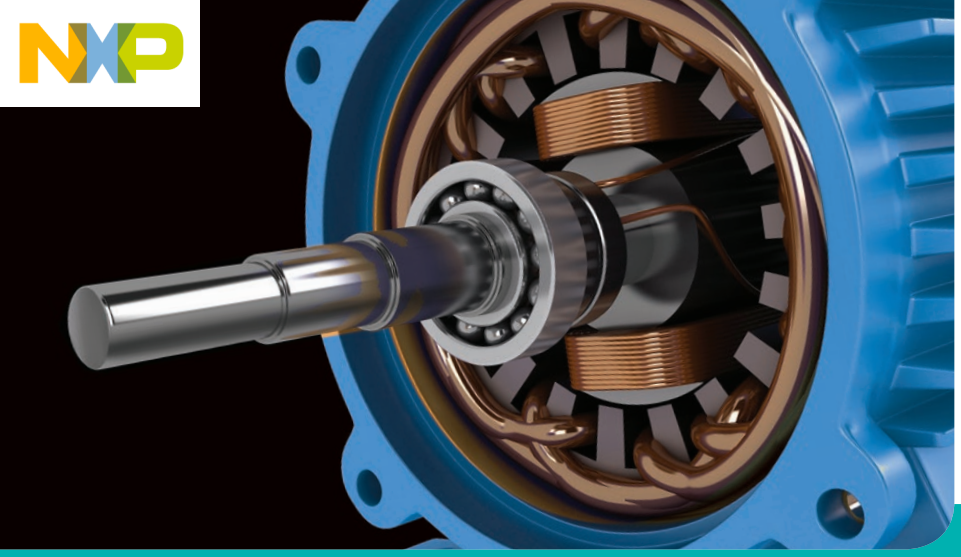

Robust,
Reliable
Performance

Motor Driver Product Selector

For system designers who want more efficient motor operation with variable speed and sensorless control, NXP offers H-bridge, brushed and brushless DC motor drivers required to complete system design.

OVERVIEW

Motor types that most effectively meet the requirements for high efficiency include AC induction motors (ACIM), permanent magnet synchronous motors (PMSM), brushless DC motors (BLDC) and switched reluctance motors (SR). However, brushed DC motors are still used extensively and benefit from more efficient drive circuitry.

Supporting a broad portfolio of microcontrollers (MCUs) for motion control, NXP's analog and mixed signal portfolio addresses applications for continuous operation in harsh environments/applications where high reliability is desired.

The analog and mixed signal portfolio for these applications includes low voltage products designed for both commercial and industrial battery applications and medium voltage and gate drivers for automotive and industrial applications. These designs use NXP's unique SMARTMOS technology.

BENEFITS OF SMARTMOS TECHNOLOGY

- Cost-effective high-voltage (110 V) power analog embedded system process platform
- Low RDS(on)*A (30 mΩ–mm2) for thermal efficiency in high-current applications
- High precision for sensor interface integrated with power applications
- Advanced isolation capability (-40 V) and robust system transient ESD/EMC immunity
- Low-power devices to reduce overall system power consumption
- Extreme temperature operation for harsh application environments (-40 to +175°C)

LOW VOLTAGE MOTOR DRIVER SELECTOR GUIDE TARGETING 5–12 V BATTERY BUS APPLICATIONS

Part #	Motor Type	Out	Operation Voltage (V)	Peak Current (A)	LL (V)	Sleep (µA)	Freq. (kHz)	Temp. Range °C	Package Style and (LxW mm) Footprint
MPC17510AEJ	Brushed DC/Actuator Drive	2+1	2.0–15	3.8	4.0–5.5	-	200	-30 to +65	TSSOP20-EP (6.6 x 6.4)
MPC17511EP	Brushed DC/Actuator Drive	2+1	2.0–6.8	3.0	2.7–5.7	-	200	-20 to +65	QFN 24 (4 x 4)
MPC17529EJ	Stepper/Brushed DC	4	2.0–6.8	1.4	2.7–5.6	-	200	-20 to +65	TSSOP20-EP (6.6 x 6.4)
MPC17531ATEJ	Stepper/Brushed DC	4	2.0–8.6	1.4	2.7–3.6	2.0	200	-20 to +65	TSSOP20-EP (6.6 x 6.4)
MPC17531ATEP	Stepper/Brushed DC	4	2.0–8.6	1.4	2.7–3.6	2.0	200	-20 to +65	QFN 24 (4 x 4)
MC34933EP	Stepper/Brushed DC	4	2.0–7.0	1.4	2.7–5.5	-	200	-20 to +85	QFN 16 (3 x 3)
MPC17C724EP	Stepper/Brushed DC	4	2.7–5.5	0.8	2.7–5.5	1.0	200	-20 to +85	QFN 16 (3 x 3)

MEDIUM VOLTAGE MOTOR DRIVER SELECTOR GUIDE TARGETING 5–36 V BATTERY APPLICATIONS

Part #	Motor Type	Out	Operation Voltage (V)	Peak Current (A)	SPI	Sleep (µA)	Freq. (kHz)	Temp. Range °C	Package Style and (LxW mm) Footprint
MC33886PVW	Brushed DC	2	5.0–28	5.0	-	-	10	-40 to +125	HSOP 20 (16 x 14.4)
MC33887APVW	Brushed DC	2	5.0–28	5.0	-	50	10	-40 to +125	HSOP 20 (16 x 14.4)
MC33887PEK	Brushed DC	2	5.0–28	5.0	-	50	10	-40 to +125	SOICW-EP 54 (18 x 10.3)
MC33887PFK	Brushed DC	2	5.0–28	5.0	-	50	10	-40 to +125	SOICW-EP 54 (18 x 10.3)
MC33899VW	Brushed DC	2	5.0–26.5	4.2/5.3/6.2/9.0	Y	145	11	-40 to +125	HSOP 30 (16 x 14.4)
MC33926PNB	Brushed DC	2	5.0–28	5.0	-	50	20	-40 to +125	PQFN 32 (8 x 8)
MC33931EK	Brushed DC	2	5.0–28	5.0	-	50	11	-40 to +125	SOICW-EP 32 (11 x 10.3)
MC33931VW	Brushed DC	2	5.0–28	5.0	-	50	11	-40 to +125	HSOP 44 (16 x 14.4)
MC34931EK	Brushed DC	2	5.0–36	5.0	-	18	11	-40 to +85	SOICW-EP 32 (11 x 10.3)
MC34931SEK	Brushed DC	2	5.0–36	5.0	-	18	20	-40 to +85	SOICW-EP 32 (11 x 10.3)
MC33932EK	Brushed DC/Stepper	4	5.0–28	5.0	-	50	11	-40 to +125	SOICW-EP 54 (18 x 10.3)
MC33932VW	Brushed DC/Stepper	4	5.0–28	5.0	-	50	11	-40 to +125	HSOP 44 (16 x 14.4)
MC34932EK	Brushed DC/Stepper	4	5.0–36	5.0	-	18	11	-40 to +85	SOICW-EP 54 (18 x 10.3)
MC34932SEK	Brushed DC/Stepper	2	5.0–36	5.0	-	18	20	-40 to +85	SOICW-EP 54 (18 x 10.3)
MC33HB2000EK	Brushed DC	2	5.0–36	5.4 / 7.0 / 8.8 / 10.7	Y	50	8.0 SELECT	-40 to +125	SOICW-EP 32 (11 x 10.3)
MC33HB2000FK	Brushed DC	2	5.0–36	5.4 / 7.0 / 8.8 / 10.7	Y	50	8.0 SELECT	-40 to +125	PQFN 32 (8 x 8)
MC33HB2001EK	Brushed DC	2	5.0–36	5.4 / 7.0 / 8.8 / 10.7	Y	50	8.0 SELECT	-40 to +125	SOICW-EP 32 (11 x 10.3)
MC33HB2001FK	Brushed DC	2	5.0–36	5.4 / 7.0 / 8.8 / 10.7	Y	50	8.0 SELECT	-40 to +125	PQFN 32 (8 x 8)

MOTOR GATE DRIVER AND SWITCH GUIDE TARGETING 5–60 V APPLICATIONS

Part #	Motor Type	Out	Operation Voltage (V)	Gate Drive Current (A)	SPI	Sleep (µA)	Freq. (kHz)	Temp. Range °C	Package Style and (LxW mm) Footprint
MC33883HEG	H-Bridge/DC Brushed	4	5.5–55	1.0	-	10	100	-40 to +125	SOIC20 (7.8 x 7.6)
MC33937AEK	Brushless DC	6	6.0–58	1.0	Y	30	20	-40 to +135	SOIC54 (10 x 18)
MC34937PEK	Brushless DC	6	6.0–58	1.0	Y	30	20	-40 to +125	SOIC54 (10 x 18)
MC33GD3000EP	Brushless DC	6	6.0–60	1.0	Y	30	20	-40 to +125	QFN 56 (8 x 8)
MC34GD3000EP	Brushless DC	6	6.0–60	1.0	Y	30	20	-20 to +105	QFN 56 (8 x 8)
MC33879APEK	Configurable LS/HS Octal Drivers	16	5.5–27.5	1.2	Y	5.0	2.0	-40 to +125	SOIC32 (11 x 10.3)
MC33880PEG	Configurable LS/HS Octal Drivers	16	5.5–24.5	0.8–2.0	Y	5.0	2.0	-40 to +125	SOIC28 (18 x 10.5)
MC33880PEW	Configurable LS/HS Octal Drivers	16	5.5-24.5	0.8-2.0	Y	5.0	2.0	-40 to +125	SOIC32 (11 x 10.3)
MC33999EK	LS Dual-Octal Drivers	32	5.0–27	0.9–2.5	Y	10	2.0	-40 to +125	SOIC32 (11 x 10.3)
MC33999EK	LS Dual-Octal Drivers	32	5.0–27	0.9–2.5	Y	10	2.0	-40 to +125	SOIC54 (17.9 x 10.3)

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