

Product Brief

# CIPOS™ Mini

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

The energy-efficient CIPOS<sup>™</sup> Mini IPM integrates various power and control components to increase reliability, and to optimize PCB size and system cost. This simplifies the power design and significantly reduces the time to market. The CIPOS<sup>™</sup> Mini IPM 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<sup>™</sup> IGBT is used with a new optimized Infineon SOI gate driver for excellent electrical performance.

## Applications



### 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<sub>CE(sat)</sub> and optimal antiparallel diode for better EMI performance
- > TRENCHSTOP™ IGBTs with low V<sub>CE(sat)</sub>
- Rugged 3-phase SOI gate driver technology with stability against transient and negative voltage
- Matched propagation delay for all channels
- Fast switching capability: f<sub>SW</sub> ≤ 20 kHz
- > Fully compliant to 3.3 V and 5 V microcontrollers
- > Temperature sense (optional)
- Accessible FAULT pin
- > Under voltage lockout at all channels
- > Cross-conduction prevention
- Low-side emitter pins accessible for all phase current monitoring (open emitter)
- > Lead-free terminal plating, RoHS

## CIPOS<sup>™</sup> Mini

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**Block Diagram** 



Product	Package	Voltage [V]	Nominal current @ 25 °C [A]	Power up to [kW]	T <sub>jmax</sub> [°C]	Built in thermistor	Remark
3-phase inverter, open emitter, targeting for air conditioner and general application							
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	
3-phase inverter, open emitter, targeting for washing machine application							
IKCM10H60xA	Mini standard	600	10	1.2	150	optional	
IKCM15H60xA	Mini standard	600	15	2.0	150	optional	
2-phase switched reluctance drives for vacuum cleaner application							
IKCM15R60GD	Mini DCB	600	15	TBD	150	✓	
IKCM20R60GD	Mini DCB	600	20	TBD	150	✓	
2-phase or 3-phase interleaved topology for PFC (Power Factor Correction)							
IFCM20T65GD	Mini DCB	650	20	TBD	150	✓	2-phase
IFCM30T65GD	Mini DCB	650	30	TBD	150	1	2-phase
IFCM20U65GD	Mini DCB	650	20	TBD	150	~	3-phase
IFCM30U65GD	Mini DCB	650	30	TBD	150	✓	3-phase
PFC (Power Factor Correction) and 3-phase inverter, with 20 kHz or 40 kHz PFC switching							
IFCM10P60GD	Mini DCB	600	10	TBD	150	~	40 kHz
IFCM15P60GD	Mini DCB	600	15	TBD	150	✓	40 kHz
IFCM10S60GD	Mini DCB	600	10	TBD	150	✓	20 kHz
IFCM15S60GD	Mini DCB	600	15	TBD	150	$\checkmark$	20 kHz

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

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