

PRODUCT SELECTION TABLE

MCU Selection Table

| Product Description | Model | Package | Motor Drive Core | | | | | | | | | | | | | | 8051Common Core | | | | | | | | | | | | Drive Interface | | | | | | Drive Mode | | | | | Analog Peripherals | | | | | | Working Voltage(V) | Working Temperature (C) | Refer to the chip manual Version | | | | | | | | |
|---|----------|----------------------|----------------------|-------|------------------------|--------------|-----------------------|-----|---------------------------------------|--------------|--------|---------------------|---------------------|---------------------|---------------------|------------------------------|-----------------|------|----------------------|-----|------------|-----------|---------|------|---------------|-----|-------|-----|-------------------------|-----------------|----------------|-----------------|-------------------------------|------------------------|------------------------|------------------------|------------------|----------------|-----------------------|--------------------|--------------|--------------------|-----|--------|-----|--------------------|-------------------------|----------------------------------|---|--|------|------|--|------|----|-------------|
| | | | FOC Hardware Modules | | SVPWM Hardware Modules | | BLDC Hardware Modules | | Single-phase Control Hardware Modules | | PI/PID | | LPF | | MDU | | Sin/Cos/Atan | | PFC Hardware Modules | | MIPS (MHz) | FLASH(kb) | RAM(kB) | GPIO | Clock circuit | | | | Communication Interface | | | | Timer | | Drive Mode | | | | Drive Voltage/Current | | Single-phase | Three-phase Motor | | | | | | | ADC | | | DAC | | VREF | OP | Comparators |
| | | | FOC | SVPWM | BLDC | Single-phase | PI/PID | LPF | MDU | Sin/Cos/Atan | PFC | Internal Fast Clock | External Fast Clock | Internal Slow Clock | External Slow Clock | PWM(high voltage resistance) | PC | UART | SPI | CAN | | | | | LIN | DMA | Timer | WDT | 6N Pre-driver | 3P3N Pre-driver | 6 Channels PWM | 2P2N Pre-driver | Pre-driver Maximum Voltage(V) | Drive Current IO+ (mA) | Drive Current IO- (mA) | Sensorless Square Wave | Sensorless SVPWM | Sensorless FOC | Sensorless FOC | Number | | Number of Channels | Bit | Number | Bit | | | | | | | | | | | |
| | | | FOC | SVPWM | BLDC | Single-phase | PI/PID | LPF | MDU | Sin/Cos/Atan | PFC | Internal | External | Internal | External | PWM | PC | UART | SPI | CAN | | | | | LIN | DMA | Timer | WDT | 6N Pre-driver | 3P3N Pre-driver | 6 Channels PWM | 2P2N Pre-driver | Pre-driver Maximum Voltage(V) | Drive Current IO+ (mA) | Drive Current IO- (mA) | Sensorless Square Wave | Sensorless SVPWM | Sensorless FOC | Sensorless FOC | Number | | Number of Channels | Bit | Number | Bit | | | | | | | | | | | |
| LV Applications 3P3N Pre-driver | FU6832L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 1 | 1 | 1 | - | 24 | 16 | 1 | 35 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | 1 | 2 | 6 | 1 | - | ✓ | - | - | 36 | 150【1】 | 180 | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 2 | 9\6 | ✓ | 3 | 4 | | | | | | | | |
| | FU6832N | QFN32 (4x4 mm) | ✓ | ✓ | ✓ | - | 4 | 1 | 1 | 1 | - | 24 | 16 | 1 | 22 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | 1 | 2 | 6 | 1 | - | ✓ | - | - | 36 | 150【1】 | 180 | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 11 | 12 | 2 | 9\6 | ✓ | 3 | 4 | 5-28V~-40~85°C 5-15V~-40~105°C | | V2.1 | | | | | |
| | FU6832S | SSOP24 (8.85x3.9 mm) | ✓ | ✓ | ✓ | - | 4 | 1 | 1 | 1 | - | 24 | 16 | 1 | 13 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | 1 | 2 | 6 | 1 | - | ✓ | - | - | 36 | 150【1】 | 180 | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 7 | 12 | 2 | 9\6 | ✓ | 1 | 4 | 5-36V~-40~85°C【3】 5-28V~-40~105°C【3】 | | V2.1 | | | | | |
| | FU6832F | QFN24 (4x4 mm) | - | ✓ | ✓ | - | 4 | 1 | 1 | 1 | - | 24 | 16 | 1 | 13 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | 1 | 2 | 6 | 1 | - | ✓ | - | - | 36 | 150【1】 | 180 | ✓ | ✓ | ✓ | ✓ | ✓ | - | 1 | 7 | 12 | 2 | 9\6 | ✓ | 1 | 4 | | | | | | | |
| MR Sensors LV Applications | FU6832N | QFN40 (6x5 mm) | ✓ | ✓ | ✓ | - | 4 | 1 | 1 | 1 | - | 24 | 16 | 1 | 22 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | ✓ | - | - | 36 | 150【1】 | 180 | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 9 | 12 | 2 | 9\6 | ✓ | 3 | 4 | 5-28V~-40~85°C 5-36V~-40~85°C【3】 | | V1.1 | | | | | |
| | FU6861Q | QFN56 (7x7 mm) | ✓ | ✓ | ✓ | - | 1 | 1 | 1 | 1 | - | 24 | 16 | 1 | 30 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 140 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 12 | 12 | 1 | 9 | ✓ | 3 | 3 | 5-24V~-40~85°C 5-12V~-40~105°C 5-36V~-40~85°C【3】 | | V1.0 | | | | |
| | FU6866Q | QFN56 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 31 | ✓ | ✓ | ✓ | ✓ | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 6 | 1 | ✓ | - | - | - | 180 | 900 | 1100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 16 | 12 | 2 | 9\6 | ✓ | 4 | 3 | 6.5-28V~-40~105°C | | V1.0 | | | | |
| MV Applications 6N Pre-driver | FU6861Q2 | QFN56 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 32 | ✓ | - | ✓ | - | - | 1 | 1 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 180 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 12 | 12 | 1 | 8 | ✓ | 3 | 3 | | | | | | | |
| | FU6861L2 | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 27 | ✓ | - | ✓ | - | - | 1 | 1 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 180 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 11 | 12 | 1 | 8 | ✓ | 3 | 3 | 5-24V~-40~85°C 5-12V~-40~105°C | | V1.6 | | | | |
| | FU6861N2 | QFN40 (6x5 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 19 | ✓ | - | ✓ | - | - | 1 | 1 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 180 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 9 | 12 | 1 | 8 | ✓ | 1 | 3 | 5-36V~-40~85°C【3】 | | V1.6 | | | | |
| | FU6863Q | QFN56 (7x7 mm) | ✓ | ✓ | ✓ | - | 3 | 1 | 1 | 1 | - | 24 | 32 | 1.75 | 32 | ✓ | - | ✓ | ✓ | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 180 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 3 | 9\8\6 | ✓ | 4 | 4 | 5-24V~-40~85°C 5-36V~-40~85°C【3】 | | V1.5 | | | | |
| | FU6865Q | QFN56 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 36 | ✓ | - | ✓ | ✓ | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 140 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 3 | 9\8\6 | ✓ | 4 | 4 | 5-28V~-40~85°C 5-36V~-40~85°C【3】 | | V3.1 | | | | |
| | FU6866Q | QFN56 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 36 | ✓ | ✓ | ✓ | ✓ | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 6 | 1 | ✓ | - | - | - | 180 | 900 | 1100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 16 | 12 | 2 | 9\6 | ✓ | 4 | 3 | 6.5-28V~-40~85°C | | V2.1 | | | | |
| | FU6572L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 31 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 90 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 15 | 12 | 2 | 9\6 | ✓ | 4 | 3 | | | | | | | |
| Full Voltage Applications PWM output | FU6572N | QFN40 (6x5 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 24 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | ✓ | - | - | - | 90 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 2 | 9\6 | ✓ | 4 | 3 | 7-20V~-40~85°C | | V6.0 | | | | |
| | FU6572T | TSSOP28 (9.7x4.4 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 13 | ✓ | - | ✓ | - | - | 1 | - | - | - | 2 | 6 | 1 | ✓ | - | - | - | 90 | 800 | 800 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 10 | 12 | 2 | 9\6 | ✓ | 1 | 3 | | | | | | | | |
| | FU6812L2 | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 34 | ✓ | - | ✓ | - | - | 1 | 1 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 12 | 12 | 1 | 8 | ✓ | 3 | 3 | | | | | | | |
| | FU6812N2 | QFN32 (4x4 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 20 | ✓ | - | ✓ | - | - | 1 | 1 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 7 | 12 | 1 | 8 | ✓ | 1 | 2 | 5-24V~-40~85°C 5-12V~-40~105°C 5-36V~-40~85°C【3】 | | V1.6 | | | | |
| | FU6812S2 | SSOP24 (8.85x3.9 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 12 | ✓ | - | ✓ | - | - | 1 | - | - | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 5 | 12 | 1 | 8 | ✓ | 1 | 2 | | | | | | | |
| | FU6812V | SSOP24 (8.85x3.9 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 12 | ✓ | - | ✓ | - | - | 1 | - | - | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 7 | 12 | 1 | 9 | ✓ | 3 | 2 | | | | | | | |
| | FU6813L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 3 | 1 | 1 | 1 | ✓ | 24 | 32 | 1.75 | 34 | ✓ | - | ✓ | ✓ | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 3 | 9\8\6 | ✓ | 4 | 4 | | | | | | | |
| | FU6813N | QFN32 (4x4 mm) | ✓ | ✓ | ✓ | - | 3 | 1 | 1 | 1 | ✓ | 24 | 32 | 1.75 | 20 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 9 | 12 | 3 | 9\8\6 | ✓ | 2 | 4 | 3-5.5V~-40~125°C 5-24V~-40~85°C 5-12V~-40~105°C 5-36V~-40~85°C【3】 | | V1.5 | | | | |
| | FU6813P | LQFP52 (10x10 mm) | ✓ | ✓ | ✓ | - | 3 | 1 | 1 | 1 | ✓ | 24 | 32 | 1.75 | 35 | ✓ | - | ✓ | ✓ | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 3 | 9\8\6 | ✓ | 4 | 4 | | | | | | | |
| | FU6815L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | ✓ | 24 | 32 | 4 | 38 | ✓ | - | ✓ | ✓ | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 14 | 12 | 3 | 9\8\6 | ✓ | 4 | 4 | 5-28V~-40~85°C 5-36V~-40~85°C【3】 | | V3.1 | | | | |
| HV Applications 6N Pre-driver | FU6816L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 38 | ✓ | ✓ | ✓ | ✓ | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 16 | 12 | 2 | 9\6 | ✓ | 4 | 3 | 6.5-28V~-40~85°C | | V2.1 | | | | |
| | FU6522L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 40 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 16 | 12 | 2 | 9\6 | ✓ | 4 | 3 | | | | | | | |
| | FU6522N | QFN32 (4x4 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 24 | ✓ | - | ✓ | - | - | 1 | 2 | 1 | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 11 | 12 | 2 | 9\6 | ✓ | 4 | 3 | 3-5.5V~-40~105°C【4】 | | V6.0 | | | | |
| | FU6522T | TSSOP28 (9.7x4.4 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 20 | ✓ | - | ✓ | - | - | 1 | 2 | - | - | - | 2 | 6 | 1 | - | - | ✓ | - | - | 50 | 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 13 | 12 | 2 | 9\6 | ✓ | 4 | 3 | | | | | | | |
| | FU6862Q | QFN48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 20 | ✓ | - | ✓ | - | - | 1 | 1 | - | - | - | 2 | 6 | 1 | ✓ | - | - | - | 600 | 210 | 360 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 10 | 12 | 1 | 9 | ✓ | 3 | 3 | 12-20V~-40~85°C | | V1.6 | | | | |
| | FU6862L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 20 | ✓ | - | ✓ | - | - | 1 | 1 | - | - | - | 2 | 6 | 1 | ✓ | - | - | - | 600 | 210 | 360 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 10 | 12 | 1 | 9 | ✓ | 3 | 3 | | | | | | | |
| | FU6862L | LQFP48 (7x7 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 22 | ✓ | - | ✓ | - | - | 2 | 1 | - | - | - | 2 | 6 | 1 | ✓ | - | - | - | 600 | 210 | 360 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 | 13 | 12 | 2 | 9\6 | ✓ | 4 | 3 | 12-20V~-40~105°C | | V6.0 | | | | |
| | FU6562T | TSSOP28 (9.7x4.4 mm) | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 32 | 4 | 9 | ✓ | - | ✓ | - | - | 1 | - | - | - | - | 2 | 6 | 1 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PRODUCT SELECTION TABLE

Three-phase ASIC Series Selection Table

| Product Description | Model | Package | Voltage of Power | | Drive Mode | | | | | Drive Type | | | Control Functions | | | | | | | | | | | | Protect Functions | | | | | | Working temperature Ta (°C) | Refer to the chip manual Version | | | | | | | | | |
|--|---------|-----------------------|------------------|-------------|---------------|-----------------|--------------|--------------|------------------------|------------------------|-------------|-----------------|-------------------|----------------|-------------------------|----------------------|----------------------|------------------------------|---------------------|----------------------------|---------|-----------|-------------|-----------------|-------------------|-----------|-----------------------|----------------------|--------------------------|---------------|-----------------------------|----------------------------------|-------------------------|-------------------------|-----------------------------|------------------------|----------------|-------------|---|------------------------|-----------------------|
| | | | Minimum (V) | Maximum (V) | 6N Pre-Driver | 3P3N Pre-Driver | 6 CanMOS PWM | Built-in MOS | Maximum DC bus voltage | Maximum DC bus current | Square Wave | Sensorless Sine | Sensor Sine | Sensorless FOC | Analog Speed Regulation | PWM Speed Regulation | I2C Speed Regulation | Closed Loop Speed Regulation | Forward and Reverse | Initial position detection | Braking | Precharge | Prelocating | Angular Advance | FG Output | RD Output | Selectable Drive Mode | Adjustable Dead Time | Adjustable Start-up Time | Current Limit | | | Over Current Protection | Locked-rotor Protection | Over Temperature Protection | Temperature Protection | Speed Limiting | Speed Limit | Undervoltage Protection | Overvoltage Protection | Open Phase Protection |
| 3-phase sensorless sinusoidal 5V 500mA PWM, fully built-in | FT3206D | QFN10 (3x3mm) | 2 | 6 | - | - | - | ✓ | 6 | 0.5 | - | ✓ | - | - | - | ✓ | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | - | ✓ | ✓ | - | - | ✓ | - | - | - | - | Ta:-40~105°C | V1.5 | |
| | FT3206N | QFN10 (3x3mm) | 2 | 6 | - | - | - | ✓ | 6 | 0.5 | - | ✓ | - | - | - | ✓ | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | - | ✓ | ✓ | - | - | ✓ | - | - | - | - | Ta:-40~105°C | V1.2 | |
| 3-phase 3-HALL sinusoidal 12V/700mA, 24/400mA closed loop, fully built-in | FT1215Q | QFN24 (4x4mm) | 4.5 | 28 | - | - | - | ✓ | 28 | 0.8 | ✓ | - | ✓ | - | ✓ | ✓ | - | ✓ | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | - | - | Ta:-40~85°C | V1.2 | |
| 3-phase sensorless FOC 12V/2A, fully built-in | FT8213Q | QFN28 (5x5mm) | 5 | 18 | - | - | - | ✓ | 18 | 1 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | (VCC)>0.5A,Ta:-40~85°C (VCC)≤0.5A,Ta:-40~105°C | V1.4 | |
| | FT8215Q | QFN24 (4x4mm) | 5 | 18 | - | - | - | ✓ | 18 | 2 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40 ~ 85 °C | V1.5 | |
| 3-phase 3-HALL sinusoidal 12V, 24V, high power (built-in pre-driver) | FT1128T | TSSOP20 (6.5x6.4mm) | 3.7 | 28 | - | ✓ | - | - | - | - | ✓ | - | ✓ | - | ✓ | ✓ | - | ✓ | - | - | - | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40~125°C | V1.5 | |
| | FT1128Q | QFN28 (5x5mm) | 3.7 | 28 | - | ✓ | - | - | - | - | ✓ | - | ✓ | - | ✓ | ✓ | - | ✓ | - | - | - | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40~125°C | V1.5 | |
| 3-phase sensorless BLDC 12V 24V, high power (built-in pre-driver) | FT3107T | TSSOP20 (6.5x6.4mm) | 3.7 | 28 | - | ✓ | - | - | - | - | ✓ | - | ✓ | - | ✓ | ✓ | - | ✓ | - | - | - | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40~125°C | V1.1 | |
| 3-phase sensor sinusoidal HV (external pre-driver, MOS) | FT1007S | SSOP24 (8.65x3.9mm) | 3.7 | 18 | - | - | ✓ | - | - | - | ✓ | - | ✓ | - | ✓ | ✓ | - | ✓ | - | - | - | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40~125°C | V0.1 | |
| 3-phase sensorless/sensor FOC, or SVPWM 12V, 24V, high power (built-in pre-driver) | FT8132Q | QFN24 (4x4mm) | 6 | 28 | - | ✓ | - | - | - | - | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40 ~ 85°C | V1.3 |
| | FT8132S | SSOP24 (8.65x3.9mm) | 6 | 28 | - | ✓ | - | - | - | - | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40 ~ 85°C | V1.3 |
| | FT8133Q | QFN24 (4x4mm) | 6 | 28 | - | ✓ | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40 ~ 85°C | V1.1 |
| 3-phase sensorless FOC, MV/LV with 6Npre-driver (pre-driver voltage up to 140V) | FT8161N | QFN32 (4x4mm) | 7 | 18 | ✓ | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | VCC > 12V, Ivcc > 30mA Ta:-40 ~ 85°C | V1.0 | |
| | FT8161T | TSSOP28LD (9.7x4.4mm) | 7 | 18 | ✓ | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | VCC ≤ 12V, Ivcc ≤ 30mA Ta:-40 ~ 105°C | V1.0 | |
| 3-phase sensorless FOC, MV/LV with 6Npre-driver (pre-driver voltage up to 600V) | FT8061L | LQFP48 (7x7mm) | 12 | 20 | ✓ | - | - | - | 600 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40~85°C | V1.2 |
| | FT8061T | TSSOP28 (9.7x4.4mm) | 12 | 20 | ✓ | - | - | - | 600 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:-40~85°C | V1.2 |

Single-Phase ASIC Series Selection Table

| Product Description | Model | Package | Drive Mode | Hall Type | Voltage of Power | Maximum DC bus voltage | Maximum DC bus current | FG Output | RD Output | Speed control mode | | Other Functions | | | | | | | | | | Refer to the chip manual Version | | | | | | | | | | | | | | | | | | |
|-----------------------|---------|----------------------|--------------|-----------|------------------|------------------------|------------------------|-----------|-----------|--------------------|-----|-----------------|------------------------|------------------|-----------------------------|-------------------------|------------|-------------------|-------------------|------------------------|---|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------|------|
| | | | | | | | | | | Analog Voltage | PWM | Current Limit | Overcurrent Protection | Stall protection | Over Temperature Protection | Undervoltage Protection | Soft Start | Automatic Restart | Speed Closed Loop | Soft Current Switching | | | | | | | | | | | | | | | | | | | | |
| Analog speed control | FA1210H | HTSSOP14(6.5x6.4mm) | built-in MOS | External | 4.5-18 | 18V | 1.5A | ✓ | - | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | V1.1 | |
| | FA1210T | TSSOP20(6.5x6.4mm) | built-in MOS | External | 4.5-18 | 18V | 1.5A | ✓ | - | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| PWM speed control | FA1220H | HTSSOP14 (6.5x6.4mm) | built-in MOS | External | 4.5-28 | 28V | 1.2A | ✓ | - | - | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | V1.4 |
| | FA1220T | TSSOP20 (6.5x6.4mm) | built-in MOS | External | 4.5-28 | 28V | 1.2A | ✓ | - | - | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | V1.4 |
| PWM/I2C speed control | FA1611S | SOP8 (4.9x3.9mm) | built-in MOS | External | 3.3-16 | 16V | 0.45A | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | V1.2 | |

Note: “ - ” means no such function; “ ✓ ” means yes, have such function; “ * ” means active low

PRODUCT SELECTION TABLE

IPM Selection Table

| Model | Channel | Topology | V _{DC} (V) | I _{DC} (A) | R _{DS(on)} (typ) @25°C | Input Logic | Single Input | Enable Shutdown/Reset | Integrated BSD | Through Prevention | UVLO | V _{CC1+} /V _{V-} (V) | V _{BS1+} /V _{V-} (V) | Package | Refer to the chip manual Version | |
|---------|---------|-----------------|---------------------|---------------------|---------------------------------|-------------|--------------|-----------------------|----------------|--------------------|------|--|--|-----------|----------------------------------|------|
| FS236BQ | 2 | half-bridge | 600 | 3 | 2.1 | 2.4Ω | HIN,LIN | - | - | - | ✓ | V _{cc} /V _{bs} | 12/11V | 10.2/9.2V | QFN10 (5x6 mm) | V0.2 |
| FS256AQ | 2 | half-bridge | 600 | 5 | 3.5 | 1.5Ω | HIN,LIN | - | - | - | ✓ | V _{cc} /V _{bs} | 12/11V | 10.2/9.2V | QFN17 (7x7 mm) | V0.2 |
| FS276AQ | 2 | half-bridge | 600 | 7 | 5 | 1.0Ω | HIN,LIN | - | - | - | ✓ | V _{cc} /V _{bs} | 12/11V | 10.2/9.2V | QFN17 (7x7 mm) | V0.1 |
| FS4030Q | 4 | H bridge | 16 | 30 | 20 | 15mΩ | IN | ✓ | ✓ | ✓ | ✓ | V _{cc} | 3.6/3.4V | - | QFN24 (4x4 mm) | V0.1 |
| FS8003E | 8 | Double H bridge | 15 | 0.7 | 0.58 | 950mΩ | AIN/BIN | ✓ | ✓ | ✓ | ✓ | V _{cc} | 2.7V | - | eTSSI6L (5x4.4 mm) | V0.2 |
| FS4005S | 4 | Double H bridge | 10 | 1.75 | 1.45 | 300mΩ | INI/IN2 | ✓ | ✓ | ✓ | ✓ | V _{cc} | 1.8V | - | SOP8 (4.9x3.9 mm) | V0.2 |
| FS4005D | 4 | Double H bridge | 10 | 1.8 | 1.5 | 280mΩ | INI/IN2 | ✓ | ✓ | ✓ | ✓ | V _{cc} | 1.8V | - | DFN8 (2x2 mm) | V0.1 |

MOSFET Selection Table

| Model | V _{DS} (V) | I _D (A) | R _{DS(on)} (typ) (°C) | t _{rr} (typ) (ns) | Package | Refer to the chip manual Version |
|-----------|---------------------|--------------------|--------------------------------|----------------------------|---------|----------------------------------|
| FMD5N50P5 | 500 | 5 | 1 | 100 | TO-220F | V1.0 |
| FMD5N50E5 | 500 | 5 | 1 | 100 | TO-252 | V1.0 |
| FMD3N60E5 | 600 | 3 | 2.6 | 85 | TO-252T | V1.1 |
| FMD5N60E5 | 600 | 5 | 1.5 | 140 | TO-252T | V1.1 |
| FMD7N60P5 | 600 | 7 | 1.1 | 198 | TO-220F | V1.1 |
| FMD7N60E5 | 600 | 7 | 1.1 | 198 | TO-252T | V1.1 |
| FCD4N60E2 | 600 | 4 | 0.92 | 88 | TO-252 | V1.0 |

Note: “-” means no such function; “✓” means yes, have such function; “*” means active low

HVIC Selection Table

| Model | Channel | Topology | V _S (V) | I _{S+} (mA) | I _{S-} (mA) | Power of Voltage | Input Logic | Single Input | Enable Shutdown/Reset | Integrated BSD | Through Prevention | Overcurrent protection | UVLO | V _{CC1+} /V _{V-} (V) | V _{BS1+} /V _{V-} (V) | Dead Zone (ns) | Package | Refer to the chip manual Version |
|---------|---------|-------------------|--------------------|----------------------|----------------------|------------------|-------------|--------------|-----------------------|----------------|--------------------|------------------------|----------------------------------|--|--|----------------|-----------------------|----------------------------------|
| FD2606S | 2 | half-bridge | 600 | 210 | 360 | 10-20V | HIN,LIN | - | - | - | ✓ | - | V _{cc} /V _{bs} | 8.8/8.0 | 8.8/8.0 | 470 | SOP8 (4.9x3.9 mm) | V1.1 |
| FD2607S | 2 | half-bridge | 600 | 250 | 410 | 10-20V | HIN,LIN | - | - | - | ✓ | - | V _{cc} | 9.2/8.4 | - | 360 | SOP8 (4.9x3.9 mm) | V1.0 |
| FD2203S | 2 | half-bridge | 250 | 1600 | 2300 | 8-20V | HIN,LIN* | - | - | - | ✓ | - | V _{cc} /V _{bs} | 6.9/6.5 | 6.9/6.5 | 250 | SOP8 (4.9x3.9 mm) | V0.4 |
| FD2103S | 2 | half-bridge | 180 | 1000 | 1000 | 10-20V | HIN,LIN* | - | - | - | ✓ | - | V _{cc} | 8.9/8.2 | - | 100 | SOP8 (4.9x3.9 mm) | V0.5 |
| FD2109S | 2 | half-bridge | 180 | 5000 | 5000 | 10-18V | HIN,LIN | - | - | - | ✓ | - | V _{cc} /V _{bs} | 8.8/8.2 | 8.8/8.2 | 280 | SOP8 (4.9x3.9 mm) | V0.1 |
| FD2024S | 2 | Double low-end | - | 1200 | 1300 | 4-18V | INI,IN2 | - | - | - | - | - | V _{cc} | 3.5/3.3 | - | - | SOT23-6 (2.92x1.6 mm) | V0.1 |
| FD6636S | 6 | Three half bridge | 600 | 210 | 360 | 10-20V | HIN*,LIN* | - | ✓ | - | ✓ | ✓ | V _{cc} /V _{bs} | 9.0/8.4 | 8.9/8.1 | 300 | SOP28 (18x7.5 mm) | V0.3 |
| FD6287T | 6 | Three half bridge | 250 | 1500 | 1800 | 7-20V | HIN,LIN* | - | - | - | ✓ | - | V _{cc} /V _{bs} | 6.4/6.0 | 6.4/6.0 | 200 | TSSOP20 (6.5x4.4 mm) | V0.4 |
| FD6288T | 6 | Three half bridge | 250 | 1500 | 1800 | 5-20V | HIN,LIN | - | - | - | ✓ | - | V _{cc} /V _{bs} | 4.6/4.3 | 4.6/4.3 | 200 | TSSOP20 (6.5x4.4 mm) | V1.5 |
| FD6288Q | 6 | Three half bridge | 250 | 1500 | 1800 | 5-20V | HIN,LIN | - | - | - | ✓ | - | V _{cc} /V _{bs} | 4.6/4.3 | 4.6/4.3 | 200 | QFN24 (4x4 mm) | V0.2 |
| FD6187T | 6 | Three half bridge | 180 | 800 | 800 | 5-22V | HIN,LIN* | - | - | - | ✓ | - | V _{cc} | 4.4/4.1 | - | 100 | TSSOP20 (6.5x4.4 mm) | V0.2 |

IPM(ASIC) Selection Table

| Product Description | Model | Package | Voltage of Power | | Drive Mode | | | | | | Drive Type | | Control Functions | | | | | | | | | | | | | Protect Functions | | Working temperature Ta (°C) | Refer to the chip manual Version | | | | | | | | | | | | |
|---------------------|----------|-------------------------|------------------|-------------|---------------|-----------------|----------------|--------------|------------------------|------------------------|-------------|-----------------|-------------------|----------------|-------------------------|----------------------|---------------------|------------------------------|-------------------------------|--------------------------|-----------|-------------|-----------------|-----------|-----------|-----------------------|----------------------|-----------------------------|----------------------------------|--------------------------|---------------|-------------------------|-----------------------|-----------------------------|---------------------------------|-------------|-------------------------|------------------------|-----------------------|--------------------------|------|
| | | | Minimum (V) | Maximum (V) | 6V Pre-Driver | 3P3W Pre-Driver | 6 Channels PWM | Brake-in MOS | Maximum DC bus voltage | Maximum DC bus current | Square Wave | Sensorless Sine | Sensor Sine | Sensorless FOC | Analog Speed Regulation | PWM Speed Regulation | FC Speed Regulation | Closed Loop Speed Regulation | Forward and Reverse detection | Initial position Braking | Precharge | Prelocating | Angular Advance | FG Output | RD Output | Selectable Drive Mode | Adjustable Dead Time | | | Adjustable start-up time | Current Limit | Over Current Protection | Lock rotor Protection | Over Temperature Protection | Temperature limiting protection | Speed Limit | Undervoltage Protection | Overvoltage Protection | Open Phase Protection | Protection of Hall fault | |
| Fully integrated | FS9226AS | SSOPA54-38 (22x11.4 mm) | 13 | 20 | - | - | - | ✓ | 600 | 2.0 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:--40-85°C | V1.1 |
| | FS9236AS | SSOPA54-38 (22x11.4 mm) | 13 | 20 | - | - | - | ✓ | 600 | 3.0 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:--40-85°C | V1.2 |
| | FS9256AS | SSOPA54-38 (22x11.4 mm) | 13 | 20 | - | - | - | ✓ | 600 | 5.0 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:--40-85°C | V1.0 |
| | FS9276AS | SSOPA54-38 (22x11.4 mm) | 13 | 20 | - | - | - | ✓ | 600 | 7.0 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:--40-85°C | V1.0 |
| | FS92A6AS | SSOPA54-38 (22x11.4 mm) | 13 | 20 | - | - | - | ✓ | 650 | 12.0 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ta:--40-85°C | V0.1 |

IPM(MCU) Selection Table

| Product Description | Model | Motor Drive Core | | | | | | | | | | | | 8051Common Core | | | | | | | | | | | Drive Interface | | Drive Mode | | Analog Peripherals | | | | | Working Voltage(V) | Working Temperature(°C) | Package | Refer to the chip manual Version | | | | | | | | | | | | | | | |
|---------------------|----------|----------------------|------------------------|----------------------|---------------------------------------|---------|-----|-----|----------------|----------------------|-------------|------------|----------|-----------------|---------------------|---------------------|---------------------|---------------------|------------------------------|-----|------|-----|-----|-----|-----------------|-------|------------|---------------|--------------------|----------------|-----------------|------------------------|--------------------------|--------------------|-------------------------|---------|----------------------------------|-------------------------|-----------------------|--------------------|------------|----------|----------------|---|---|---|-----------------|-----------------------|------------------|-----------------------|------------------|-----------------------|
| | | FOC Hardware Modules | SVPWM Hardware Modules | BUC Hardware Modules | Single-phase Control Hardware Modules | PLL/PLD | LPF | MPI | Sin/Cos/Arctan | FOC Hardware Modules | MIPS (MIPZ) | FLASH (KB) | RAM (KB) | QPI0 | Internal Fast Clock | External Fast Clock | Internal Slow Clock | External Slow Clock | PM (high voltage resistance) | TPC | UART | SPI | CAN | LIN | DMA | Timer | WDT | 6V Pre-driver | 3P3W Pre-driver | 6 Channels PWM | 2P2N Pre-driver | Maximum DC bus voltage | Single-phase Square Wave | | | | | Sensorless Sensor SPPWM | Sensorless Sensor FOC | Number of Channels | Bit Number | Bit VREF | Op Comparators | | | | | | | | | |
| Fully integrated | FS9650AH | ✓ | ✓ | ✓ | - | 4 | 1 | 1 | 1 | - | 24 | 16 | 1 | 25 | ✓ | - | - | - | 1 | 2 | - | - | - | 2 | 6 | 1 | - | - | - | - | 28 | 5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 5-28V; -40-85°C | QHF8P8080-60L (8x8mm) | V1.0 | | | |
| | FS9636AH | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 18 | ✓ | - | - | - | - | 1 | 1 | - | - | 2 | 6 | 1 | - | - | - | - | 600 | 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 12-20V; -40-85°C | WBQHF8P-45L (12x12mm) | V1.0 | |
| | FS9676AH | ✓ | ✓ | ✓ | - | 4 | 4 | 4 | 4 | - | 24 | 16 | 1 | 18 | ✓ | - | - | - | - | 1 | 1 | - | - | 2 | 6 | 1 | - | - | - | - | 600 | 7 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 12-20V; -40-85°C | WBQHF8P-45L (12x12mm) |

PRODUCT SELECTION TABLE

Revision History

| Rev. | Description | Date | Prepared By |
|------|---|------------|-------------|
| V5.0 | Edition format modification | 2023-12-20 | Bobsare |
| V5.1 | For details, please refer to the Chinese version. | 2023-12-29 | Bobsare |
| V5.2 | For details, please refer to the Chinese version. | 2024-01-11 | Bobsare |
| V5.3 | For details, please refer to the Chinese version. | 2024-01-15 | Bobsare |
| V5.4 | For details, please refer to the Chinese version. | 2024-04-10 | Bobsare |
| V5.5 | For details, please refer to the Chinese version. | 2024-04-11 | Bobsare |
| V5.6 | For details, please refer to the Chinese version. | 2024-05-08 | Bobsare |

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