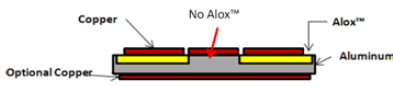
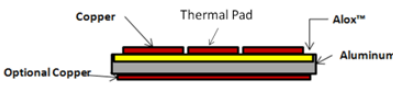


# Datasheet

## Alox™ Metal Substrate (AMS)

AMS is a metal core printed circuit board that can be fabricated in any shape. It has a circuit layer, a dielectric layer and the bulk metal body to help spread and dissipate heat. The design goal is to transfer heat away from device junction; thus, the substrate should have the minimum stack up layers including the thermal interface material, good thermal conductivity material and surface finish suitable for high volume surface mount technology manufacturing. The patented selective ALOX™ technology allows selective insulation and direct copper-on-aluminum design flexibility; thus, lowest thermal resistance in the thermal path. For electrically insulated thermal pad devices, the thermal pad has close to bulk aluminum thermal conductivity.

Alox™ Metal Substrate (Selective Dielectric, Direct Copper on Aluminum)		
Electrically Isolated Thermal Pad	Yes	No
AMS Option	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		
Dielectric Thermal Conductivity (W/m-K)	8	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, HASL, Flash Gold	OSP, HASL, 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 (300°C, <120 sec)	3X Reflow	3X Reflow
UL Flamability	94V0	94V0
AMS System	No Adhesive	No Adhesive

## 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 ALOX™ dielectric-on-Aluminum at thermal pad**

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

**Copper Thickness: Standard (1 oz, 35um)**

**Alox™ thickness: Standard (70um, 2kV)**

**Copper Finish: OSP, HASL or Flash Gold**

**Packing: Vacuum pack**

**Other Options: Kindly contact Sales at [www.fujipolydsem.com](http://www.fujipolydsem.com) or [www.dsem.com](http://www.dsem.com)**

**AMS Options for various LED type**

AMS Option A: Direct Copper-on-Aluminum at Thermal Pads						
Led Manufacturer	Nichia	Nichia	Lumileds	Cree	Seoul Semi	Seoul Semi
LED Thermal Pad is electrically isolated from the electrical pads						

AMS Option B: ALOX™ dielectric at thermal and electrical pads					
Led Manufacturer	Lumileds	Lumileds	Seoul Semi	Seoul Semi	Osram
LED Thermal Pad is Not electrically isolated from electrical pads					

**Proposed 36-up STAR Matrix (Example)**

