

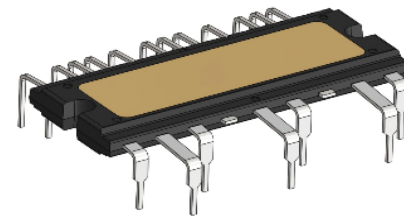


Working Together for
a Greener Society

Future of Power Electronics and the Earth



3-phase Brushless Motor Driver ICs (Built-in 250 V–1200 V Power Transistors) Selection Guide



All information in this guide is as of the date of publication. Please make sure that you are using the latest version of the guide.

If you need more product information, please refer to our data sheets.

<https://www.sanken-ele.co.jp/en>

Motor Driver ICs for 3-phase Brushless Motors (250 V–1200 V Transistors)

This guide introduces SanKen’s motor driver ICs, which integrate the following components into a single package: 3-phase inverter bridges using power transistors, gate driver circuits and bootstrap diodes. Your motor circuit can be downsized effectively with these ICs. Our large selection of ICs will help you find the best match for your application.

- (1) External bootstrap diode should be added
- (2) Built-in junction temperature monitor
- (3) Under development

1-shunt

ZIP (Fully Molded)



SMA6821MH 250 V, 2.0A

ZIP (with Heatsink)

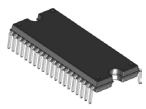


SLA6826MH 250 V, 2.0 A

SLA6868MH/70MH 500 V, 2.5 to 3.0 A

SLA6805MH⁽¹⁾ 600V, 3.0 A

DIP



SIM2602M
Hall element input supported 600 V, 5.0 A

3-shunt

SMD



SX6812xM 600 V, 1.5 to 2.0 A
Hall element input supported

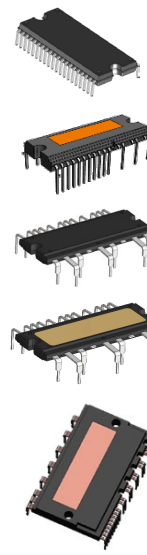
SX6820xM 250 V, 2.0 A
Sensorless vector control 600 V, 1.5 to 2.0 A

ZIP (with Heatsink)



SLA6846MH⁽¹⁾ 600 V, 5.0 A

DIP



SIM689xM/MD/MDN⁽²⁾ 600 V, 2.5 to 10 A

SIM2-151/A/AB 600 V, 15 A

SIM2-202B⁽²⁾ 600 V, 20 A

SCM1242MA 600 V, 15 A

SCM1272MA⁽²⁾ 600 V, 15 A

SCM1274MB⁽²⁾⁽³⁾ 600 V, 20 A

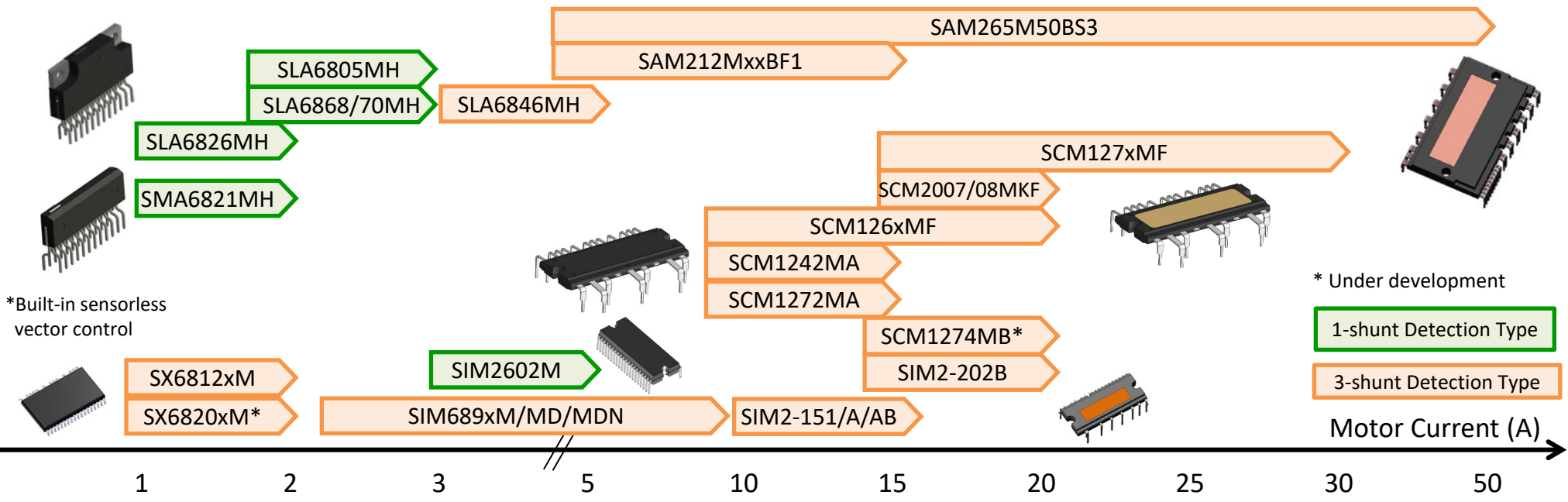
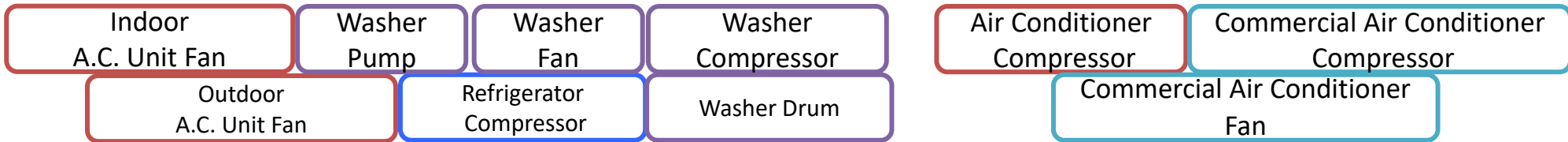
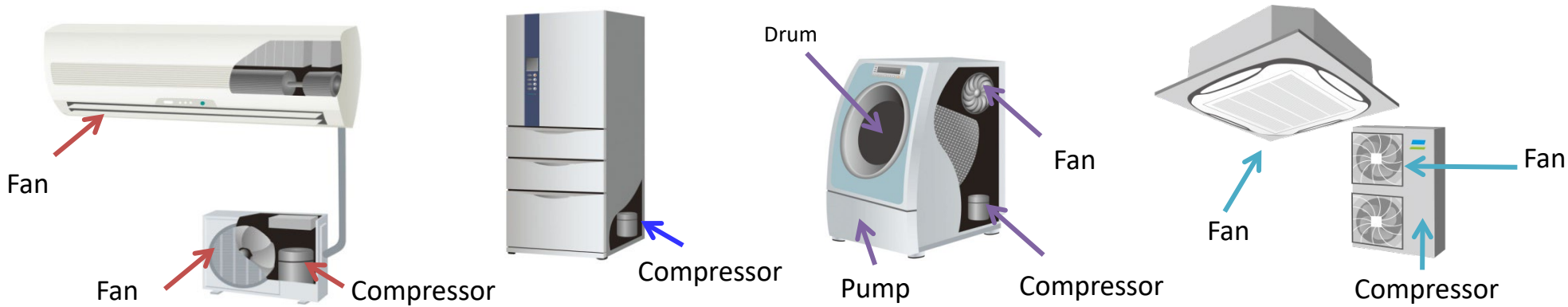
SCM126xMF 600 V, 10 to 20 A
SCM127xMF⁽²⁾ 600 V, 15 to 30 A

SCM2007MKF 600 V, 20 A
SCM2008MKF 600 V, 30 A

SAM265M50BS3 650 V, 50 A

SAM212MxxBF1 1200 V, 5 to 10 A

Applications: 3-phase Brushless Motor Driver ICs (250 V–1200 V)



*Built-in sensorless vector control

* Under development

1-shunt Detection Type



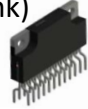
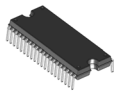
3-shunt Detection Type

Motor Current (A)

The following tables show our 3-phase brushless motor driver ICs that have 250–1200 V power transistors. Our extensive range of ICs will give you application-based choices.

◆ 1-shunt Detection Type

* Bootstrap diodes with current limiting resistors

I_o	Series	Breakdown voltage	Package	Input voltage level	D_{BOOT}^*	OCP	TD	TSD	Features	Page
2.0 A	SMA6821MH	250 V	ZIP24 	3.3 V /5.0 V	Built-in	—	150 °C	—	➤ Regulator output	p.7
2.0 A	SLA6826MH	250 V	ZIP24 (Heatsink) 	3.3 V /5.0 V	Built-in	—	150 °C	—	➤ Regulator output	p.7
2.5 to 3 A	SLA6868MH SLA6870MH	500 V		3.3 V /5.0 V	Built-in	✓	—	135 °C	➤ Overcurrent limiting	p.8
3 A	SLA6805MH	600 V	ZIP23 (Heatsink) 	3.3V /5.0V	—	✓	—	—		p.9
5 A	SIM2602M	600 V	DIP40 	—	Built-in	✓	—	130 °C	<ul style="list-style-type: none"> ➤ Hall element input supported ➤ Regulator output ➤ Overcurrent limiting 	p.10

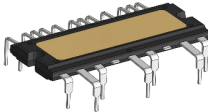
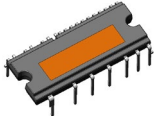
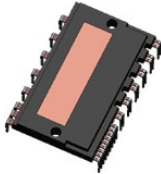
◆ 3-shunt Detection Type

* Bootstrap diodes with current limiting resistors

I_o	Series	Breakdown voltage	Package	Input voltage level	D_{BOOT}^*	OCP	TD	TSD	Features	Page
1.5 to 2 A	SX6812xM	600 V	SOP36 	—	Built-in	✓	—	130 °C	<ul style="list-style-type: none"> ➤ Hall element input supported ➤ Regulator output 	p.12
1.5 to 2 A	SX6820xM	250 V 600 V		—	Built-in	✓	—	135 °C	<ul style="list-style-type: none"> ➤ Built-in sensorless vector control ➤ Simultaneous On-state prevention 	p.13
2.5 to 10 A	SIM689xM/ MD/MDN	600 V	DIP40 	3.3 V/ 5.0 V	Built-in	✓	—	150 °C	<ul style="list-style-type: none"> ➤ Built-in temperature monitor 	p.16
5 A	SLA6846MH	600 V	ZIP24 (Heatsink) 	3.3 V/ 5.0 V	—	—	150 °C	—	<ul style="list-style-type: none"> ➤ Regulator output 	p.18
5 to 15 A	SAM212MxxBF1	1200 V	DIP30 	3.3 V/ 5.0 V	Built-in	✓	—	—	<ul style="list-style-type: none"> ➤ Built-in thermistor 	p.19
15 A	SIM2-151/A/AB	600 V	DIP40 	3.3 V/ 5.0 V	Built-in	✓	—	120 °C	<ul style="list-style-type: none"> ➤ Built-in temperature monitor 	p.20
15 A	SCM1242MA	600 V	DIP33 	3.3 V/ 5.0 V	Built-in	✓	—	150 °C		p.21
15 A	SCM1272MA	600 V		3.3 V/ 5.0 V	Built-in	✓	—	150 °C	<ul style="list-style-type: none"> ➤ Built-in temperature monitor 	p.22

◆ 3-shunt Detection Type

*Bootstrap diodes with current limiting resistors

I_o	Series	Breakdown voltage	Package	Input voltage level	D_{BOOT}^*	OCP	TD	TSD	Features	Page
10 to 20 A	SCM12xxMF	600 V	DIP33 (Heatsink) 	3.3 V/ 5.0 V	Built-in	✓	—	150 °C	➤ Simultaneous on-state prevention	p.23
20 A	SCM1274MB*	600 V		3.3V/ 5.0V	Built-in	✓	—	150 °C	➤ Built-in temperature monitor ➤ Simultaneous on-state prevention	p.24
15 to 30 A	SCM127xMF	600 V		3.3 V/ 5.0 V	Built-in	✓	—	—	➤ Built-in temperature monitor ➤ Simultaneous on-state prevention	p.25
20 to 30 A	SCM200xMKF	600 V		3.3V/ 5.0V	Built-in	✓	—	—	➤ Built-in NTC thermistor	p.26
20 A	SIM2-202B	600 V	DIP40 	3.3V/ 5.0V	Built-in	✓	—	120 °C	➤ Built-in temperature monitor	p.27
50 A	SAM265M50BS3	650 V	DIP30 	3.3V/ 5.0V	Built-in	✓	—	—	➤ Built-in thermistor	p.28

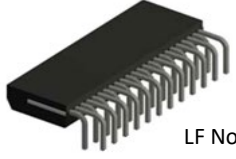
* Under development

SMA/SLA682xMH Series

1-shunt Detection Type

Package

ZIP24
Fully molded



LF No. 2451



LF No. 2175



LF No. 2452

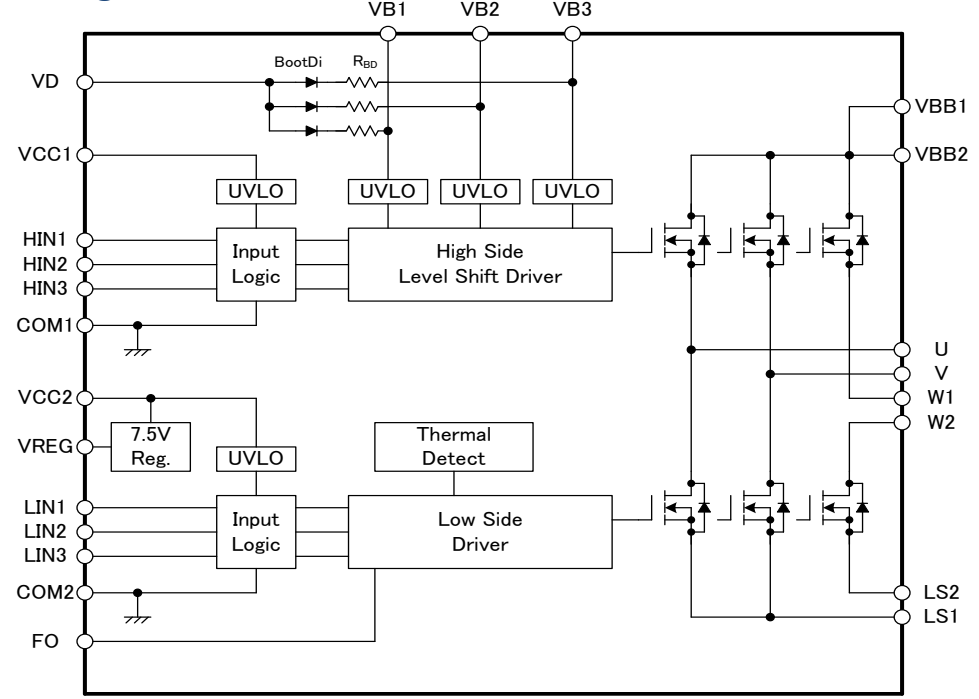


LF No. 2171

Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ Built-in Low Dissipation Power MOSFETs
- ◆ 7.5 V Regulator Output
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Protections:
 - Thermal Detection (TD): 150 °C (typ.)
 - Undervoltage Lockout for Power Supply (UVLO)

Block Diagram



Selection Guide

Package	Part Number	V _{DSS}	I _D	R _{DS(ON)} max.
With heatsink	SLA6826MH	250 V	2.0 A	1.5 Ω
Fully molded	SMA6821MH	250 V	2.0 A	1.5 Ω

SLA6868MH, SLA6870MH

1-shunt Detection Type

Package

ZIP24

with aluminum heatsink



LF No. 2175

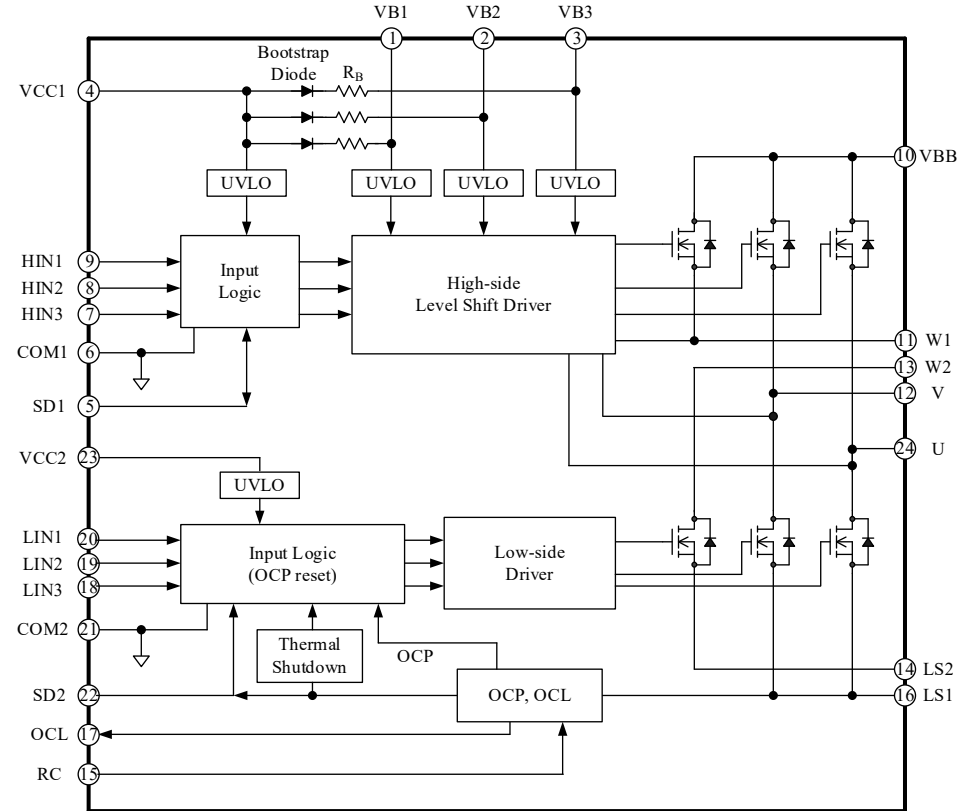


LF No. 2171

Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Protections:
 - Overcurrent Protection (OCP)
 - Overcurrent Limit (OCL)
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD): 135 °C (typ.)

Block Diagram (Power MOSFET Type)



Selection Guide

Part Number	V_{DSS}	I_D	$R_{DS(ON)}$ max.
SLA6868MH	500 V	2.5 A	2.4 Ω
SLA6870MH		3.0 A	1.7 Ω

SLA6805MH

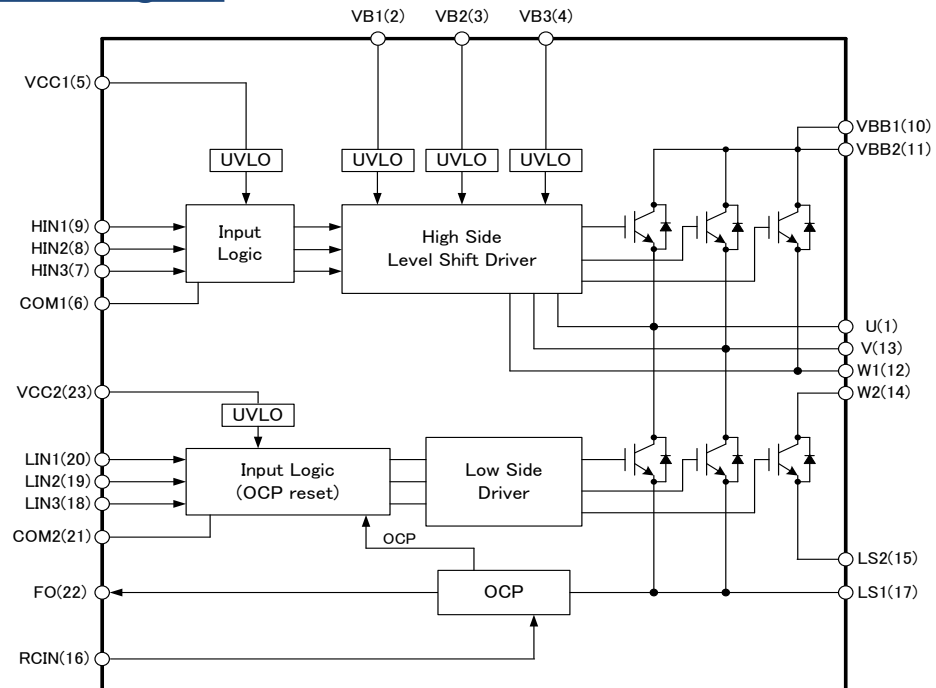
1-shunt Detection Type

Package

ZIP23
with aluminum heatsink



Block Diagram



Features

- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Protections:
 - Overcurrent Protection (OCP) with Adjustable OCP Hold Time
 - Undervoltage Lockout for Power Supply (UVLO)

Selection Guide

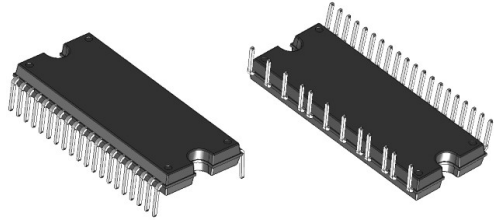
Part Number	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SLA6805MH	600 V	3.0 A	1.75 V

SIM2602M

1-shunt Detection Type

Package

DIP40

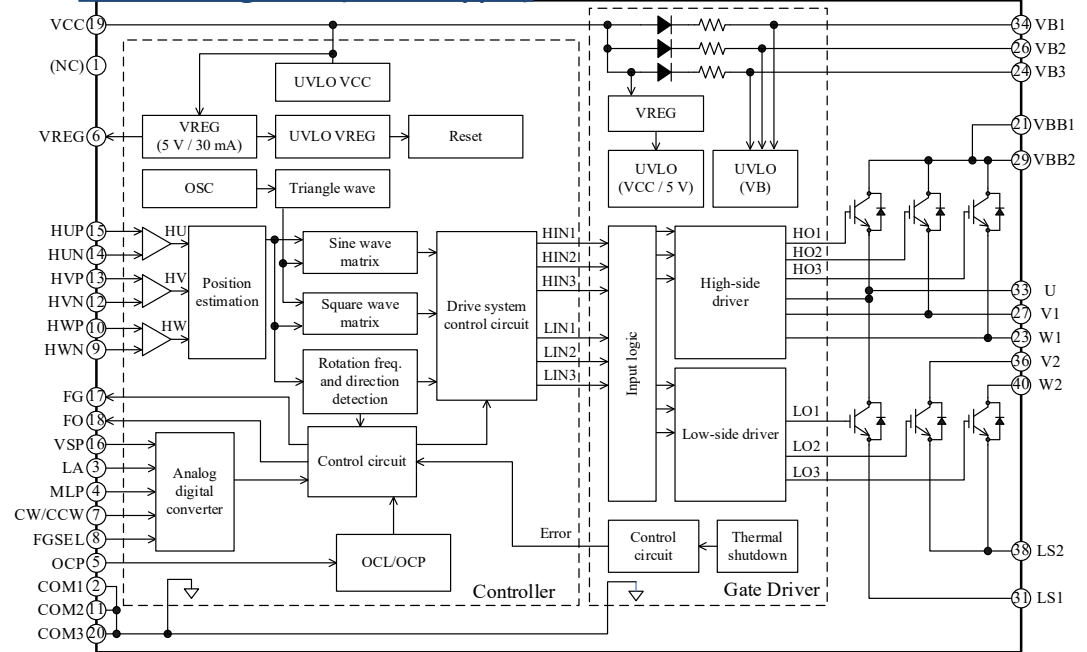


Size: 36.0 mm × 14.8 mm × 4.0 mm
LF No. 2972

Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ Hall Element Input Supported
- ◆ 5 V Reference Voltage Output for Power Supply such as Hall Sensor
- ◆ Overcurrent Limit (OCL)
- ◆ Protections:
 - Overcurrent Protection (OCP)
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD): 130 °C (typ.)
 - Locked Motor Protection

Block Diagram (IGBT Type)



Selection Guide

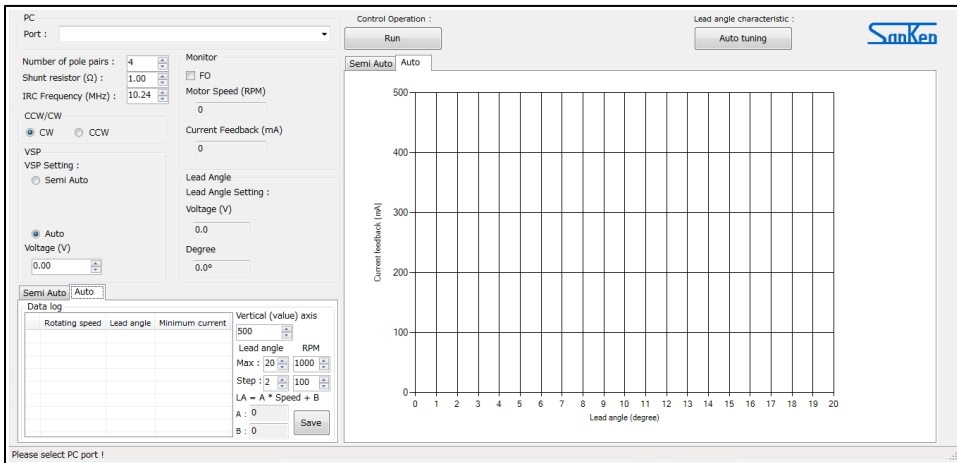
Part Number	Output Transistor	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SIM2602M	IGBT + FRD	600 V	5.0 A	1.75 V

SIM2602M

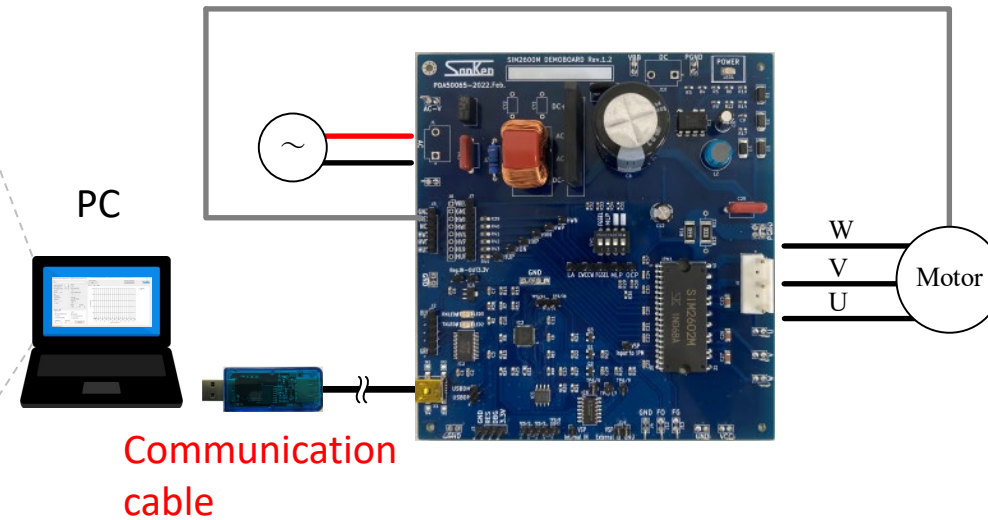
1-shunt Detection Type

We offer the dedicated GUI (Graphical User Interface) for this product to help you set parameters effortlessly. You can easily tune a phase advance angle by connecting the SIM2602M and your PC directly with a communication cable.

◆ GUI for SIM2602M



◆ Schematic View of System



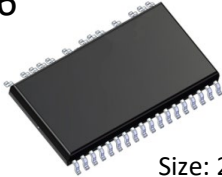
[**SIM2602M Special Page**](#)

SX6812xM Series

3-shunt Detection Type

Package

SOP36

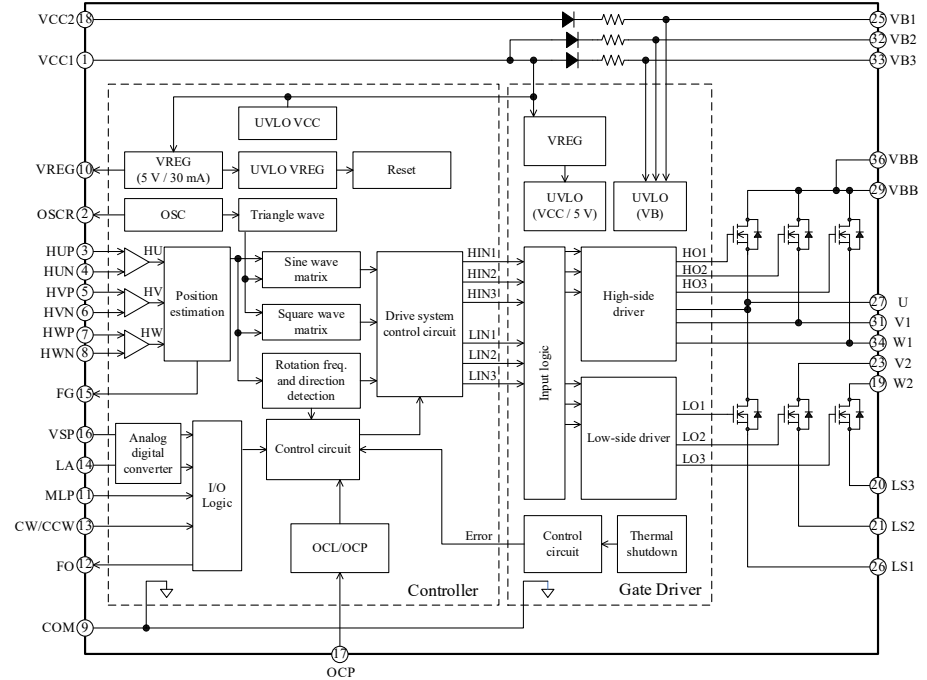


Size: 22 mm × 14.1 mm × 2.1 mm

Features

- ◆ Sine-wave Current Waveform for High-efficient and Quiet Motor Operation
- ◆ PCB Area and Component Count Reduced
 - Hall Element Input Supported
 - Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ Phase Advance by External Input Signal
- ◆ Fault Signal Output
- ◆ Motor Rotation Direction Switch
- ◆ Adjustable Switching Frequency
- ◆ 5 V Reference Voltage Output (Such as for Hall Sensor Drive)
- ◆ 3-shunt Current Detection
- ◆ Protections:
 - Motor Lock Protection
 - Overcurrent Protection (OCP)
 - Overcurrent Limit (OCL)
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD): 130 °C (typ.)

Block Diagram



Selection Guide

Part Number	V_{DSS}	I_D	$R_{DS(ON)}$ max.	Rotation Pulse Signal
SX68128MA	600 V	1.5 A	3.6 Ω	3.0 ppr
SX68128MB		1.5 A	3.6 Ω	2.4 ppr
SX68127MA		2.0 A	2.5 Ω	3.0 ppr

SX6820xM Series

3-shunt Detection Type

Package

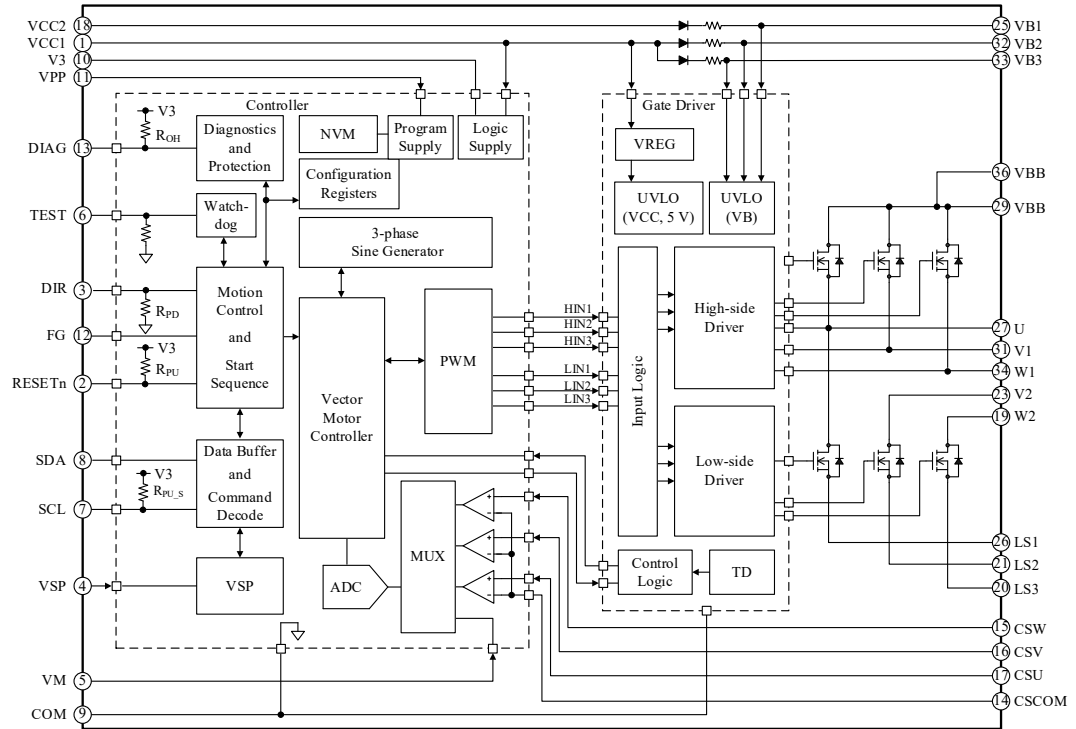
SOP36



Size: 22 mm × 14.1 mm × 2.1 mm

- ◆ High Efficiency at Load Variation
- ◆ Sine-wave Current Waveform for High-efficient and Quite Motor Operation
- ◆ PCB Area and Component Count Reduced
 - Built-in Sensorless Vector Control
 - Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ Simplified Setting
 - EEPROM as a Control Parameter Storage
 - PI Control with 2 Speed Control Modes
 - Analog Voltage Control by V_{SP}
 - Serial Communications Control (I²C Compatible)
- ◆ 3-shunt Current Detection
- ◆ DIAG Pin Fault Signal Output
- ◆ Protections:
 - V3, VCCx, and VBx Pins Undervoltage Protection
 - Watchdog Timeout Detection
 - Memory Error Detection
 - Overvoltage Protection and Undervoltage Lockout for Main Power Supply (VM Pin)
 - Soft/Hard Overcurrent Protection
 - Thermal Warning: 135 °C (typ.)
 - Thermal Shutdown: 150 °C (typ.)
 - Loss-of-Synchronization Protection

Block Diagram



Selection Guide

Part Number	V _{DSS}	I _D	R _{DS(ON)} max.
SX68201M	250 V	2.0 A	1.5 Ω
SX68204M*	600 V	1.5 A	3.6 Ω
SX68205M		2.0 A	2.5 Ω

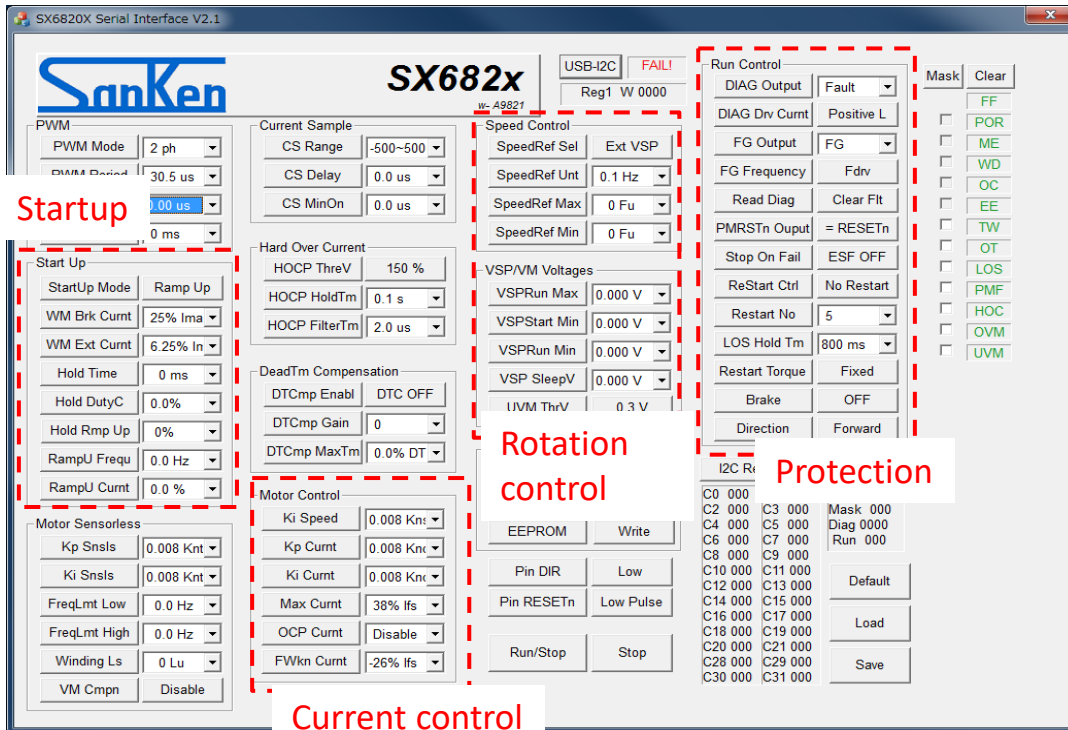
*Under development

SX6820xM Series

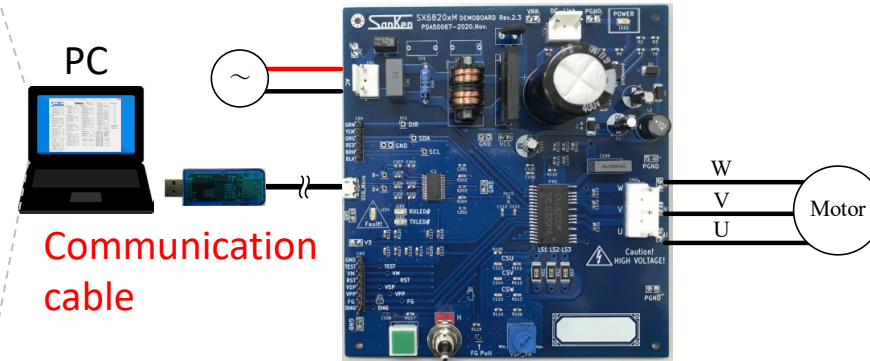
3-shunt Detection Type

We offer the dedicated GUI (Graphical User Interface) that allows you to set optimal parameters even during motor rotation. You can easily write parameters by connecting an SX6820xM series device and your PC directly with a communication cable.

◆ GUI for SX6820xM Series



◆ Schematic View of System



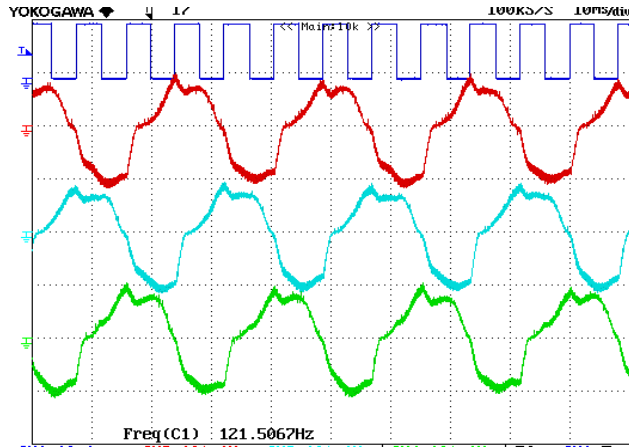
[**SX6820xM Series Special Page**](#)

SX6820xM Series

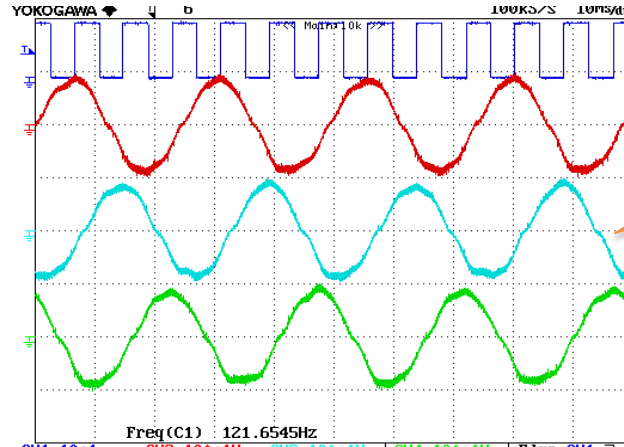
3-shunt Detection Type

◆ Achieves High-efficient and Quiet Motor Operation

■ Existing Product



■ SX6820xM Series



The motor current is nearly a sine wave.

◆ Reduces PCB Area and Component Count

- Small and Thin Package
- Built-in Sensorless Vector Control
- Built-in Bootstrap Diodes with Current Limiting Resistors

■ Existing Product

Outer diameter: 75 mm
Inner diameter: 20 mm
(Area: 4102 mm²)
Component count: 72



55%
Down in PCB Area

45%
Down in Comp. Count

■ SX6820xM Series



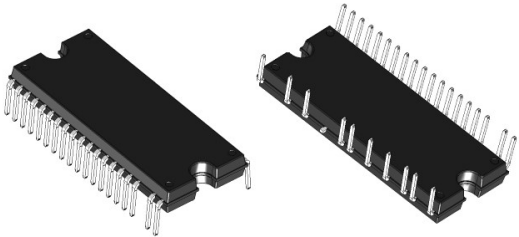
Area: 46 mm × 40 mm = 1840 mm²
Component count: 39

SIM689xM/MD/MDN Series

3-shunt Detection Type

Package

DIP40

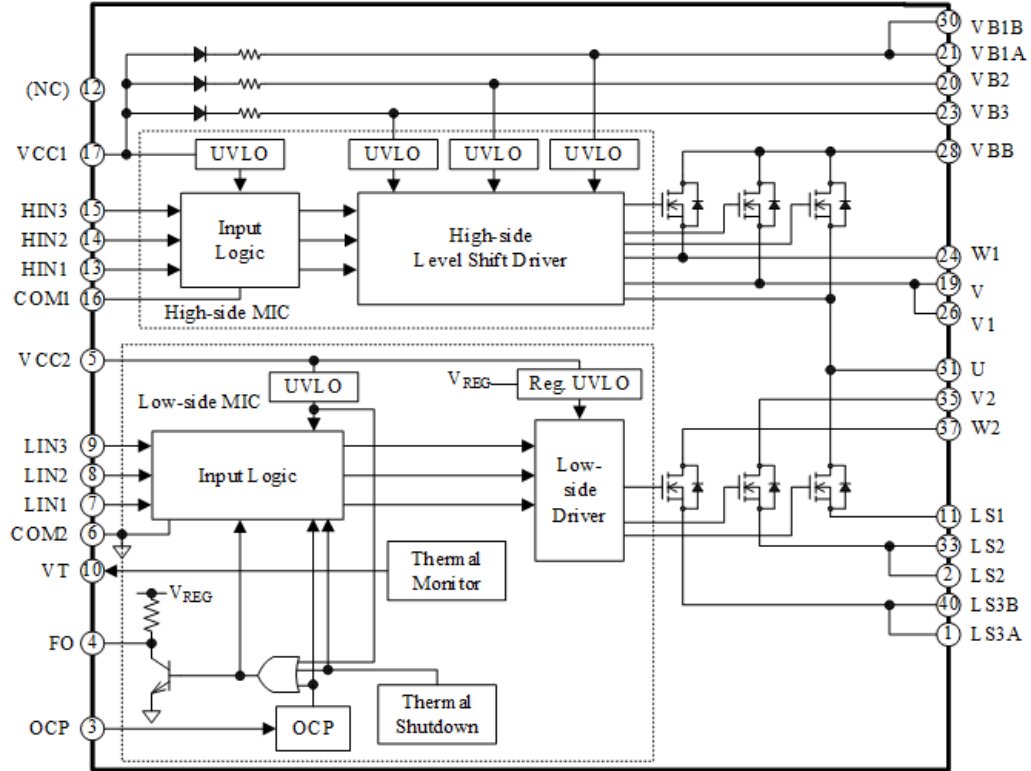


Size: 36.0 mm × 14.8 mm × 4.0 mm
LF No. 2971

Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ 3-shunt Current Detection
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Overcurrent Limit (OCL)
- ◆ Built-in Temperature Monitor
- ◆ Protections:
 - Overcurrent Protection (OCP)
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD): 150 °C (typ.)
- ◆ Isolation Voltage: 1500 V for 1 min, UL-recognized Component

Block Diagram (Power MOSFET Type)



SIM689xM/MD/MDN Series

3-shunt Detection Type

Selection Guide

Part Number	Output Transistor	V_{DSS}/V_{CES}	I_D/I_C	$R_{DS(ON) max.}/V_{CE(SAT) typ.}$	Remarks
SIM6891MD	Power MOSFET	600 V	2.5 A	2.5 Ω	Low switching dissipation
SIM6891MDN*			2.5 A	2.5 Ω	Low noise
SIM6893M			5.0 A	0.6 Ω	
SIM6896M	IGBT + FRD		3.0 A	1.85 V	
SIM6892M			5.0 A	1.75 V	Low switching dissipation
SIM6895M			5.0 A	1.75 V	Low noise

*Under development

SLA6846MH

3-shunt Detection Type

Package

ZIP24
with aluminum heatsink

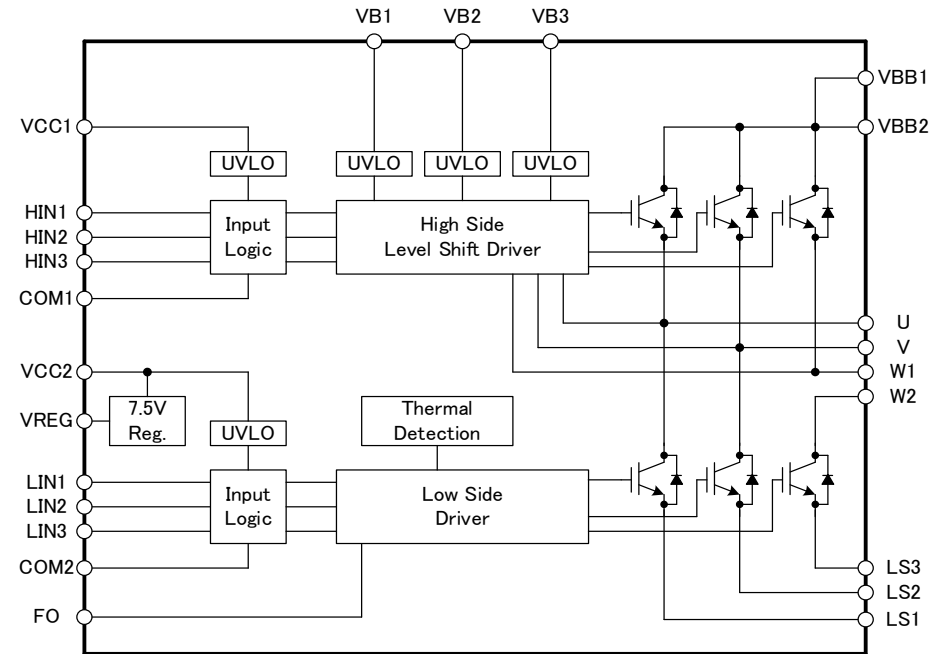
LF No. 2175



LF No. 2171



Block Diagram



Features

- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ 7.5 V Regulator Output
- ◆ 3-shunt Current Detection
- ◆ Protections:
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Detection (TD): 150 °C (typ.)

Selection Guide

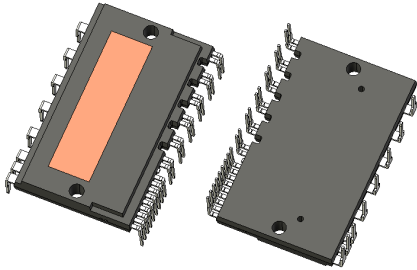
Part Number	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SLA6846MH	600 V	5.0 A	1.75 V

SAM212MxxBF1

3-shunt Detection Type

Package

DIP30

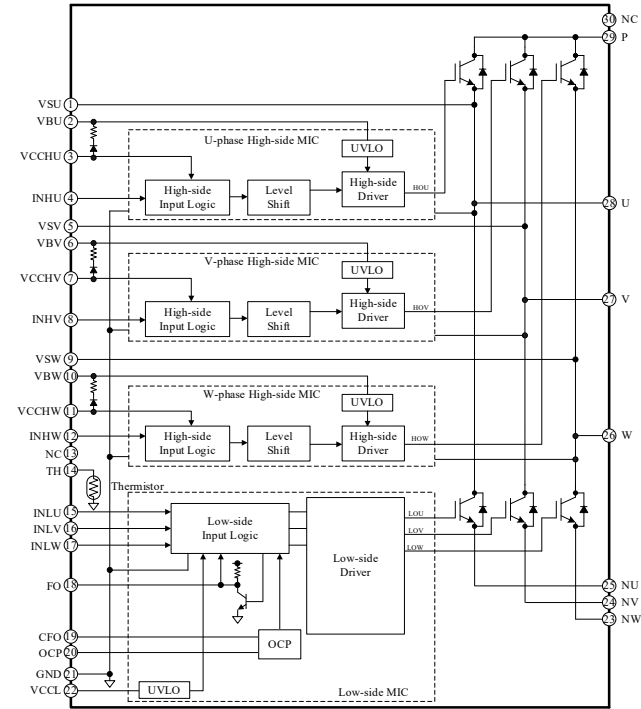


LF No. 2540 / 2541
Size: 52.5 mm × 31 mm × 5.6 mm

Features

- ◆ Pb-free (RoHS Compliant)
- ◆ Isolation Voltage: 2500 V (for 1 min)
- ◆ Built-in Thermistor
- ◆ Built-in Bootstrap Diodes
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Fault Signal Output at Protection Activation
- ◆ Shutdown Signal Input
- ◆ Adjustable OCP Hold Time
- ◆ Protections:
 - Undervoltage Lockout for Power Supply
VBx Pin (UVLO_VBx): Auto-restart
VCCL Pin (UVLO_VCCL): Auto-restart
 - Overcurrent Protection (OCP): Auto-restart

Block Diagram



Selection Guide

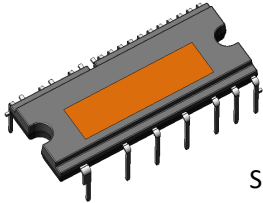
Part Number	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SAM212M05BF1	1200 V	5 A	1.3 V
SAM212M10BF1		10 A	1.6 V
SAM212M15BF1		15 A	1.6 V

SIM2-151/A/AB

3-shunt Detection Type

Package

DIP40

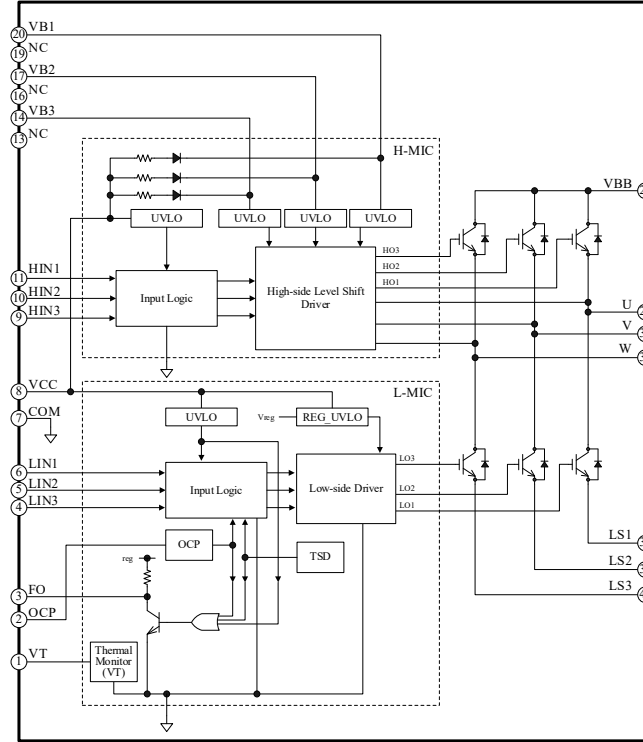


Size: 35.7 mm × 14.6 mm × 4.2 mm

Features

- ◆ Pb-free (RoHS Compliant)
- ◆ Isolation Voltage: 2000 V (for 1 min)
UL-recognized Component (File No.: E118037)
- ◆ Temperature Sensing Function
- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors (250 Ω)
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Fault Signal Output at Protection Activation
- ◆ Protections:
 - Undervoltage Lockout for Power Supply
High-side (UVLO_VB): Auto-restart
Low-side (UVLO_VCC): Auto-restart
 - Overcurrent Protection (OCP): Auto-restart
 - Thermal Shutdown (TSD): Auto-restart with an Operating Range of ±5 °C

Block Diagram



Selection Guide

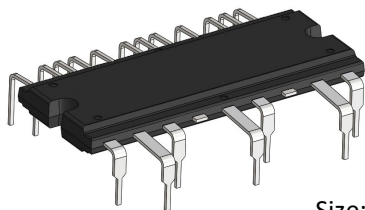
Part Number	Output Transistor	V_{CES}	I_C	$V_{CE(SAT)}$ typ.	$R_{(J-C)Q}$ max.
SIM2-151	FS-IGBT + FRD	600 V	15 A	1.7 V ($I_C = 15$ A)	3.2 °C/W
SIM2-151A				1.6 V ($I_C = 10$ A)	3.6 °C/W
SIM2-151AB				1.6 V ($I_C = 10$ A)	3.6 °C/W

SCM1242MA

3-shunt Detection Type

Package

DIP33

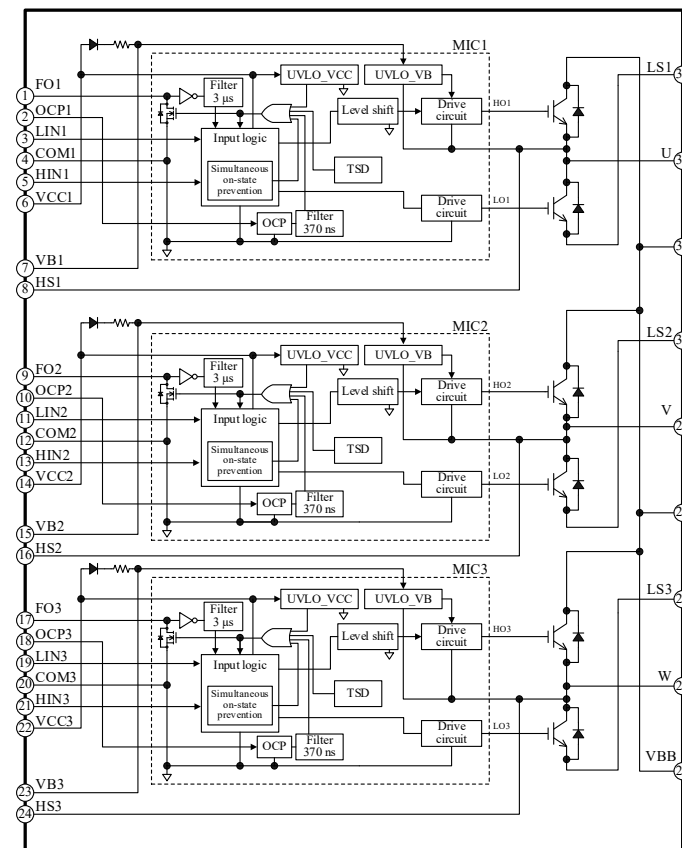


Size: 47 mm × 19 mm × 4.4 mm
LF No. 2551

Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ 3-shunt Current Detection
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Protections:
 - Overcurrent Protection (OCP)
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD): 150 °C (typ.)
- ◆ Isolation Voltage: 2000 V for 1 min,
UL-recognized Component

Block Diagram

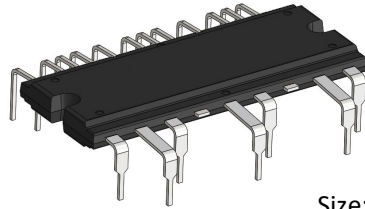


Selection Guide

Part Number	Output Transistor	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SCM1242MA	IGBT + FRD	600	15 A	1.7 V

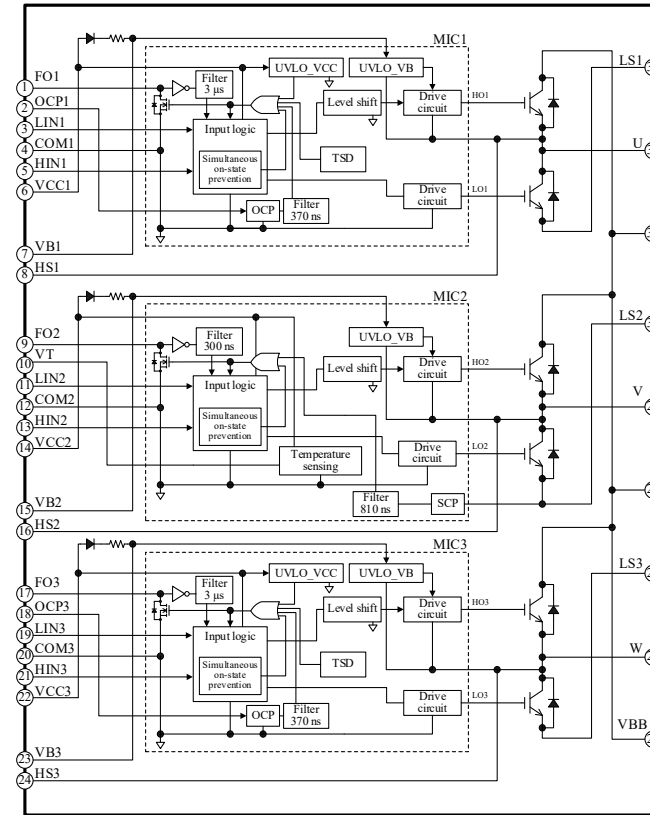
Package

DIP33



Size: 47 mm × 19 mm × 4.4 mm
LF No. 2551

Block Diagram



Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ 3-shunt Current Detection
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Temperature Sensing Function (V-phase)
- ◆ Protections:
 - Overcurrent Protection (OCP) (U- and W-phases)
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD): 150 °C (typ.) (U- and W-phases)
- ◆ Isolation Voltage: 2000 V for 1 min, UL-recognized Component

Selection Guide

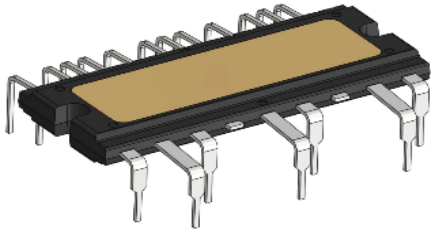
Part Number	Output Transistor	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SCM1272MA	IGBT + FRD	600	15 A	1.7 V

SCM12xxMF Series

3-shunt Detection Type

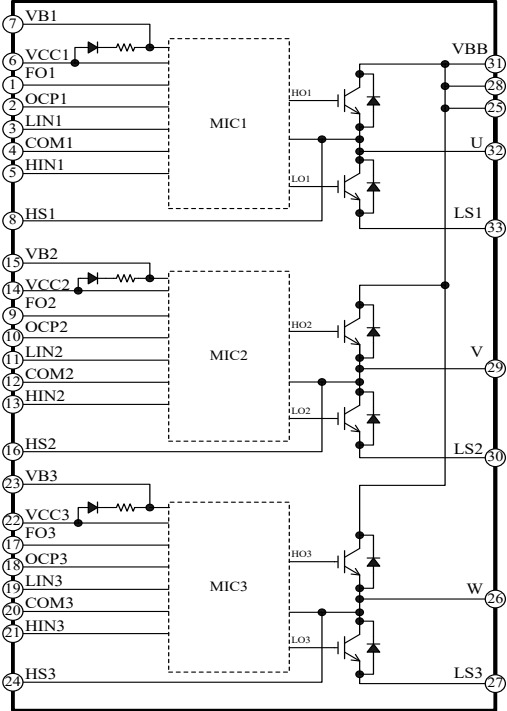
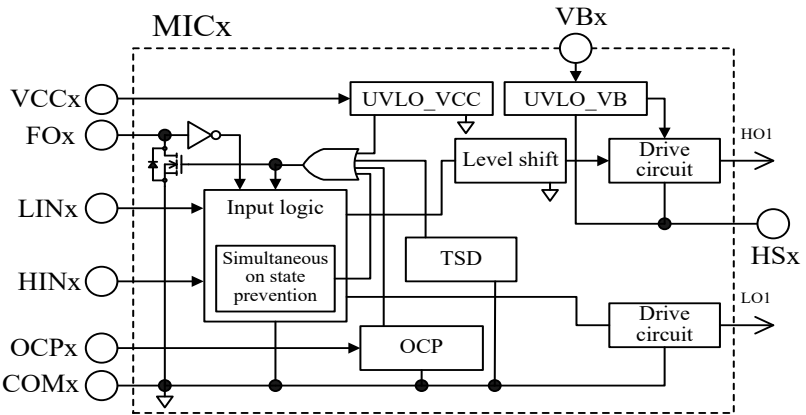
Package

DIP33



LF No. 2552
Size: 47 mm × 19 mm × 4.4 mm

Block Diagram



Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ 3-shunt Current Detection
- ◆ Protections:
 - Overcurrent Protection (OCP)
 - Simultaneous On-state Prevention
 - Undervoltage Lockout for Power Supply (UVLO)
 - Thermal Shutdown (TSD) : 150 °C (typ.)
- ◆ Isolation Voltage: 2500 V for 1 min, UL-recognized Component

Selection Guide

Part Number	V _{CES}	I _C	V _{CE(SAT)} typ.
SCM1261MF*	600 V	10 A	1.7 V
SCM1242MF		15 A	
SCM1263MF*		20 A	
SCM1256MF			
SCM1265MF*			

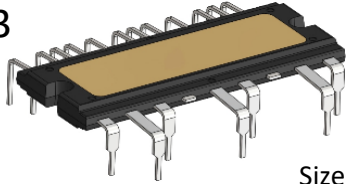
* Uses a shorter blanking time for OCP activation.

SCM1274MB

3-shunt Detection Type

Package

DIP33

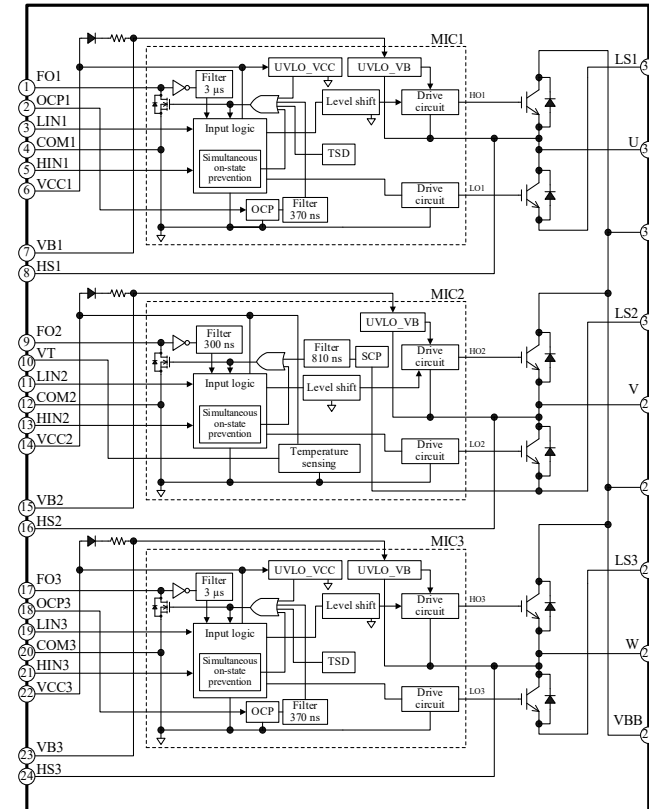


LF No. 2552 / 2557
Size: 47 mm × 19 mm × 4.4 mm

Features

- ◆ Temperature Sensing Function
- ◆ In Case of Abnormal Operation, All Outputs Shut Down via the FO1, FO2, and FO3 Pins Connected Together
- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors (22 Ω)
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Pb-free (RoHS Compliant)
- ◆ Isolation Voltage: 2500 V (for 1 min)
- ◆ Fault Signal Output at Protection Activation
- ◆ Protections:
 - Undervoltage Lockout for Power Supply
 - High-side (UVLO_VB): Auto-restart
 - Low-side (UVLO_VCC): Auto-restart
 - Overcurrent Protection (OCP): Auto-restart
 - Simultaneous On-state Prevention: Auto-restart
 - Short Circuit Protection (SCP): Auto-restart
 - Thermal Shutdown (TSD): Auto-restart

Block Diagram



Selection Guide

Part Number	Output Transistor	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SCM1274MB*	IGBT + FRD	600	20 A	1.7 V

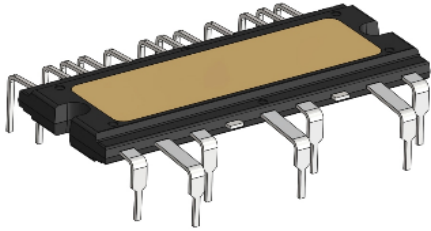
*Under development

SCM127xMF Series

3-shunt Detection Type

Package

DIP33

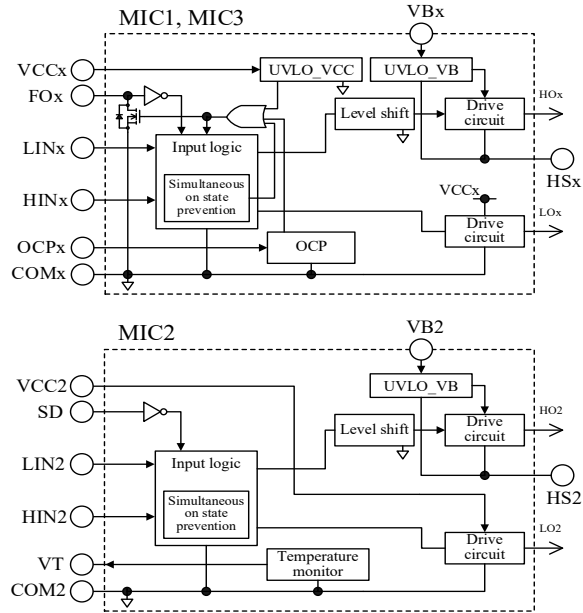


LF No. 2552
Size: 47 mm × 19 mm × 4.4 mm

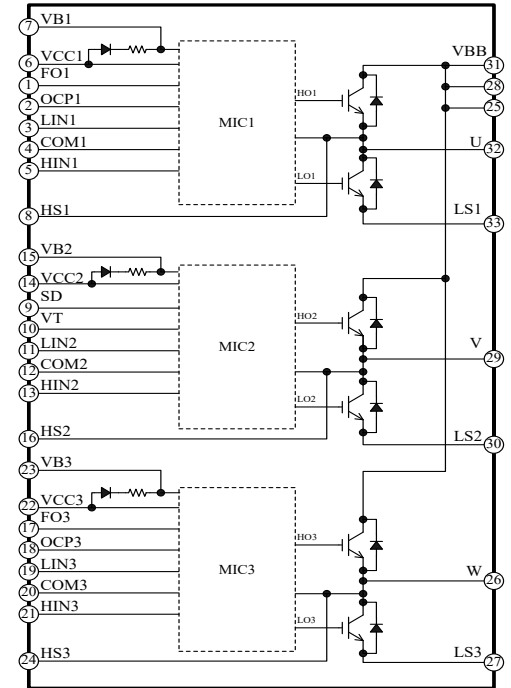
Features

- ◆ Temperature Sensing Voltage Output (Analog Voltage)
- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ 3-shunt Current Detection
- ◆ Protections:
 - Overcurrent Protection (OCP)
 - Simultaneous On-state Prevention
 - Undervoltage Lockout for Power Supply (UVLO)
- ◆ Isolation Voltage: 2500 V for 1 min, UL-recognized Component

Block Diagram



*Pins 21 and 28 are trimmed pins.



Selection Guide

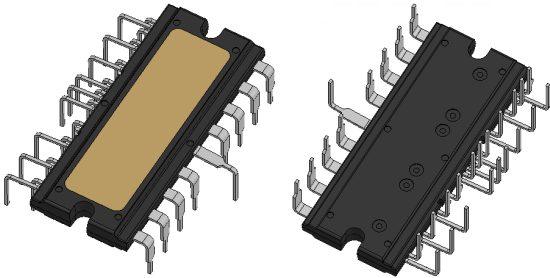
Part Number	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SCM1272MF	600 V	15 A	1.7 V
SCM1274MF		20 A	
SCM1276MF		30 A	

SCM200xMKF Series

3-shunt Detection Type

Package

DIP33

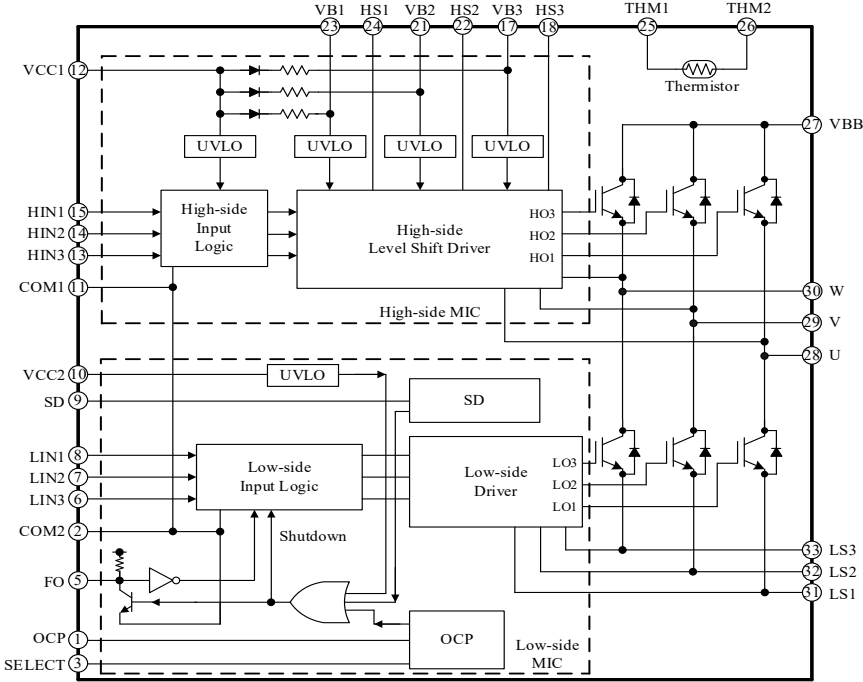


LF No. 2563
Size: 47 mm × 19 mm

Features

- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ 3-shunt Current Detection
- ◆ Protections:
 - Overcurrent Protection (OCP): Selectable OCP Hold Time (34 μ s or 8 ms)
 - Undervoltage Lockout for Power Supply (UVLO)
- ◆ Built-in NTC Thermistor

Block Diagram



Selection Guide

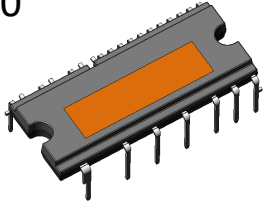
Part Number	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SCM2007MKF	600 V	20 A	1.7 V
SCM2007MKF	600 V	30 A	1.7 V

SIM2-202B

3-shunt Detection Type

Package

DIP40

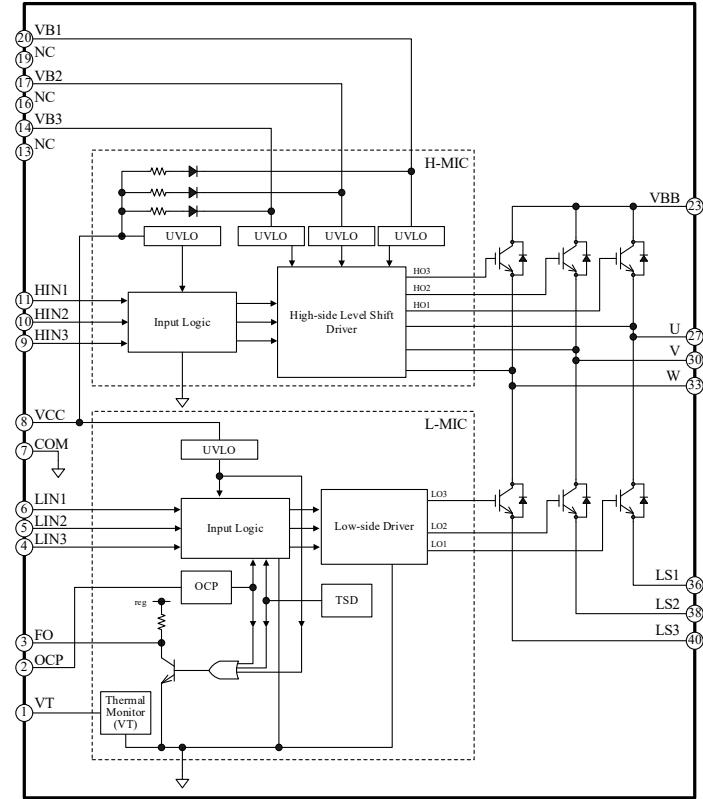


Size: 35.7 mm × 14.6 mm × 4.2 mm
LF No. 2982 / 2983

Features

- ◆ Pb-free (RoHS Compliant)
- ◆ Isolation Voltage: 2000 V (for 1 min)
- ◆ UL Recognition Pending (File No.: E118037)
- ◆ Temperature Sensing Function
- ◆ Built-in Bootstrap Diodes with Current Limiting Resistors (250 Ω)
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Fault Signal Output at Protection Activation
- ◆ Protections:
 - Undervoltage Lockout for Power Supply
 - High-side (UVLO_VB): Auto-restart
 - Low-side (UVLO_VCC): Auto-restart
 - Overcurrent Protection (OCP): Auto-restart
 - Thermal Shutdown (TSD): Auto-restart with an Operating Range of ±5 °C

Block Diagram



Selection Guide

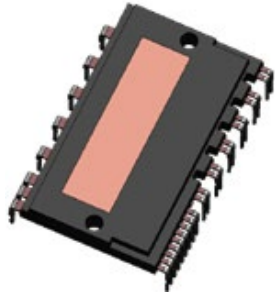
Part Number	Output Transistor	V _{CES}	I _C	V _{CE(SAT)} typ.
SIM2-202B	FS-IGBT + FRD	600 V	20 A	1.7 V

SAM265M50BS3

3-shunt Detection Type

Package

DIP30

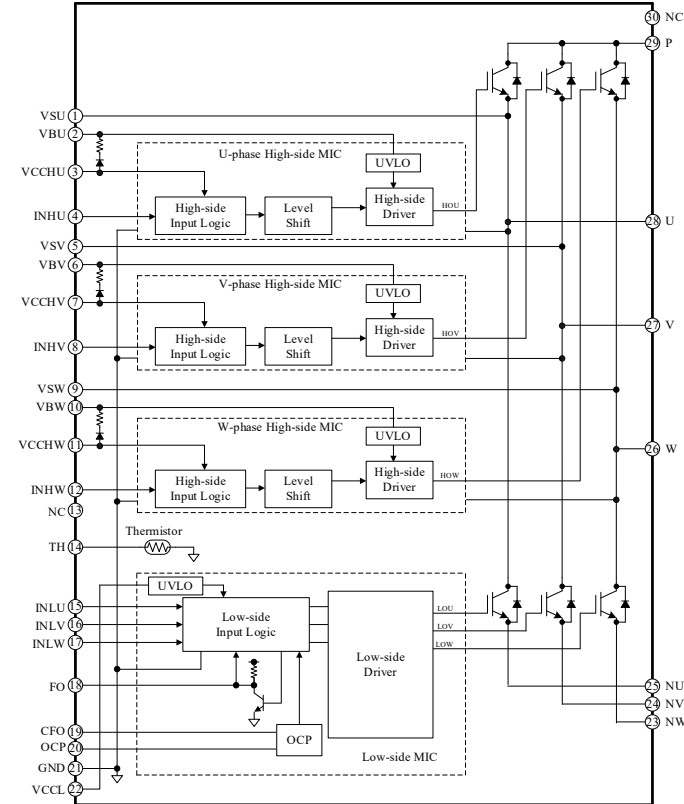


Size: 52.5 mm × 31 mm × 5.6 mm
LF No. 2541

Features

- ◆ Isolation Voltage: 2500 V (for 1 min) (UL-recognized Component)
- ◆ Built-in Thermistor
- ◆ Built-in Bootstrap Diodes
- ◆ CMOS-compatible Input (3.3 V or 5 V)
- ◆ Fault Signal Output at Protection Activation
- ◆ Shutdown Signal Input
- ◆ Adjustable OCP Hold Time
- ◆ Protections:
 - Undervoltage Lockout for Power Supply
 - VBx Pin (UVLO_VBx): Auto-restart
 - VCCL Pin (UVLO_VCCL): Auto-restart
 - Overcurrent Protection (OCP): Auto-restart

Block Diagram



Selection Guide

Part Number	Output Transistor	V_{CES}	I_C	$V_{CE(SAT)}$ typ.
SAM265M50BS3	IGBT + FRD	650 V	50 A	1.7 V

Our online calculation tools quickly tell you output transistor losses and estimated junction temperatures. Please visit our website to find out more.

Show
« < 1 > » (items 1 to 25 out of 25)
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Part Number ▾ ▲	Status [?] ▾ ▲	Product Type (Class) ▾ ▲	Calculation Too ▾ ▲
SAM265M50BS3	PREVIEW	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1242MA	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1242MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1256MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1261MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1263MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1265MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1272MA	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1272MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1274MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM1276MF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To
SCM2007MKF	ACTIVE	High Voltage 3-phase Brushless DC Motor Driver	Power Loss Calculation To

[Calculation Tools List Page](#)

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