

## Product Brief

# CIPOS™ Mini

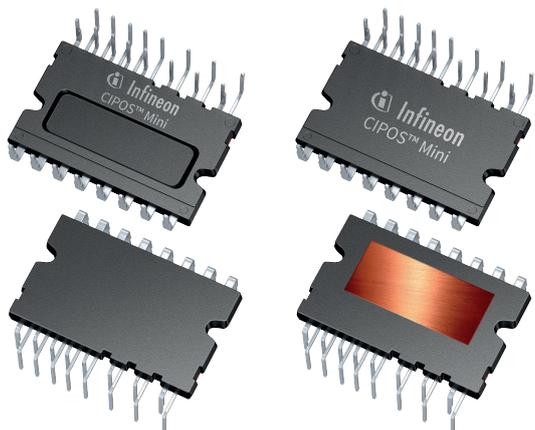
## Intelligent Power Modules (IPM) 600 V / 4–30 A

The energy-efficient LS Power Semitech CIPOS™ module integrates various power and control components to increase reliability, and to optimize PCB size and system costs. This simplifies the power design and reduces significantly the time to market. This CIPOS™ module is designed to control AC motors in variable speed drives for applications from 4 A to up 30 A such as air conditioning, washing machines, refrigerators, vacuum cleaners, compressors and industrial drives up to 3 kW.

The package concept is specially adapted to power applications that need good thermal conduction and electrical isolation, but also EMI-safe control, innovative FAULT indication and overload protection. The feature of Infineon reverse conducting IGBTs or TRENCHSTOP™ IGBT is used with a new optimized Infineon SOI gate driver for excellent electrical performance.

### Applications

- > Compressors/air conditioning
- > Washing machines
- > Refrigerators
- > Fans/blowers
- > Pumps
- > General purpose drives
- > Drives for textile machines
- > PFC (Power Factor Correction)
- > Vacuum cleaner



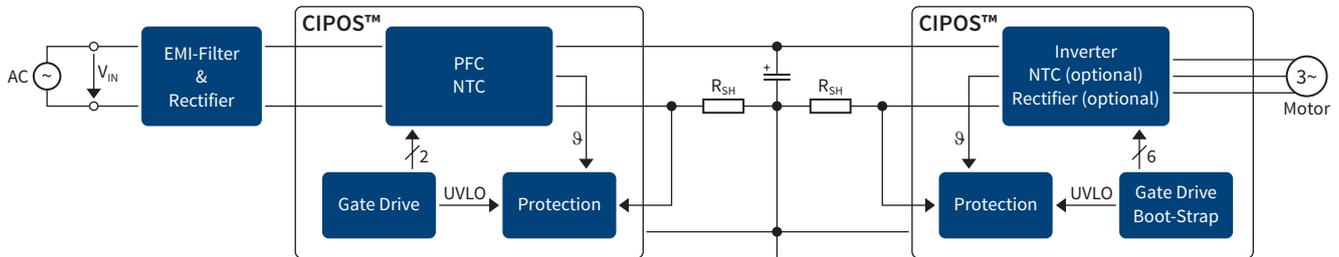
### Key features

- > Application-specific performance
- > Very low thermal resistance due to DCB
- > Concerted power system from one source
- > Fully isolated dual in-line molded module
- > Reverse conducting IGBTs with low  $V_{CEsat}$  and optimal anti-parallel diode for low EMI
- > TRENCHSTOP™ IGBTs with low  $V_{CEsat}$
- > Rugged 3-phase SOI gate driver technology with stability against transient and negative voltage
- > Single phase diode bridge rectifier (optional)
- > Matched propagation delay for all channels
- > Fast switching capability:  $f_{sw} \leq 20$  kHz
- > Fully compliant to 3.3 V and 5 V microcontrollers
- > Temperature sense (optional)
- > Accessible FAULT pin
- > Undervoltage lockout at all channels
- > Cross-conduction prevention
- > Low-side emitter pins accessible for all phase current monitoring (open emitter)
- > Lead-free terminal plating, RoHS compliant
- > Qualified according to JEDEC

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## Intelligent Power Modules (IPM) 600 V / 4–30 A

### Block diagram



Product	Package	Voltage [V]	Nominal current @ 25 °C [A]	Power up to [kW]	T <sub>jmax</sub> [°C]	Built in thermistor	Built in rectifier diode
<b>3-phase inverter, open emitter, targeting for air conditioner and general application</b>							
IGCM04F60xA	Mini standard	600	4	0.5	150	optional <sup>1)</sup>	–
IGCM06F60xA	Mini standard	600	6	0.8	150	optional	–
IGCM10F60xA	Mini standard	600	10	1.2	150	optional	–
IGCM15F60xA	Mini standard	600	15	2.0	150	optional	–
IGCM20F60xA	Mini standard	600	20	2.5	150	optional	–
IKCM10L60xA	Mini standard	600	10	1.2	150	optional	–
IKCM15L60xA	Mini standard	600	15	2.0	150	optional	–
IKCM20L60xA	Mini standard	600	20	2.5	150	optional	–
IKCM30F60xA	Mini standard	600	30	3.0	150	optional	–
IKCM20L60xD	Mini DCB	600	20	2.5	150	optional	–
IKCM30F60xD	Mini DCB	600	30	3.0	150	optional	–
<b>3-phase inverter, open emitter, targeting for washing machine application</b>							
IKCM10H60xA	Mini standard	600	10	1.2	150	optional	–
IKCM15H60xA	Mini standard	600	15	2.0	150	optional	–
<b>3-phase inverter, closed emitter, built in rectifier bridge</b>							
IGCM04B60xA	Mini standard	600	4	0.5	150	optional	✓
IGCM06B60xA	Mini standard	600	6	0.8	150	optional	✓
IKCM10B60xA	Mini standard	600	10	1.2	150	optional	✓
<b>2-phase inverter for SRM (Switched Reluctance Motor) drives</b>							
IKCM15R60GD	Mini DCB	600	15	TBD	150	✓	–
IKCM20R60GD	Mini DCB	600	20	TBD	150	✓	–
<b>2-phase or 3-phase interleaved topology for PFC (Power Factor Correction)</b>							
IFCM20T65GD <sup>2)</sup>	Mini DCB	650	20	TBD	150	✓	–
IFCM30T65GD <sup>2)</sup>	Mini DCB	650	30	TBD	150	✓	–
IFCM20U65GD <sup>2)</sup>	Mini DCB	650	20	TBD	150	✓	–
IFCM30U65GD <sup>2)</sup>	Mini DCB	650	30	TBD	150	✓	–

1) x = G (built in thermistor), x = H (no thermistor)

2) Under development

Published by  
Infineon Technologies AG  
85759 Neuburg, Germany

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