

Datasheet

Advance Metal Substrate (AMS)

Advanced Metal Substrate (AMS) belongs to a class of a metal core printed circuit board (MCPCB), of which surface finish is suitable for high volume surface mount technology with various circuit designs. The patented AMS substrate technology allows selective insulation layer via micro fabrication process, different from nominal laminate process used in MCPCB. This feature enables to offer improved reliability and greater thermal performance in high power LED chip on board (COB) package or LED heat sink integration. With separate thermal path from electrical conduction, AMS can offer the thermal conductivity more than 200W/mK of which close to the value of bulk Aluminum.

Advanced Metal Substrate (selective Dielectric, Direct Copper on Aluminum)		
	Option A	Option B
Electrically Isolated Thermal Pad	Yes	No
AMS Application	No Dielectric at Thermal Pad	Dielectric at Thermal Pad
Thermal Path Topology	Cu-Aluminum	Cu- Dielectric-Aluminum
Thermal Path Thermal Resistance	Rth copper + Rth Al	Rth copper + Rth dielectric + Rth Al
Side View Drawing without Solder Mask		
Thermal Conductivity (W/m-K)	230	Up to 8
Dielectric Thickness (um)	35, 70, 105	35, 70, 105
Dielectric Breakdown (V)	>2100	>2100
Copper Thickness (um)	35, 70, 105	35, 70, 105
Copper Finish	OSP, Flash Gold	OSP, Flash Gold
Solder Mask	White, Black	White, Black
Overall Substrate Thickness (mm)	1.6	1.6
Thermal Interface Material	Solder, Epoxy, Grease	Solder, Epoxy, Grease
Solder Resistance (300C, <120sec)	3X Reflow	3X Reflow
UL Flammability	94V0	94V0
AMS system	No adhesive	No adhesive

AMS Options for various LED type

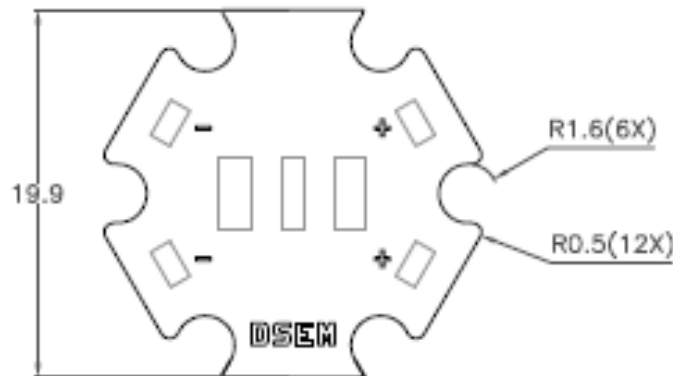
AMS Option A -: Thermal pad is electrically isolated			
N supplier	L Supplier	C supplier	SS supplier

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AMS Option B -: Thermal pad is not electrically isolated			
L supplier	SS supplier	SS supplier	O supplier

Sample Unit Layout

Product name : N 183



UNIT DETAIL LAYOUT
SCALE 10:1 (DETAIL A)

Ordering Information

Standard Products (Star Shape)

Matrix : Standard 36-up, x =150.6mm, y =152.4mm, 30° v-cut for manual singulation

Circuit : Per LED Manufacturer drawing

Option A: Direct Copper-on-Aluminum at thermal pad

Option B: Copper-on AMS dielectric-on-Aluminum at thermal pad

Solder Mask : Black or White Matte, Legend: White/Black; Logo: Optional

Copper Thickness : Standard (1 oz, 35um)

AMS thickness : Standard (70um, 2kV)

Copper Finish : OSP or Flash Gold

Packing : Vacuum pack

Other Options : Kindly contact Sales at customer-service@dsem.com