

Insulated Metal Substrate CCI IMS-11H



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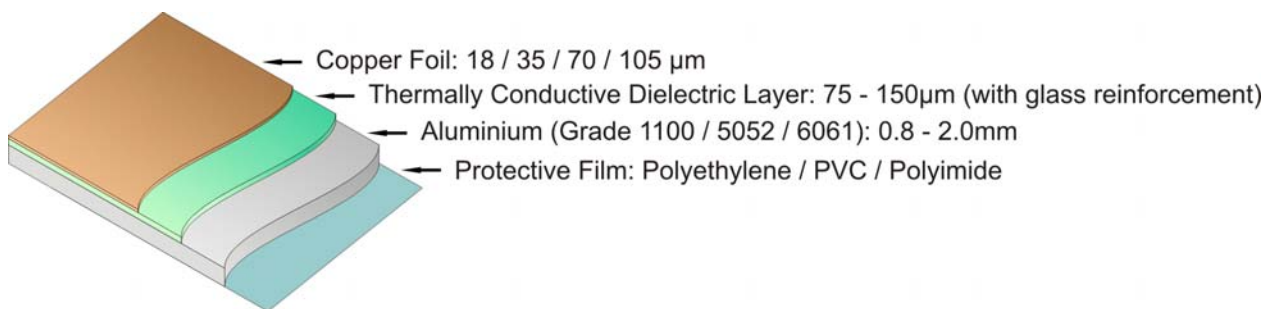
GENERAL

Insulated Metal Substrates are a solution to the problem of heat dissipation created by many modern printed circuit designs. IMS materials offer an effective alternative to other solutions such as heat sinks and ceramic substrates which are often linked to interconnection difficulties.

Aluminium base copper clad laminates, the most common form of IMS, are already used widely in LED lighting circuits, but there are many other applications in fields such as power supplies, voltage regulators, hybrid power ICs, amplifiers, ignition controls and relays, in industries as diverse as automotive, medical equipment, communications and audio.

The key product characteristics are heat dissipation, electromagnetic shielding, mechanical strength and ease of processing.

STANDARD CONSTRUCTION



IMS-11H

CCI IMS-11H is an excellent general purpose IMS offering a good balance of low cost and all-round performance. It incorporates a proprietary alumina-filled resin system for good thermal conductivity, supported by glass fabric for cost reduction. It is available with a choice of two aluminium grades for backing; 1060 provides the lowest cost while 5052 provides a better solution where the tooling requirements are more demanding.

- IMS-11H is available with 18 μm , 35 μm , 70 μm and 106 μm copper claddings.
- The standard dielectric thickness is 75 μm , but 125 μm and 150 μm are available to special order.
- The aluminium backing is available in 1.0mm, 1.2mm, 1.5mm and 2.0mm thicknesses.
- The standard panel size is 600mm x 500mm but other sizes and large sheets can be made available to special order.

Typical properties are shown overleaf.

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IMS-11H TYPICAL PROPERTIES



Property	Test Condition	Unit	Specification	Typical IMS-11H
Thermal Impedance	Internal TO-220	°C/W	≤ 1.0	0.90
Thermal Conductivity	ASTM 5470-D	W/m.K	1.0 – 2.0	1.1
Peel Strength	IPC-TM-650 2.4.8	N/mm	≥ 1.4	1.73
Thermal Stress	288°C	S	≥ 20	120
	IPC-TM-650 2.4.13.1			
Surface Resistivity	C96/35/90	MΩ	≥ 10 ⁴	10 ⁶
	IPC-TM-650 2.5.17.1		≥ 10 ³	10 ⁵
Volume Resistivity	C96/35/90	MΩ.cm	≥ 10 ⁶	10 ⁷
	IPC-TM-650 2.5.17.1		≥ 10 ³	10 ⁵
Electrical Strength	A	KV/mm	≥ 30	45
	IPC-TM-650 2.5.6.2			
Arc Resistance	D48/50 + D0.5/23	S	≥ 60	120
	IPC-TM-650 2.5.1			
Flammability	UL 94	-	V-0	V-0
Tg	DSC	°C	130 ± 5	135
	IPC-TM-650 2.4.25			
Water Absorption	D-24/23	%	≤ 0.5	0.18
	IPC-TM-650 2.6.2.1			
CTI	A	-	≥ 175	200
	IEC60112			

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