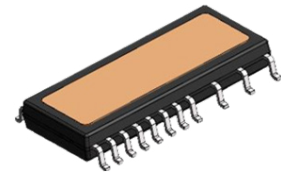


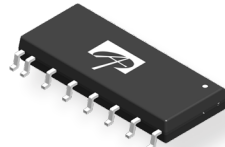
# IPMs

## Intelligent Power Modules for Motor Drives

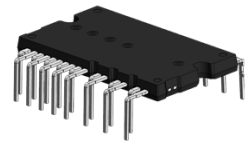
- Further Compact Inverter Design
- Higher Reliability and Integration
- Higher Efficiency
- Easy Controllability



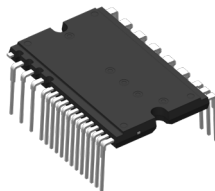
Mega IPM-7DT  
17.9 x 7.5 x 2.5mm



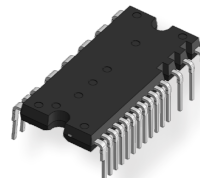
IPM7  
18 x 7.5 x 2.5mm



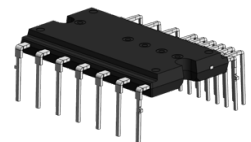
IPM41  
38 x 24mm



IPM3  
38 x 24mm



IPM5  
33.4 x 3.6 x 15mm



IPM42  
38 x 24mm



IPMs

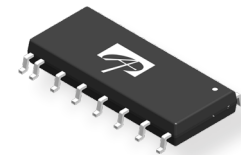


## General Description

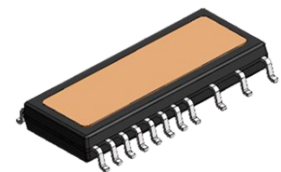
- Transfer-molded 3-phase IGBT inverter with gate driver and protection IC
- Application optimized performance
  - Low cost while keeping its reliability and performance high
  - IGBT:  $T_{JMAX} = 175^{\circ}\text{C}$  as a discrete,  $150^{\circ}\text{C}$  as a module
  - Built-in thermal protection function

## IPM7 Line-up

Part Number	Rated Voltage (V)	$R_{DS(ON)} @ 25^{\circ}\text{C}$ (Max) ( $\Omega$ )	Package
AIM702H50B	500	4	IPM7
AIM704H50B	500	2.4	IPM7
AIM705M25V1	250	1.5	IPM7
AIM71AR60V1	600	2V @ 1A	IPM7
AIM7E1AR60V1	600	2V @ 1A	Mega IPM - 7E
AIM7DT1AR60V3	600	2V @ 1A	Mega IPM - 7DT
AIM7DT3AR60V3	600	1.6V @ 2A	Mega IPM - 7DT



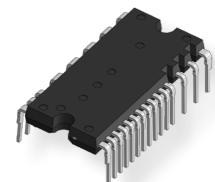
IPM7  
18 x 7.5 x 2.5mm



Mega IPM-7DT  
17.9 x 7.5 x 2.5mm

## IPM5 Line-up

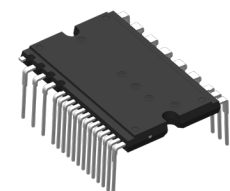
Part Number	Package	Description	Voltage (V)	Current (A)
AIP5D05E060Q4(S)	IPM-5	Low EMI	600	5
AIP5D05K060Q4(S)	IPM-5	Standard	600	5
AIP5D10K060Q4(S)	IPM-5	Standard	600	10
AIP5D15K060Q4(S)	IPM-5	Standard	600	15
AIP5N15K060Q4(S)	IPM-5	With NTC	600	15
AIP5N05E060Q4(S)	IPM-5	Low EMI with NTC	600	5
AIP5N10K060Q4(S/U)	IPM-5	With NTC	600	10



IPM5 / IPM5A  
33.4 x 3.6 x 15mm

## IPM3 Line-up



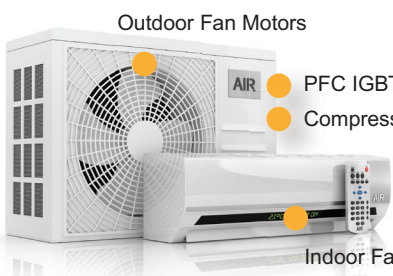
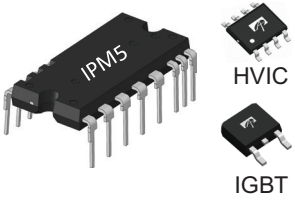
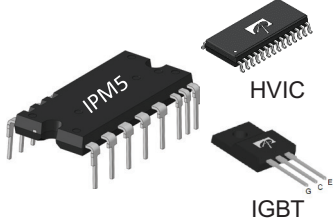
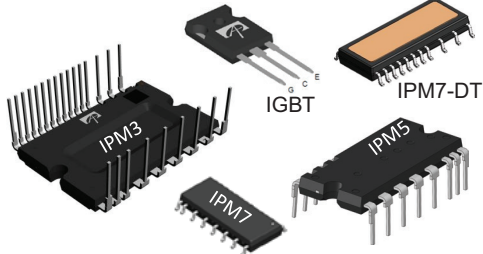
Part Number	Package	Description	Voltage (V)	Current (A)
AIP3D05A060Q4	IPM-3	Standard	600	5
AIP3D10A060Q4	IPM-3	Standard	600	5
AIP3D15A060Q4	IPM-3	Standard	600	10
AIP3N15A060Q4	IPM-3	With NTC	600	15
AIP3D15L060Q4	IPM-3	Low EMI	600	15
AIP3P15A060Q4	IPM-3	W/PFC diode	600	15
AIP3D20A060Q4	IPM-3	Standard	600	20
AIP3D30A060Q4	IPM-3	Standard	600	30



IPM3  
38 x 24mm

## Applications

- Refrigerators
- Washing machines
- Fan motors
- General motor drives

Total Home Appliance Solutions		
Refrigerators	Washing Machines	Air Conditioners
 <p>Compressor Motors</p>	 <p>Washing &amp; Drying Motors</p>	 <p>Outdoor Fan Motors</p> <p>PFC IGBT</p> <p>Compressor Motors</p> <p>Indoor Fan Motors</p>
<p>Compressor Motor Drive</p> <ul style="list-style-type: none"> <li>- IPM5</li> <li>- IGBT + HVIC</li> </ul>	<p>Motor Drive</p> <ul style="list-style-type: none"> <li>- IPM5</li> <li>- IGBT + HVIC</li> </ul>	<p>Power Factor Correction: IGBT</p> <p>Compressor Motor Drive: IPM3</p> <p>Outdoor Fan Motor Drive: IPM5</p> <p>Indoor Fan Motor Drive: IPM7</p>
 <p>IPM5</p> <p>HVIC</p> <p>IGBT</p>	 <p>IPM5</p> <p>HVIC</p> <p>IGBT</p>	 <p>IPM3</p> <p>IPM7</p> <p>IPM5</p> <p>IGBT</p> <p>IPM7-DT</p>

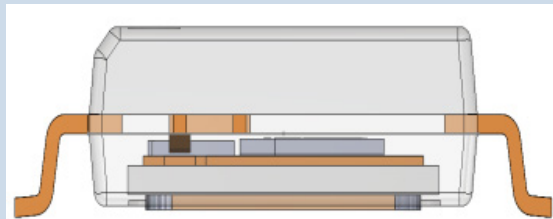
## IPMs Key Features

- Trench Shielded Planar Gate IGBT
- 3-phase Inverter module including HVIC drivers
- Built-in bootstrap diodes with integrated current limiting resistor
- Control supply under-voltage lockout protection (UVLO)
- Over-temperature (OT) protection
- Temperature monitoring (VOT or NTC)
- Short-circuit current protection (CSC)
- Fault out signal (VFO) corresponding to SC, UV and OT fault
- Optional fault-out duration time
- Wide input interface (3-18V), Schmitt trigger receiver circuit (Active High)
- Isolation ratings of 2000Vrms/min

## MEGA IPM7

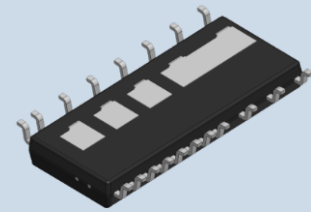
### Technology Advance

- BIC RC-IGBT
- PKG Innovation
- BSD-Integrated HVIC

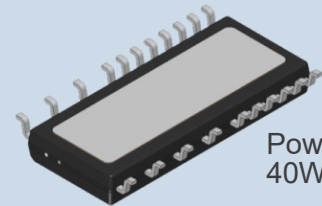


IGBT-Embedded SMD

IPM7 Mega-E  
Exposed Cu

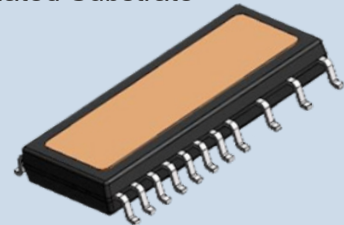


IPM7 Mega-D  
Isolated Substrate



Power-up:  
40W→80W

IPM7 Mega-DT  
Isolated Substrate



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