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DC Brush Motor Drivers

7V Max H-Bridge Drivers									
Part No.	ch	Supply Voltage (V)	Output Current (A)	Input Threshold Voltage (V)		Output ON Resistance (Typ) (Ω)	Output Modes	Package	
				H Level	L Level				
BD6210F	1	3.0 to 5.5	0.5	2.0 or more	0.8 or less	1.0	Forward/ Reverse/ Standby (Idle)/ Brake	SOP8	
BD6210HFP								HRP7	
BD6211F			1.0			1.0		SOP8	
BD6211HFP								HRP7	
BD6212FP			2.0			0.5		HSOP25	
BD6212HFP								HRP7	
18V Max H-Bridge Drivers									
Part No.	ch	Supply Voltage (V)	Output Current (A)	Input Threshold Voltage (V)		Output ON Resistance (Typ) (Ω)	Output Modes	Package	
				H Level	L Level				
BD6220F	1	6.0 to 15.0	0.5	2.0 or more	0.8 or less	1.5	Forward/ Reverse/ Standby (Idle)/ Brake	SOP8	
BD6221F			1.0			1.5		SOP8	
BD6222FP			2.0			1.0		HSOP25	
BD6222HFP								HRP7	
BD6225FP	2		0.5			1.5		HSOP25	
BD6226FP			1.0			1.5		HSOP25	
36V Max H-Bridge Drivers									
Part No.	ch	Supply Voltage (V)	Output Current (A)	Input Threshold Voltage (V)		Output ON Resistance (Typ) (Ω)	Output Modes	Package	
				H Level	L Level				
BD6230F	1	6.0 to 32.0	0.5	2.0 or more	0.8 or less	1.5	Forward/ Reverse/ Standby (Idle)/ Brake	SOP8	
BD6231F			1.0			1.5		SOP8	
BD6231HFP								HRP7	
BD6232FP			2.0			1.0		HSOP25	
BD6232HFP								HRP7	
BD6236FP	2		1.0			1.5		HSOP25	
BD6236FM								HSOP-M28	
BD6237FM			2.0			1.0		HSOP-M28	
BD62105AFVM	1	8.0 to 28.0	0.5			1.8		MSOP8	
BD62110JEFJ			1.0					HTSOP-J8	
BD62120JEFJ			2.0			0.65		HTSOP-J8	
BD62130JEFJ			3.0			0.35		HTSOP-J8	
BD62210AEFV	2		1.0			1.9		HTSSOP-B28	
BD60203EFV			1.7					HTSSOP-B24	
BD62220AEFV			2.0			0.65		HTSSOP-B28	
BD62221MUV			2.0			0.55		VQFN032V5050	
40V Max H-Bridge Drivers									
Part No.	ch	Supply Voltage (V)	Output Current (A)	Output Modes	Output ON Resistance (Upper + Lower) (Typ) (Ω)	Operating Temperature (°C)	Package	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BD16950EFV-C	1	5.5 to 40.0	—	Available to select High, Low or Hi-Z Output by each Output terminal.	—	−40 to +125	HTSSOP-B24	FSs	YES
BD16939AEFV-C	3 (Half 6ch)	6.3 to 32.0	1.0	Available to select High, Low or Hi-Z Output by each Output terminal.	1.35	−40 to +125	HTSSOP-B28	FSs	YES
BD16938AEFV-C	4 (Half 8ch)	6.3 to 32.0	1.0	Available to select High, Low or Hi-Z Output by each Output terminal.	1.4	−40 to +125	HTSSOP-B28	—	YES
BD16912EFV-C	1	6.0 to 18.0	3.0	Forward/Reverse/ Standby/Brake	0.36	−40 to +125	HTSSOP-B20	FSs	YES
50V Max H-Bridge Drivers									
Part No.	ch	Supply Voltage (V)	Output Current (A)	Input Threshold Voltage (V)		Output ON Resistance (Typ) (Ω)	Output Modes	Package	
				H Level	L Level				
BD63130AFM	1	8.0 to 46.2	3.0	2.0 or more	0.8 or less	0.55	Forward/ Reverse/ Standby (Idle)/ Brake	HSOP-M36	
BD63150AFM			5.0			0.3		HSOP-M36	
H-Bridge Driver High-Current									
Part No.	ch	Supply Voltage (V)	Output Current (A)	Input Threshold Voltage (V)		Output ON Resistance (Typ) (Ω)	Output Modes	Package	
				H Level	L Level				
BD62321HFP	1	6.0 to 32.0	3.0	2.0 or more	0.8 or less	1.0	Forward/ Reverse/ Standby (Idle)/ Brake	HRP7	

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*1 For more information about "ComfySIL™ Functional Safety", please refer to the reverse side of the cover.

DC Brush Motor Drivers

H-Bridge Drivers High-Speed series								
Part No.	ch	Supply Voltage (V)	Output Current (A)	Input Threshold Voltage (V)		Output ON Resistance (Typ) (Ω)	Output Modes	Package
				H Level	L Level			
BD6736FV	1	2.0 to 9.0	1.0 peak 3.2	2.0 or more	0.7 or less	0.35	Forward/Reverse/ Standby (Idle)/ Brake	SSOP-B20
BD6376GUL	1	2.0 to 9.0	1.0	2.0 or more	0.7 or less	0.45		VCSP50L1
BD65494MUV	1	2.0 to 9.0	1.0 peak 2.5	2.0 or more	0.7 or less	0.55		VQFN016V3030
BD63576NUX	1	2.0 to 10.0	1.2 peak 3.2	$V_{CC} \times 0.7$ or more	$V_{CC} \times 0.3$ or less	0.55		VSON008X2020
BD65491FV	1	1.8 to 16.0	1.2 Peak 4	1.45 or more	0.5 or less	0.35		SSOP-B16
BD65496MUV	1	1.8 to 16.0	1.2 peak 5	1.45 or more	0.5 or less	0.35		VQFN024V4040
BD63573NUV	1	2.0 to 16.0	1.2 peak 3.2	1.45 or more	0.5 or less	0.38		VSON010V3030
BD6735FV	2	2.0 to 8.0	1.0	2.0 or more	0.7 or less	1.0		SSOP-B20
BD63572MUV	2	2.0 to 9.0	1.0 peak 2.5	1.85 or more	0.9 or less	0.4		VQFN20PV3535
BD63565EFV	2	1.8 to 16.0	1.0	1.45 or more	0.5 or less	0.9		HTSSOP-B20
BD65492MUV	2	1.8 to 16.0	1.0	1.45 or more	0.5 or less	0.9		VQFN024V4040

Stepper Motor Drivers

High Performance, High Reliability 36V Stepper Motor Drivers For PPCs, MFPs, Industrial equipments etc.

BD63740FM	CLK	4.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63731EFV	CLK	3.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63730EFV	CLK	3.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63725BEFV	CLK	2.5A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63720AEFV	CLK	2.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63715AEFV	CLK	1.5A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63710AEFV	CLK	1.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63920MUV	CLK	2.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63910MUV	CLK	1.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD63716AMWV	CLK	1.5A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD68720EFV	CLK	2.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD68715EFV	CLK	1.5A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD68710EFV	CLK	1.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD6389FM	CLK	2.2A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD6387EFV	CLK	2.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD6385EFV	CLK	1.5A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection
BD6383EFV	CLK	1.0A	1/4STEP	Constant Current PWM	FW/RW	DECAY SW	THIN PKG	SMALL SIZE POWER PKG	FUNCTION COMPATIBLE	1/5PIN	ONE POWER	T.S.D.	O.C.P.	UV	OVLO	1/4STEP Short Protection

- *1 BD6387EFV, BD6385EFV, BD6383EFV and BD6389FM are function-compatible.
 *2 BD6387EFV, BD6385EFV and BD6383EFV are all pin-compatible.
 *3 BD68720EFV, BD68715EFV and BD68710EFV are function-compatible.
 *4 BD68720EFV, BD68715EFV and BD68710EFV are all pin-compatible.
 *5 BD63731EFV, BD63725BEFV, BD63720AEFV, BD63715AEFV and BD63710AEFV are function-compatible.
 *6 BD63731EFV, BD63725BEFV, BD63720AEFV, BD63715AEFV and BD63710AEFV are all pin-compatible.

Part No.	Supply Voltage (V)	Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}			High Level	Low Level		
BD63740FM	8 to 28	4.0	2.0	2.0	0.8	0.28	HSOP-M36
BD63731EFV	8 to 28	3.0	2.0	2.0	0.8	0.28	HTSSOP-B28
BD63730EFV	19 to 28	3.0	2.0	2.0	0.8	0.4	HTSSOP-B54
BD63725BEFV	8 to 28	2.5	2.0	2.0	0.8	0.35	HTSSOP-B28
BD63720AEFV	19 to 28	2.0	2.0	2.0	0.8	0.65	HTSSOP-B28
BD63715AEFV	19 to 28	1.5	2.0	2.0	0.8	0.95	HTSSOP-B28
BD63710AEFV	19 to 28	1.0	2.0	2.0	0.8	1.2	HTSSOP-B28
BD63920MUV	8 to 28	2.0	2.5	2.0	0.8	0.49	VQFN028V5050
BD63910MUV	8 to 28	1.0	2.5	2.0	0.8	1.3	VQFN028V5050
BD63716AMWV	8 to 28	1.5	2.0	2.0	0.8	0.85	UQFN040V5050
BD68720EFV	19 to 28	2.0	2.0	2.0	0.8	0.65	HTSSOP-B28
BD68715EFV	19 to 28	1.5	2.0	2.0	0.8	0.95	HTSSOP-B28
BD68710EFV	19 to 28	1.0	2.0	2.0	0.8	1.2	HTSSOP-B28
BD6389FM	10 to 28	2.2	4.5	2.0	0.8	0.7	HSOP-M36
BD6387EFV	10 to 28	2.0	4.5	2.0	0.8	0.8	HTSSOP-B40
BD6385EFV	10 to 28	1.5	4.5	2.0	0.8	1.0	HTSSOP-B40
BD6383EFV	10 to 28	1.0	4.5	2.0	0.8	1.5	HTSSOP-B40

High-efficiency 36V Withstand Voltage Stepping Motor Driver

BD65520MUV



Part No.	Supply Voltage (V)	Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}			High Level	Low Level		
 BD65520MUV	8 to 28	2.0	10.0	2.0	0.8	0.55	VQFN040V6060

Symbol Key	CLK IN Control signal input CLK-IN type	PARA IN Control signal input PARALLEL-IN type	1.0A 1.5A 2.0A 2.2A 2.5A 3.0A 4.0A Maximum output current	1/4STEP 1/5STEP 1/3STEP Number of step	Constant Current PWM Constant-current PWM	FW/RW Switch able between forward and reverse
DECAY SW	SLOW/FAST/MIX DECAY switching function	THIN PKG Thin package	SMALL SIZE POWER PKG Small power package	HIGH POWER PACKAGE High power package	FUNCTION COMPATIBLE Function-compatible	1/5PIN EASY REPLACEMENT PIN compatible with competitor's
T.S.D.	Built-in thermal shut-down circuit	O.C.P. Built-in over-current protection circuit	UV LO Built-in under voltage lock out circuit	OVLO Built-in over voltage lock out circuit	4kV 6kV ESD resistance	1/4STEP Short Protection Adjacent pin short protection
						1/4STEP Inverse mounting protection

Standard 36V Stepping Motor Drivers

BD6395FP														
BD6393FP														
BD68620EFV														
BD68610EFV														
BD6290EFV														
BD63960EFV														
BD63940EFV														
BD63621MUV														
BD63620AEFV														
BD63610AEFV														
BD63801EFV														
BD60223FP														
BD63888AEKV														
BD68888AEKV														
BD63888MUV														
BD68888MUV														

*1 The BD6395FP, BD6393FP, and BD6290EFV are all function-compatible.

*2 The BD6395FP and BD6393FP are all pin-compatible.

*3 The BD63620AEFV, BD63610AEFV, and BD63801EFV are all function-compatible.

*4 The BD63960EFV and BD63940EFV are all pin-compatible.

*5 The BD68620EFV and BD68610EFV are all function-compatible.

*6 The BD63960EFV and BD63940EFV are all function-compatible.

Part No.	Supply Voltage (V)	Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}			High Level	Low Level		
BD6395FP	16 to 28	1.5	3.0	2.0	0.8	1.2	HSOP25
BD6393FP	16 to 28	1.2	3.0	2.0	0.8	1.5	HSOP25
BD68620EFV	19 to 28	2.0	1.3	2.0	0.8	0.95	HTSSOP-B24
BD68610EFV	19 to 28	1.0	1.3	2.0	0.8	1.8	HTSSOP-B20
BD6290EFV	19 to 28	0.8	3.0	2.0	0.8	2.8	HTSSOP-B24
BD63960EFV	19 to 28	1.5	2.7	2.0	0.8	1.1	HTSSOP-B24
BD63940EFV	19 to 28	1.2	2.7	2.0	0.8	1.4	HTSSOP-B24
BD63621MUV	8 to 28	2.0	2.5	2.0	0.8	0.49	VQFN028V5050
BD63620AEFV	19 to 28	2.0	1.3	2.0	0.8	0.95	HTSSOP-B24
BD63610AEFV	19 to 28	0.8	1.3	2.0	0.8	1.8	HTSSOP-B20
BD63801EFV	19 to 28	0.8	2.7	2.0	0.8	2.8	HTSSOP-B24
BD60223FP	8 to 28	1.5	2.5	2.0	0.8	0.55	HSOP25
BD63888AEKV	8 to 28	1.5	5.0	2.0	0.8	1.0	HTQFP48V
BD68888AEKV	8 to 28	1.5	5.0	2.0	0.8	1.0	HTQFP48V
BD63888MUV	8 to 28	1.2	5.0	2.0	0.8	1.0	VQFN036V6060
BD68888MUV	8 to 28	1.65	5.0	2.0	0.8	1.0	VQFN036V6060

μ-step 36V Stepping Motor Drivers

BD63860EFV														
BD63510AEFV														
BD63511EFV														
BD63520AEFV														
BD63521EFV														
BD63524AEFV														
BD63525AEFV														
BD63740FM														

*1 The BD63510AEFV, BD63520AEFV and BD63525AEFV are all function-compatible.

*2 The BD63511AEFV and BD63521AEFV are all function-compatible.

Part No.	Supply Voltage (V)		Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}				High Level	Low Level		
BD63860EFV	16 to 28		2.5	4.0	2.0	0.8	0.8	HTSSOP-B28
BD63510AEFV	8 to 28		1.0	2.5	2.0	0.8	1.75	HTSSOP-B28
BD63511EFV	8 to 28		1.0	2.5	2.0	0.8	1.75	HTSSOP-B28
BD63520AEFV	8 to 28		2.0	2.5	2.0	0.8	0.65	HTSSOP-B28
BD63521EFV	8 to 28		2.0	2.5	2.0	0.8	0.65	HTSSOP-B28
BD63524AEFV	8 to 28		2.5	2.5	2.0	0.8	0.35	HTSSOP-B28
BD63525AEFV	8 to 28		2.5	2.5	2.0	0.8	0.35	HTSSOP-B28
BD63740FM	8 to 28		4.0	2.0	2.0	0.8	0.28	HSOP-M36

Low Voltage Stepping Motor Drivers For Mini and Handheld Printers

BD6382EFV	 PARAM	 IOMAX 0.8A	 UNISTEP	 Current Sense	 Thin PKG	 Small Size Pin	 T.S.D.	 O.C.P.	 UV	 OVLO	 4kV	 Short Protection	 FUNCTION	 E	 40°C	 85°C
BD6381EFV	 PARAM	 IOMAX 1.2A	 UNISTEP	 Current Sense	 Thin PKG	 Small Size Pin	 T.S.D.	 O.C.P.	 UV	 OVLO	 4kV	 Short Protection	 FUNCTION	 E	 40°C	 85°C
BD6380EFV	 PARAM	 IOMAX 0.8A	 UNISTEP	 Current Sense	 Thin PKG	 Small Size Pin	 T.S.D.	 O.C.P.	 UV	 OVLO	 4kV	 Short Protection	 FUNCTION	 E	 40°C	 85°C

Part No.	Supply Voltage (V)		Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}	V _M			High Level	Low Level		
BD6382EFV	3.0 to 5.5	5.5 to 13.5	0.8	1.6	2.0	0.8	1.2	HTSSOP-B24
BD6381EFV	2.5 to 5.5	6.0 to 13.5	1.2	1.6	2.0	0.8	1.0	HTSSOP-B24
BD6380EFV	2.5 to 5.5	4.0 to 13.5	0.8	1.6	2.0	0.8	1.2	HTSSOP-B24

40V Stepping Motor Driver

BD63401EFV	 PARAM	 IOMAX 1.35A	 UNISTEP	 Current Sense	 Thin PKG	 Small Size Pin	 ONE POWER	 T.S.D.	 O.C.P.	 UV	 OVLO	 4kV
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Part No.	Supply Voltage (V)		Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}				High Level	Low Level		
BD63401EFV	8 to 33		1.35	2.0	2.0	0.8	1.0	HTSSOP-B20

45V Stepping Motor Drivers

BD6425EFV	 CLK	 IOMAX 1.5A	 UNISTEP	 Current Sense	 FW/RW	 DECAY SW	 Thin PKG	 Small Size Pin	 ONE POWER	 T.S.D.	 O.C.P.	 UV	 OVLO	 8kV	 Short Protection
BD6423EFV	 CLK	 IOMAX 1.0A	 UNISTEP	 Current Sense	 FW/RW	 DECAY SW	 Thin PKG	 Small Size Pin	 ONE POWER	 T.S.D.	 O.C.P.	 UV	 OVLO	 8kV	 Short Protection
BD6422EFV	 PARAM	 IOMAX 1.0A	 UNISTEP	 Current Sense	 FW/RW	 DECAY SW	 Thin PKG	 Small Size Pin	 ONE POWER	 T.S.D.	 O.C.P.	 UV	 OVLO	 8kV	 Short Protection

Part No.	Supply Voltage (V)		Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}				High Level	Low Level		
BD6425EFV	19 to 42		1.5	2.0	2.0	0.8	1.1	HTSSOP-B28
BD6423EFV	19 to 42		1.0	2.0	2.0	0.8	2.0	HTSSOP-B24
BD6422EFV	19 to 42		1.0	2.0	2.0	0.8	2.0	HTSSOP-B24

36V Unipolar Stepper Motor Driver

BM6343FS-Z	 CLK	 SPI	 IOMAX 3.0A	 UNISTEP	 Current Sense	 FW/RW	 ONE POWER	 T.S.D.	 O.C.P.	 UV	 OVLO
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Part No.	Supply Voltage (V)		Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
	V _{CC}				High Level	Low Level		
BM6343FS-Z	8 to 28		3.0	5.0	2.0	0.8	0.10	SSOP-A54_36

Automotive 40V Stepping Motor Driver

BD63800MUF-C



Part No.	Supply Voltage (V) V_{CC}	Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BD63800MUF-C	6 to 28	1.21	3.5	High Level	Low Level	0.75	VQFN32FBV050	FSs	YES

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*1 For more information about "ComfySIL™ Functional Safety", please refer to the reverse side of the cover.

3-Phase Brushless Motor Drivers

3-Phase Brushless Motor Pre-Drivers with Speed Control

BD6762FV



BD63030EKV-C



Part No.	Max Voltage (V)	Supply Voltage (V)	Operating Temperature (°C)	Circuit Current (mA)	Input Threshold Voltage (V)		External FET Drive Voltage		PWM Frequency (kHz)	Package
					H Level	L Level	Upper (V)	Lower (V)		
BD6762FV	36	16 to 28	-25 to +75	17	2.2	0.8	V _{CC} +6.8	10.8	16	HTSSOP-B24

Part No.	Max Voltage (V)	Supply Voltage (V)	Operating Temperature (°C)	Circuit Current (mA)	Input Threshold Voltage (V)		External FET Drive Voltage V _{CC} =6.5V		PWM Frequency (kHz)	Package	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
					H Level	L Level	Upper (V)	Lower (V)				
BD63030EKV-C	50	6.5 to 18.0	-40 to +125	18	3.8	1.9	2×V _{CC} -1.0	5.5	20	HTQFP64AV	FSs	YES

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3-Phase Brushless Motor Pre-Drivers

BD6761FS



BD63001AMUV



BD63002AMUV



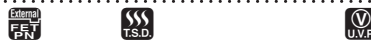
BM62300MUV



BD63003MUV



BD67891MUV



BD16805FV-M



BM64070MUV



BM64300MUV



Part No.	Max Voltage (V)	Supply Voltage (V)	Operating Temperature (°C)	Circuit Current (mA)	Input Threshold Voltage (V)		External FET Drive Voltage (V)		PWM Frequency (kHz)	Package	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BD6761FS	36	16 to 28	-35 to +75	15.0	H Level	L Level	Upper	Lower	15	SSOP-A32	—	—
					2.2	0.8	$V_{CC}+6$	10.5				
BD63001AMUV	33	4.5 to 5.5/6 to 28	-40 to +85	2.5	2.0	0.8	$V_{CC}-0.2$	9.5	20	VQFN024V4040	—	—
BD63002AMUV	33	8.0 to 26.4	-40 to +85	2.5	2.0	0.8	$V_{CC}+7$	5.0	External IN	VQFN028V5050	—	—
BM62300MUV	33	8 to 28	-40 to +105	14	$V_{VREG50}-1.2$	0.8	$V_G-0.1$	0.1	40	VQFN032V5050	—	—
BD63003MUV	40	10.8 to 26.4	-40 to +85	4.5	2.0	0.8	$V_{CC}+10^{*2}$	10^{*2}	External IN	VQFN032V5050	—	—
BD67891MUV	45	20 to 40	-25 to +85	2.5	2.0	0.8	$V_{MM}-7.8$	7.8	External IN	VQFN032V5050	—	—
BD16805FV-M	60	8 to 18	-40 to +110	15.2	3.0	1.0	$2 \times V_{CC}-0.5$	8.0	25	SSOP-B40	FSs	YES
BM64070MUV	100	28 to 77	-40 to +105	6.4	2.8	0.8	$V_G-0.1$	0.1	90	VQFN040V6060	—	—
BM64300MUV	100	28 to 63	-40 to +105	13	$V_{VREG50}-1.2$	0.8	$V_G-0.1$	0.1	40	VQFN040V6060	—	—

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*1 For more information about "ComfySIL™ Functional Safety", please refer to the reverse side of the cover.

*2 Constant current drive type

Symbol Key	CLK IN	SERVO	SPI	I2A	36V MAX	40V MAX	60V MAX	100V MAX	120° PWM	180° PWM	Output power system	Number of step
Constant-current PWM	Control signal input CLK-IN type	Built-in servo circuit	SPI BUS interface	Maximum output current	External output FET	External output FET	External output FET	External output FET	Built-in FG Amplifier	Built-in FG Amplifier	Built-in hysteresis Amplifier	
ONE POWER	1 power supply system due to built-in regulator	Switch able between forward and reverse	External output FET H-side: Nch/L-side: Nch	Built-in thermal shut-down circuit	Built-in short brake	Built-in motor lock-up protection circuit	Built-in over-current protection circuit	Built-in over voltage protection circuit	Built-in under voltage protection circuit			

3-Phase Brushless Motor Drivers

BD63005AMUV	120° PWM	DMOS	T.S.D.	SHORT BRAKE	FWRW	Motor lock protection	O.C.P.	O.V.P.	U.V.P.
BD63006MUV	120° PWM	DMOS	T.S.D.	SHORT BRAKE	FWRW	Motor lock protection	O.C.P.	O.V.P.	U.V.P.
BD63007MUV	120° PWM	DMOS	T.S.D.	SHORT BRAKE	FWRW	Motor lock protection	O.C.P.	O.V.P.	U.V.P.
BD63015EFV	36V MAX	180° PWM	DMOS	T.S.D.		Motor lock protection	O.C.P.	O.V.P.	U.V.P.
BD63035EFV-M	36V MAX	180° PWM	DMOS	T.S.D.		Motor lock protection	O.C.P.	O.V.P.	U.V.P.
BD16852EFV-C	40V MAX	120° PWM	DMOS	SENSOR LESS DRIVE	T.S.D.	Motor lock protection	O.C.P.	O.V.P.	U.V.P.

Part No.	Max Voltage (V)	Supply Voltage (V)	Output Current (A)	Operating Temperature (°C)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	PWM Frequency (kHz)	Package	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
						H Level	L Level					
BD63005AMUV	33	10 to 28	2	-25 to +85	4.4	2.0	0.8	0.17	External IN	VQFN040V6060	—	—
BD63006MUV	33	8 to 28	1.5	-40 to +85	4.4	2.0	0.8	0.8	External IN	VQFN024V4040	—	—
BD63007MUV	33	8 to 28	3	-25 to +85	4.4	2.0	0.8	0.17	External IN	VQFN040V6060	—	—
BD63015EFV	36	8 to 28	1.5	-40 to +105	8	2.0	0.8	0.6	External IN	HTSSOP-B20	—	—
BD63035EFV-M	36	8 to 28	1.5	-40 to +105	8	2.0	0.8	0.6	22.7	HTSSOP-B20	FSs	YES
BD16852EFV-C	40	5.5 to 18.0	3.2	-40 to +125	5	—	—	0.4	20	HTSSOP-B28	FSs	YES

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*1 For more information about "ComfySIL™ Functional Safety", please refer to the reverse side of the cover.

Fan Motor Drivers

5V Single-Phase Full-wave Fan Motor Drivers

BH6766FVM	5V MIN	300 CLASS	FG	SOFT S/W	HALL	T.S.D.
BD6965NUX	5V MIN	350 CLASS	FG	SOFT S/W	LOCK	T.S.D.
BU6909AGFT	5V MIN	300 CLASS	HALL Sensor	FG	SOFT S/W	T.S.D.
BU69090NUX	5V MIN	300 CLASS	HALL Sensor	FG	SOFT S/W	T.S.D.

Part No.	Supply Voltage (V)	I _O Max (mA)	Power Transistor	Output Saturation Voltage (V)	Speed Control	Hall Bias Voltage (V)	Lock Time Ratio	Package
BH6766FVM	2.0 to 6.0	630	CMOS	Upper and Lower 0.6 (I _O =250mA)	—	1.3	—	MSOP8
BD6965NUX	2.0 to 5.5	800	CMOS	Upper and Lower 0.4 (I _O =250mA)	Direct PWM	—	1 : 10	VSON008X2030
BU6909AGFT	1.8 to 5.5	800	CMOS	Upper and Lower 0.16 (I _O =200mA)	Direct PWM	Include Hall sensor	1 : 10	TSSOF6
BU69090NUX	1.8 to 5.5	800	CMOS	Upper and Lower 0.16 (I _O =200mA)	Direct PWM	Include Hall sensor	1 : 10	VSON008X2030

Standard Single-Phase Full-wave Fan Motor Drivers

BD6981FVM	12V MIN	250 CLASS	FG TUT	SOFT S/W	HALL	LOCK CAG	T.S.D.
BD6982FVM	12V MIN	250 CLASS		SOFT S/W	HALL	LOCK CAG	ALARM T.S.D.
BD6967FVM	12V MIN	250 CLASS	FG TUT	SOFT S/W	HALL	LOCK CAG	SOFT SUP T.S.D.
BD6968FVM	12V MIN	250 CLASS		SOFT S/W	HALL	LOCK CAG	ALARM SOFT SUP T.S.D.
BD6962FVM	12V MIN	300 CLASS	FG TUT	SOFT S/W		LOCK CAG	T.S.D.
BD6964FVM	12V MIN	300 CLASS		SOFT S/W		LOCK CAG	ALARM T.S.D.
BD6961F	12V MIN	350 CLASS	FG TUT	SOFT S/W		LOCK CAG	T.S.D.
BD6964F	12V MIN	350 CLASS		SOFT S/W		LOCK CAG	ALARM T.S.D.
BD69830FV	24V MIN	350 CLASS	FG TUT		HALL	LOCK CAG	ALARM SOFT SUP T.S.D.

Part No.	Supply Voltage (V)	I _O Max (mA)	Power Transistor	Output Saturation Voltage (V)	Speed Control	Hall Bias Voltage (V)	Lock Time Ratio	Package
BD6981FVM	2.8 to 16.0	800	DMOS	Upper and Lower 0.45 (I _O =200mA)	—	1.2	1 : 6	MSOP8
BD6982FVM	2.8 to 16.0	800	DMOS	Upper and Lower 0.45 (I _O =200mA)	—	1.2	1 : 6	MSOP8
BD6967FVM	3.3 to 14.0	800	DMOS	Upper and Lower 0.45 (I _O =200mA)	DC/Direct PWM	1.2	1 : 10	MSOP10
BD6968FVM	3.3 to 14.0	800	DMOS	Upper and Lower 0.45 (I _O =200mA)	DC/Direct PWM	1.2	1 : 10	MSOP10
BD6962FVM	3.3 to 14.0	800	DMOS	Upper and Lower 0.4 (I _O =300mA)	Direct PWM	—	1 : 10	MSOP8
BD6964FVM	3.3 to 14.0	800	DMOS	Upper and Lower 0.4 (I _O =300mA)	Direct PWM	—	1 : 10	MSOP8
BD6961F	3.3 to 14.0	1,000	DMOS	Upper and Lower 0.4 (I _O =300mA)	Direct PWM	—	1 : 10	SOP8
BD6964F	3.3 to 14.0	1,000	DMOS	Upper and Lower 0.4 (I _O =300mA)	Direct PWM	—	1 : 10	SOP8
BD69830FV	6.0 to 28.0	900	DMOS	Upper and Lower 0.6 (I _O =200mA)	Direct PWM	1.2	1 : 30	SSOP-B14

Built-in under voltage lock out circuit	Built-in over voltage lock out circuit	Adjacent pin short protection	5V IN	12V IN	24V IN	Power supply compatible	250 CLASS	300 CLASS	350 CLASS	This is an indication for the amount of current that can flow into a motor running at fixed speed.
Include Hall sensor	RPM pulse signal output	Built-in hall element power supply voltage	Rotational speed control possible	External capacitor for detecting motor lock not necessary	Motor lock detection function	Lock alarm signal output				
Motor startup possible low-duty	Drive method with hall sensor for detecting the rotor position	Soft switching								

Multifunction Single-Phase Full-wave Fan Motor Drivers

BD6971FV	12V MIN 350 CLASS	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT
BD6994FV	12V MIN 350 CLASS	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT
BD6995FV	12V MIN 400 CLASS	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT
BD61243FV	12V MIN 450 CLASS	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT
BD61245EFV	12V MIN 800 CLASS	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT SOFT START
BD61248NUX	12V MIN 400 CLASS	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT
BD69730FV	12V MIN PRE DRIVER	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT SOFT START
BD69740FV	12V MIN PRE DRIVER	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT SOFT START
BD61250MUV	24V MIN PRE DRIVER	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT SOFT START
BD61251FV	12V MIN PRE DRIVER	FG FULL SOFT SW HALL LOCK SENSE CAC-ON MIN. rpm T.S.D. IO LIMIT SOFT START

Part No.	Supply Voltage (V)	I _o Max (mA)	Power Transistor	Output Saturation Voltage (V)	Speed Control	Hall Bias Voltage (V)	Lock Time Ratio	Package
BD6971FV	3.5 to 17.0	1,000	DMOS	Upper and Lower 0.6 (I _o =200mA)	DC/PWM	1.3	1 : 10	SSOP-B14
BD6994FV	4.5 to 17.0	1,200	DMOS	Upper and Lower 0.6 (I _o =400mA)	DC/PWM	1.25	1 : 10	SSOP-B16
BD6995FV	4.3 to 17.0	1,200	DMOS	Upper and Lower 0.6 (I _o =400mA)	DC	1.25	1 : 10	SSOP-B16
BD61243FV	5.5 to 16.0	1,200	DMOS	Upper and Lower 0.4 (I _o =400mA)	DC/PWM	1.25	1 : 10	SSOP-B14
BD61245EFV	4.0 to 16.0	1,800	DMOS	Upper and Lower 0.2 (I _o =400mA)	DC/PWM	—	1 : 10	HTSSOP-B16
BD61248NUX	4.5 to 16.0	1,200	DMOS	Upper and Lower 0.2 (I _o =200mA)	PWM	—	1 : 10	VSON010X3030
BD69730FV	4.3 to 17.0	10	Pre-Driver	—	DC/PWM	1.26	1 : 20	SSOP-B16
BD69740FV	4.3 to 17.0	10	Pre-Driver	—	DC/PWM	1.26	1 : 20	SSOP-B16
BD61250MUV	4.5 to 36.0	10	Pre-Driver	—	DC/PWM	—	1 : 20	VQFN024V4040
BD61251FV	4.5 to 16.0	10	Pre-Driver	—	PWM	—	1 : 20	SSOP-B16

2-Phase Half-wave Fan Motor Driver

BA6406F	24V MIN PRE DRIVER	LOCK SENSE CAC-ON
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Part No.	Supply Voltage (V)	I _o Max (mA)	Power Transistor	Output Saturation Voltage (V)	Speed Control	Hall Bias Voltage (V)	Zener Diode Clamp Voltage (V)	Output Clamp Voltage (V)	Lock Time Ratio	Package
BA6406F	4.0 to 28.0	70	Pre-Driver	—	—	—	—	—	1 : 4.5	SOP8

3-Phase Full-wave Fan Motor Drivers

BD67173NUX	5V MIN 400 CLASS	SENSOR LESS DRIVE PWM 150° FG FULL T.S.D. LOCK SENSE CAC-ON MIN. rpm
BD6326ANUX	5V MIN 400 CLASS	SENSOR LESS DRIVE PWM 180° FG FULL T.S.D. LOCK SENSE CAC-ON MIN. rpm
BD63282EFV	12V MIN 400 CLASS	THREE HALL DRIVE PWM 180° FG FULL T.S.D. LOCK SENSE CAC-ON IO LIMIT SOFT START
BD63242EFV	12V MIN 450 CLASS	SENSOR LESS DRIVE PWM 180° FG FULL T.S.D. LOCK SENSE CAC-ON IO LIMIT MIN. rpm
BD63242FV	12V MIN 400 CLASS	SENSOR LESS DRIVE PWM 180° FG FULL T.S.D. LOCK SENSE CAC-ON IO LIMIT MIN. rpm
BD63241FV	12V MIN 400 CLASS	ONE HALL DRIVE PWM 180° FG FULL T.S.D. LOCK SENSE CAC-ON IO LIMIT SOFT START
BD63251MUV	12V MIN PRE DRIVER	ONE HALL DRIVE PWM 180° FG FULL T.S.D. LOCK SENSE CAC-ON IO LIMIT SOFT START MIN. rpm

Part No.	Supply Voltage (V)	I _o Max (mA)	Power Transistor	Output Saturation Voltage (V)	Speed Control	Hall Bias Voltage (V)	Lock Time Ratio	Package
BD67173NUX	2.2 to 5.5	700	CMOS	Upper and Lower 0.25 (I _o =250mA)	PWM	—	1 : 5	VSON010X3030
BD6326ANUX	2.2 to 5.5	700	CMOS	Upper and Lower 0.25 (I _o =250mA)	PWM	—	1 : 5	VSON010X3030
BD63282EFV	5.0 to 16.0	1,000	DMOS	Upper and Lower 0.3 (I _o =300mA)	DC/PWM	—	1 : 2, 1 : 5, 1 : 10	HTSSOP-B20
BD63242EFV	5.0 to 16.0	1,000	DMOS	Upper and Lower 0.3 (I _o =300mA)	DC/PWM	—	Setting of SOS-C-pin	HTSSOP-B16
BD63242FV	5.0 to 16.0	1,000	DMOS	Upper and Lower 0.3 (I _o =300mA)	DC/PWM	—	Setting of SOS-C-pin	SSOP-B16
BD63241FV	5.0 to 16.0	1,000	DMOS	Upper and Lower 0.24 (I _o =300mA)	PWM	1.25	1 : 5	SSOP-B16
BD63251MUV	5.5 to 15.0	10	Pre-Driver	—	PWM	1.25	1 : 10	VQFN024V4040

Symbol Key	5V MIN 12V MIN 24V MIN	Power supply compatible	350 CLASS 400 CLASS 450 CLASS 800 CLASS PRE DRIVER	This is an indication for the amount of current that can flow into a motor running at fixed speed.	Small mount type	FG FULL RPM pulse signal output
SENSOR LESS DRIVE	ONE HALL DRIVE	THREE HALL DRIVE	SOFT SW	PWM 150° PWM 180°	Built-in hall element power supply voltage	Rotational speed control possible

3-Phase Brushless Fan Motor Drivers For Household Appliances

BM6241FS	 	  
BM6242FS	 	  
BM6243FS	 	  
BM6244FS	 	     
BM6245FS	 	     
BM6246FS	 	     
BM6247FS	 	     
BM6248FS	 	     
BM6249FS	 	     
BM6258FS	 	     

Part No.	Control	Output Device	Rated Voltage (V)	Output Current (A)	Output ON Resistance (Ω)	Diode Forward Voltage (V)	FG Conversion Ratio	Package
BM6241FS	6 inputs	MOSFET	250	2.0	0.9	0.9	12:12	SSOP-A54_23
BM6242FS	6 inputs	MOSFET	600	1.5	2.7	1.1	12:12	SSOP-A54_23
BM6243FS	6 inputs	MOSFET	600	2.5	1.7	1.1	12:12	SSOP-A54_23
BM6244FS	120°	MOSFET	250	2.0	0.9	0.9	12:12	SSOP-A54_36A
BM6245FS	120°	MOSFET	600	1.5	2.7	1.1	12:12	SSOP-A54_36A
BM6246FS	120°	MOSFET	600	2.5	1.7	1.1	12:12	SSOP-A54_36A
BM6247FS	180° (Sinusoidal)	MOSFET	250	2.0	0.9	0.9	12:12	SSOP-A54_36A
BM6248FS	180° (Sinusoidal)	MOSFET	600	1.5	2.7	1.1	12:12	SSOP-A54_36A
BM6249FS	180° (Sinusoidal)	MOSFET	600	2.5	1.7	1.1	12:12	SSOP-A54_36A
BM6258FS	180° (Sinusoidal)	MOSFET	600	1.5	2.7	1.1	15:12	SSOP-A54_36A

3-Phase Brushless Fan Motor Controllers For Household Appliances

Part No.	Supply Voltage (V)	Commutation Logic	Control Voltage Input (V)	Phase Control (deg)	FG Conversion Ratio	Package
BD62012BFS	10.0 to 18.0	150°	2.1 to 5.4	0 to +30	12 : 12	SSOP-A24
New BD62017BFS	10.0 to 18.0	180° (Sinusoidal)	2.1 to 5.4	0 to +40	15 : 12	SSOP-A24
BD62018BFS	10.0 to 18.0	180° (Sinusoidal)	2.1 to 5.4	0 to +40	12 : 12	SSOP-A24

Fractional Pulse Rate Converters

Part No.	Supply Voltage (V)	Circuit Current (mA)	Input Frequency (kHz)	Conversion Ratio	Package
BU6821G	4.5 to 5.5	0.5	0.005 to 5	15 : 12	SSOP5
BU6823G	4.5 to 5.5	0.5	0.005 to 5	21 : 12	SSOP5



External capacitor for detecting motor lock not necessary



Motor lock detection function



Lock alarm signal output



Minimum rotational speed setting



Motor startup possible low-duty



Built-in thermal shut-down circuit



Output current limit can be set



Soft start



Built-in diode for preventing damage due to backward connection



Rated Voltage



Maximum output current



Built-in under voltage lock out circuit



Built-in over-current protection circuit

Drivers for Printer

Motor Drivers with Brush for Printers

Part No.	Supply Voltage (V)	Output Current (A)	Output Current Peak (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
					H Level	L Level		
BD62210AEFV	8.0 to 28.0	1.0	1.5	2.5	2.0	0.8	1.9	HTSSOP-B28
BD62220AEFV	8.0 to 28.0	2.0	2.8	2.5	2.0	0.8	0.65	HTSSOP-B28
BD63130AFM	8.0 to 46.2	3.0	5.0	2.5	2.0	0.8	0.55	HSOP-M36
BD63150AFM	8.0 to 46.2	5.0	6.0	2.5	2.0	0.8	0.3	HSOP-M36

Bipolar Stepper Motor Drivers for Paper Feed/Carriage

There are other stepper motor drivers that can be used in industrial equipment and printers.

Part No.	Power Supply (V)	Output Current (A)	Circuit Current (mA)	Input Threshold Voltage (V)		Output ON Resistance (Ω)	Package
				High Level	Low Level		
BD63801EFV	19.0 to 28.0	0.8	2.7	2.0	0.8	2.8	HTSSOP-B24
BD68715EFV	19.0 to 28.0	1.5	2.0	2.0	0.8	0.95	HTSSOP-B28
BD63715AEFV	19.0 to 28.0	1.5	2.0	2.0	0.8	0.95	HTSSOP-B28

3-Phase Brushless Motor Pre-Drivers for Paper Feed For LBP, PPC

Part No.	V _{CC} (V)	Power Supply (V)	Operating Temperature (°C)	Circuit Current (mA)	Input Threshold Voltage (V)		External Threshold Voltage (V)		PWM Frequency (kHz)	Package
					H Level	L Level	Upper	Lower		
BD6761FS	36	16.0 to 28.0	-35 to +75	15.0	2.2	0.8	V _{CC} +6	10.5	15	SSOP-A32
BD6762FV	36	16.0 to 28.0	-25 to +75	17.0	2.2	0.8	V _{CC} +6.8	10.8	16	SSOP-B40

System Motor Driver with Built-in Switching Regulators (H Bridge + SWREG 2ch)

Part No.	V _{CC} (V)	Motor Rated Output Current	H Bridge ch	SW REG1 Output Current Range (A)	SW REG2 Output Current Range (A)	Standby Current (μA) (Max)	Package
BD64547MUV	50	2.0 A/Phase	2	0 to 2.0	0 to 1.4	100	VQFN048V7070
BD64008MUV	50	2.0 A/Phase	1 (2ch parallel use)	0 to 2.0	0 to 1.4	100	VQFN048V7070

Motor Drivers with Brush for Printers: The BD62210AEFV and BD62220AEFV are all pin-compatible.

Drivers for Camera

Single and Dual-Channel Lens Drivers for SLRs (Single Lens Reflex)

Part No.	ch	Supply Voltage (V)	Driver Output Max Current (A)	Drive Method Examples of Actuator (Driven Motor, Driving System, and Output ON Resistance (Ω))						Turn on Time	Turn off Time (ns)	Control Frequency (kHz) (Max)	Package (mm)
				Cleaner	AF	Zoom	Iris	Shutter					
BD65492MUV	2	1.8 to 16.0	1.0	e.g.	—	STM (2ch) FULL ON 0.9	—	—	—	200ns (Including 80ns to Prevent from overlap current.)	80	500	VQFN024V4040 4.0×4.0, H=Max 1.0
BD6735FV	2	2.0 to 8.0	1.0	e.g.	—	—	—	STM (2ch) FULL ON 1.0	—	300ns (Including 90ns to Prevent from overlap current.)	100	100	SSOP-B20 6.5×6.4, H=Max 1.25
BD6376GUL	1	2.0 to 9.0	1.0	e.g.	—	—	DCM (1ch) FULL ON 0.45	—	—	200ns (Including 80ns to Prevent from overlap current.)	60	200	VCSP50L1 1.6×1.6, H=Max 0.55
BD65491FV	1	1.8 to 16.0	1.2 Peak 4.0	e.g.	—	—	—	—	Plunger (1ch) FULL ON 0.35	150ns (Including 80ns to Prevent from overlap current.)	50	500	SSOP-B16 6.5×5.0, H=Max 1.25
BD6736FV	1	2.0 to 9.0	1.0 Peak 3.2	e.g.	—	—	—	—	Plunger (1ch) FULL ON 0.35	1000ns (Including 800ns to Prevent from overlap current.)	100	100	SSOP-B20 6.5×6.4, H=Max 1.25
BD65499MUV	1	4.0 to 27.0	0.5 Peak 2.0	e.g.	Piezo (1ch) FULL ON 0.6	—	—	—	—	150ns (Including 80ns to Prevent from overlap current.)	50	300	VQFN028V5050 5.0×5.0, H=Max 1.0
BD65494MUV	1	2.0 to 9.0	1.0 Peak 2.5	e.g.	—	—	—	—	Plunger (1ch) FULL ON 0.55	200ns (Including 80ns to Prevent from overlap current.)	60	200	VQFN016V3030 3.0×3.0, H=Max 1.0
BD65496MUV	1	1.8 to 16.0	1.2 Peak 5.0	e.g.	—	—	—	—	Plunger (1ch) FULL ON 0.35	150ns (Including 80ns to Prevent from overlap current.)	50	500	VQFN024V4040 4.0×4.0, H=Max 1.0

STM: Stepping motor, DCM: DC motor ("Drive method examples of actuator" are the recommendations. Other types may be evaluated.)

μ-step System Lens Drivers for Cameras												
Part No.	Supply Voltage (V)	Driver Output Max Current (A)	Drive Method Examples of Actuator (Driven Motor, Driving System, and Output ON Resistance (Ω))						Input I/F	μ-step Resolution	Package (mm)	
				AF	Zoom	Iris	Shutter	Others				
BU24020GU	2.7 to 3.6 (Logic)	0.5	e.g. 1	STM (1, 2ch) μ-step (class-D) 1.5	STM (3, 4ch) μ-step (class-D) 1.5	—	—	—	3-wire serial	1024	VCSP85H2 2.6×2.6, H=Max 1.0	
	2.7 to 5.5 (Driver)		e.g. 2		DCM (3ch) FULL ON (PWM) 1.5	VCM (4ch) FULL ON (PWM) 1.5	—	—				
BU24033GW	1.62 to 3.6 (Io)	0.5/0.6	e.g. 1	STM (1, 2ch) μ-step (class-D) 1.5	STM (3, 4ch) μ-step (class-D) 1.5	VCM (5ch) FULL ON (PWM) 1.0	VCM (6ch) constant current 1.0	—	3-wire serial	1024	UCSP75M3 3.0×3.0, H=Max 0.85	
	2.7 to 3.6 (Logic)		e.g. 2		DCM (5ch) FULL ON (PWM+Speed control) 1.0	VCM (3ch) FULL ON (PWM) 1.5		DCM (4ch) FULL ON (PWM) 1.5				
BU24035GW	2.7 to 3.6 (Logic)	0.5/0.6	e.g. 1	STM (1, 2ch) μ-step (class-D) 1.5	DCM (5ch) FULL ON (PWM+Speed control) 1.0	STM (3, 4ch) μ-step (class-D) 1.5	VCM (6ch) constant current 1.0	—	3-wire serial	1024	UCSP75M3 3.1×3.1, H=Max 0.85	
	2.7 to 5.5 (Driver)		e.g. 2		DCM (3ch) FULL ON (PWM+Speed control) 1.5	VCM (5ch) FULL ON (PWM)/ constant current 1.0		VCM (4ch) FULL ON (PWM) 1.5				
BU24036MWV	2.7 to 3.6 (Logic)	0.5/0.6	e.g. 1	STM (1, 2ch) μ-step (class-D) 2.0	DCM (5ch) FULL ON (PWM+Speed control) 1.0	STM (3, 4ch) μ-step (class-D) 1.5	VCM (6ch) constant current 1.0	—	3-wire serial	1024	UQFN040V5050 5.0×5.0, H=Max 1.0	
	2.7 to 5.5 (Driver)		e.g. 2		DCM (3ch) FULL ON (PWM+Speed control) 1.5	VCM (5ch) FULL ON (PWM)/ constant current 1.0		VCM (4ch) FULL ON (PWM) 1.5				

STM: Stepping motor, DCM: DC motor, VCM: Voice Coil Motor ("Drive method examples of actuator" are the recommendations. Other types may be evaluated.)

Mobile Phone Module Drivers

2-wire Serial (I ² C-compatible) Interface Lens Drivers for Uni-directional Voice Coil Motors														
Part No.	Supply Voltage (V)	Applications	ch	Drive System	Driver Output Max Current (mA)	Driver Output Low Voltage (V)	Input I/F	Ringing Compensation	Temperature Protection	Back side coating	Package (mm)			
BU64292GWZ	2.5 to 3.6	Drive AF using voice coil motor	0.25	Constant current (±5%)	125	0.28 (V _{DD} =3V, I _O =100mA)	I ² C Fm+ compatible	ISRC	✓	without	UCSP25L1 0.68×1.08, H=Max 0.30			
BU64982GWZ	2.5 to 3.6	Drive AF using voice coil motor	0.25	Constant current (±5%)	125	0.28 (V _{DD} =3V, I _O =100mA)	I ² C Fm+ compatible	ISRC	✓	with	UCSP30L1A 0.68×1.08, H=Max 0.33			
2-wire Serial (I ² C-compatible) Interface Lens Driver for Bi-directional Voice Coil Motors														
Part No.	Supply Voltage (V)	Applications	ch	Drive System	Driver Output Max Current (A)	Driver Output ON Resistance (Ω)	Input I/F	Ringing Compensation	Temperature Protection	Back side coating	Package (mm)			
BU64253GWZ	2.5 to 4.5	Drive AF using voice coil motor	1	Constant current (±5%)	±100	3.2 (V _{DD} =3V)	I ² C Fm+ compatible	ISRC	✓	with	UCSP30L1A 0.72×1.13, H=Max 0.33			
2-wire Serial (I ² C-compatible) Interface Lens Driver for Piezo Actuators														
Part No.	Supply Voltage (V)	Applications		ch	Drive System	Driver Output Max Current (mA)	Driver Output ON Resistance (Ω)	Input I/F	Base Clock	Temperature Protection	Power Save Function	Back side coating	Package (mm)	
BU64562GWZ	2.3 to 4.8	e.g. 1	Drive AF using piezo actuator	1	FULL ON	500	1.4 (V _{CC} =3V)	I ² C Fm compatible	Built-in 15MHz	✓	✓	without	UCSP30L1 1.90×1.13, H=Max 0.33	
		e.g. 2	Drive Zoom using piezo actuator											
Parallel Interface Lens Driver for Stepping Motors														
Part No.	Supply Voltage (V)	Applications		ch	Drive System	Driver Output Max Current (mA)	Driver Output ON Resistance (Ω)	Input I/F	Input Mode Selection Terminal	Built-In Wave Sloping Comparator	Temperature Protection	Power Save Function	Back side coating	Package (mm)
BD6360GUL	2.3 to 5.5	e.g. 1	Drive AF using piezo actuator	2	FULL ON	500	1.0 (V _{CC} =3V, I _O =0.4A)	Parallel	✓	✓	✓	✓	with	VCSP50L2 2.1×2.1, H=Max 0.55
		e.g. 2	Drive Zoom using piezo actuator											