



2018 Power & Light Semiconductor Co.,Ltd. Submount Specifications

- Si - Submount
- AlN - Submount
- Custom Solutions

P&L SEMI
Power and Lighting Semiconductor

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Submount List

Product No.	Die Size	Solder Size	Die Thickness	remark
	W x L [um]	W x L [um]	[um]	
Si Submount				
PSS-1051050-04	495 × 485	300 × 455	225	Insulated Type
PSS-1069069	650 × 650	650 × 650	350	Insulated Type
PSS-1154184	1520 × 1820	650 × 1800	220	Insulated Type
PSS-2034029-Pt	320 × 270	300 × 250	220	Conductive Type
PSS-2054064-Pt	520 × 620	500 × 600	220	Conductive Type
PSS-2074039	720 × 370	500 × 330	220	Conductive Type
PSS-2074039N	720 × 370	480 × 310	220	Conductive Type
PSS-2074039R	720 × 370	700 × 350	220	Conductive Type
PSS-2070070	680 × 680	660 × 660	220	Conductive Type
PSS-2071071S	690 × 690	270 × 670	220	Conductive Type
PSS-2071071D	690 × 690	270 × 670	220	Conductive Type
PSS-2084104	820 × 1020	300 × 1000	220	Conductive Type
AlN Submount				
PSA-1069044	600 × 350	350 × 330	230	Insulated Type
PSA-1077042	700 × 350	350 × 350	230	Insulated Type
PSA-1079044	700 × 350	480 × 310	220	Insulated Type
PSA-1089069	800 × 600	580 × 560	350	Insulated Type
PSA-1089109	800 × 1000	550 × 970	400	Insulated Type
PSA-1094064	920 × 620	500 × 580	220	Insulated Type
PSA-1097067	900 × 600	500 × 560	220 / 400	Insulated Type
PSA-1090097	825 × 900	425 × 850	230	Insulated Type
PSA-1229239	2200 × 2300	1000 × 2290	400	Insulated Type
PSA-1409409	4000 × 4000	1000 × 3390	400	Insulated Type



Si Submount Specifications

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Description

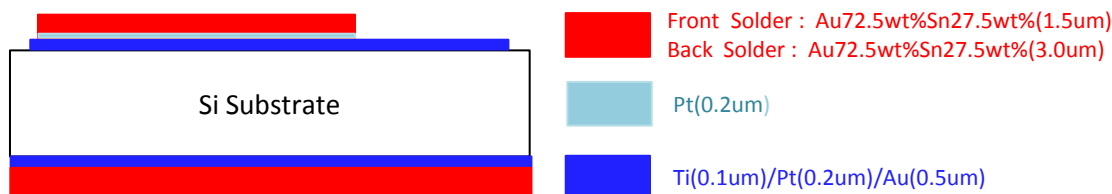
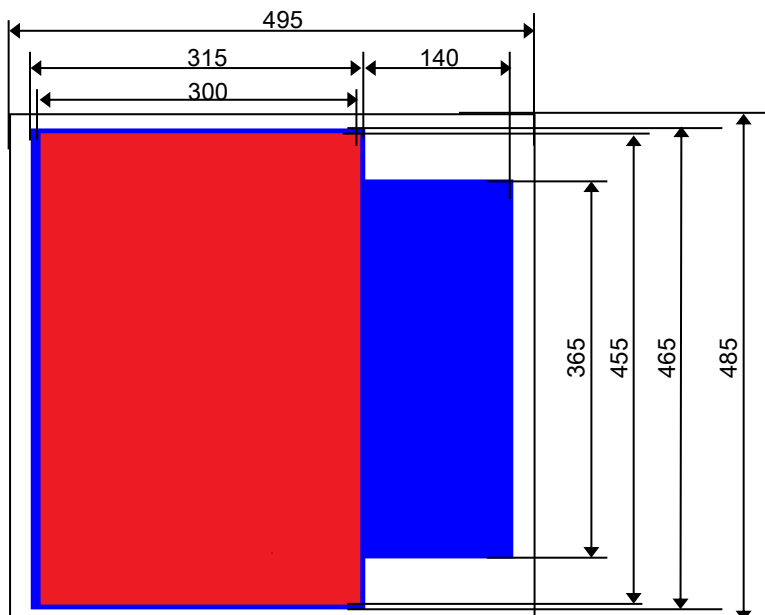
PSS-1051050-04 is silicon insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 495um±20um X 485um±20um
- **Solder Size** : 300um±10um X 455um±10um
- **Chip Thickness** : 225um ± 20um
- **Material : Silicon**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : Pt(2,000Å)/AuSn(1.5um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(3.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Resistance : 2MΩ ↑ @ V=±2V**



Description

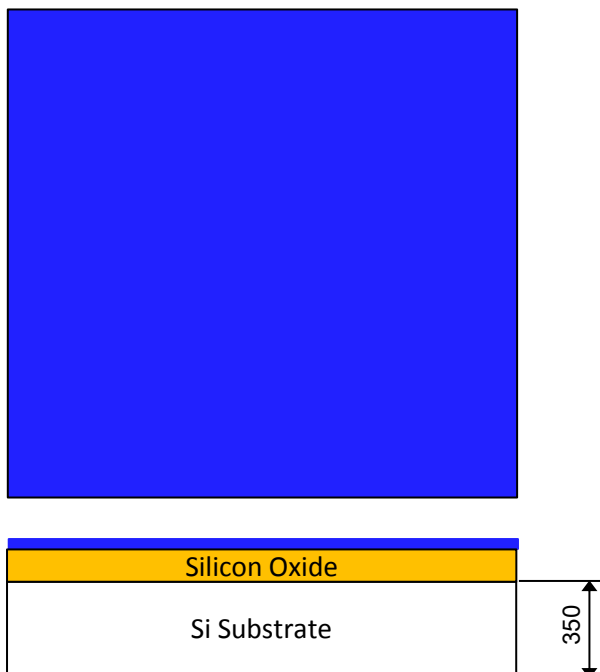
PSS-1069069 is silicon insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 650um±20um X 650um±20um
- **Metal Size** : 650um±10um X 650um±10um
- **Chip Thickness** : 220um±20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - * Tolerance of metal thickness : ±20%
- **Resistance** : 2MΩ ↑ @ V=±2V



 Ti(0.1um)/Pt(0.2um)/Au(0.5um)

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Description

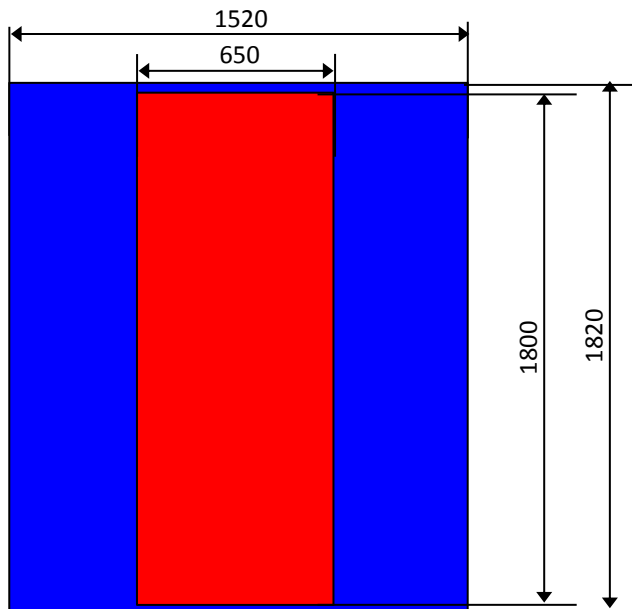
PSS-1154184 is silicon insulative type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 1520um±20um X 1820um±20um
- **Solder Size** : 650um±10um X 1800um±10um
- **Chip Thickness** : 220um ± 20um
- **Material : Silicon**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Resistance : 2MΩ ↑ @ V=±2V**



- Silicon Oxide
- Front Solder : Au72.5wt%Sn27.5wt%(3.0um)
Back Solder : Au72.5wt%Sn27.5wt%(4.0um)
- Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

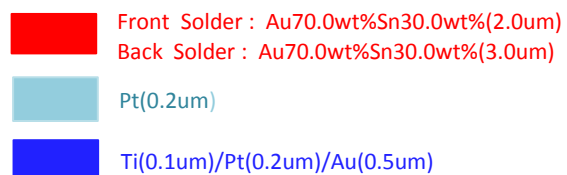
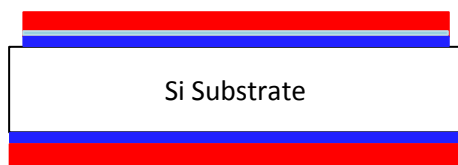
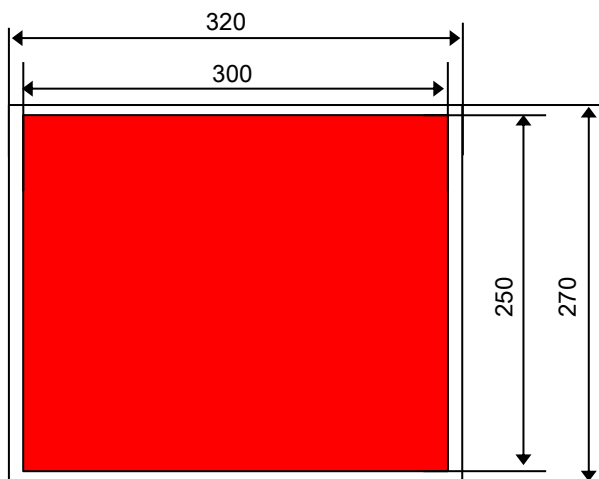
PSS-2034029-Pt is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 320um±20um X 270um±20um
- **Solder Size** : 300um±10um X 250um±10um
- **Chip Thickness** : 220um ± 20um
- **Material : Silicon**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : Pt(0.25um)/AuSn(2um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(3um)
 - Solder composition : Au(70±3.0wt%) : Sn(30±3.0wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



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Description

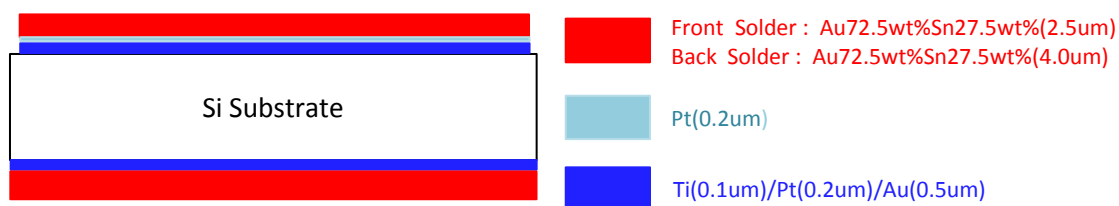
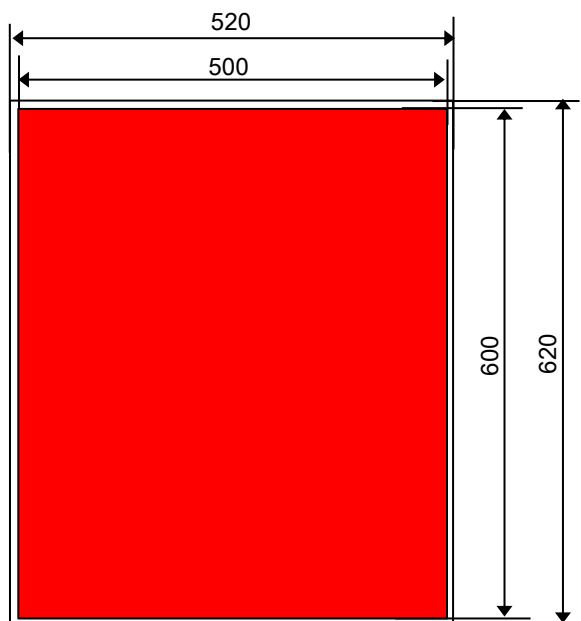
PSS-2054064-Pt is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 520um±20um X 620um±20um
- **Solder Size** : 500um±10um X 600um±10um
- **Chip Thickness** : 220um ± 20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : Pt/AuSn(2,000Å/2.5um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Description

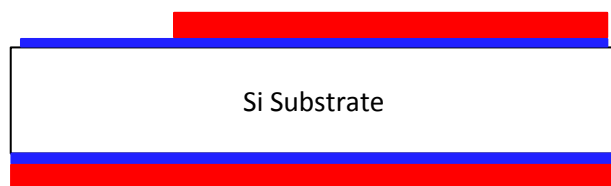
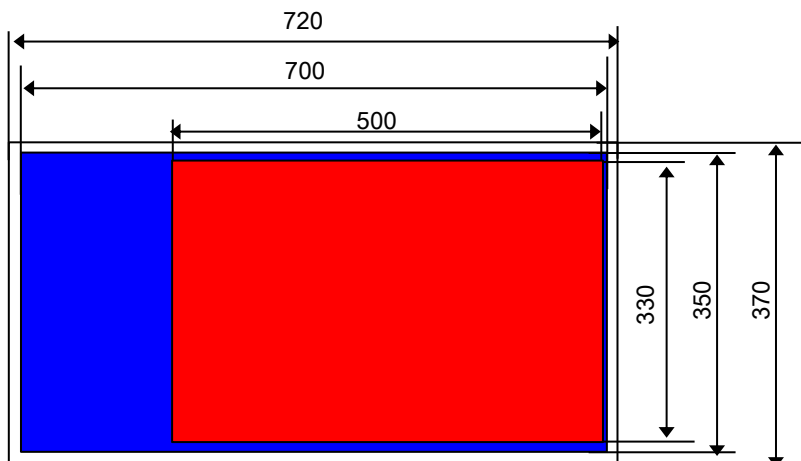
PSS-2074039 is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 720um±20um X 370um±20um
- **Solder Size** : 500um±10um X 330um±10um
- **Chip Thickness** : 220um±20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Front Solder : Au72.5wt%Sn27.5wt%(3.0um)
 Back Solder : Au72.5wt%Sn27.5wt%(4.0um)

Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

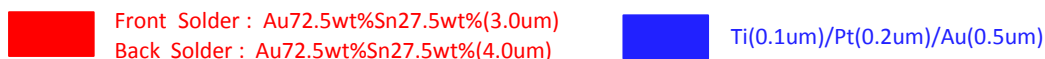
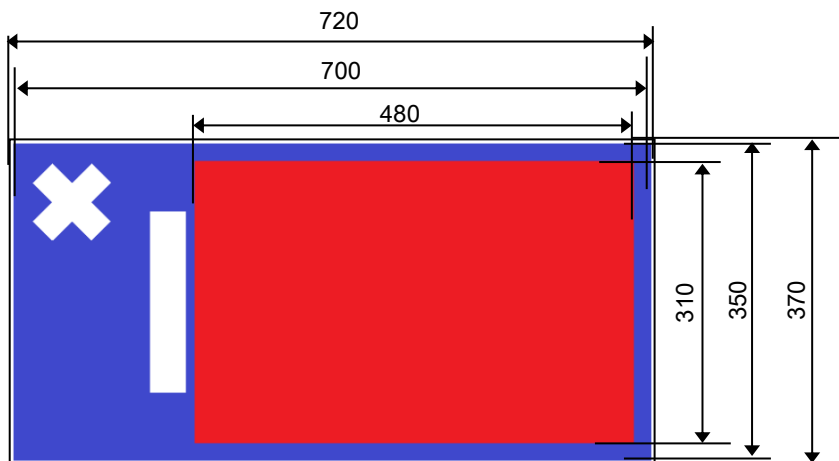
PSS-2074039N is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 720um±20um X 370um±20um
- **Solder Size** : 480um±10um X 310um±10um
- **Chip Thickness** : 220um±20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Description

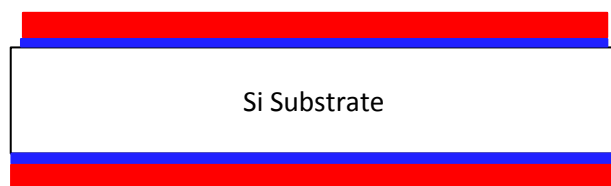
PSS-2074039R is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 720um±20um X 370um±20um
- **Solder Size** : 700um±10um X 350um±10um
- **Chip Thickness** : 220um±20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Front Solder : Au72.5wt%Sn27.5wt%(3.0um)
 Back Solder : Au72.5wt%Sn27.5wt%(4.0um)

Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

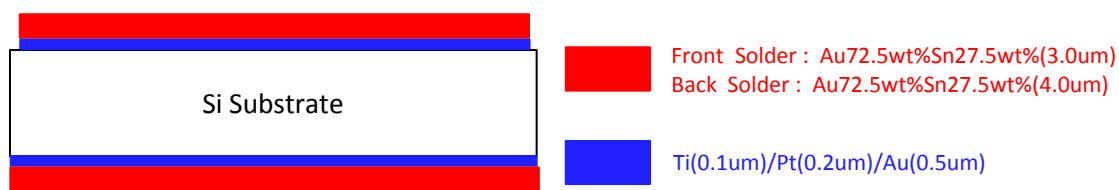
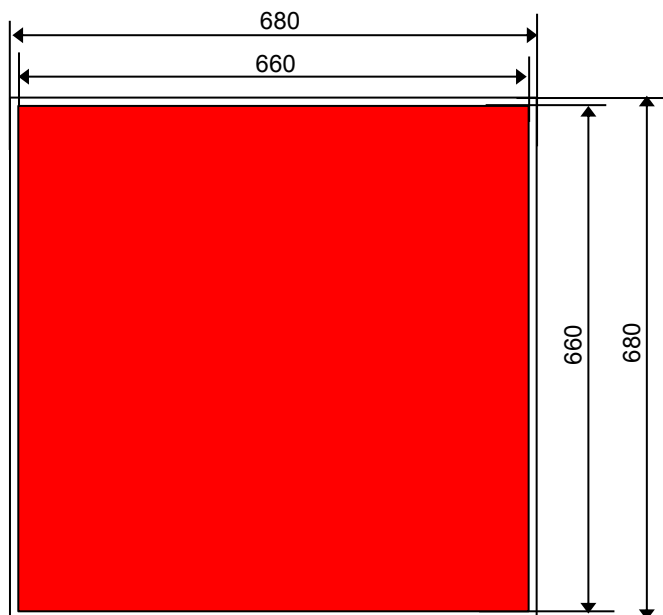
PSS-2070070 is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 680um±20um X 680um±20um
- **Solder Size** : 660um±10um X 660um±10um
- **Chip Thickness** : 220um ± 20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Description

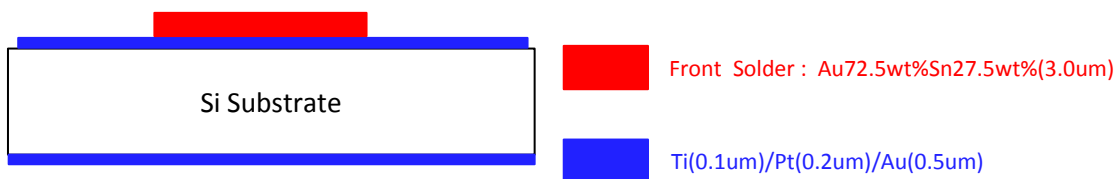
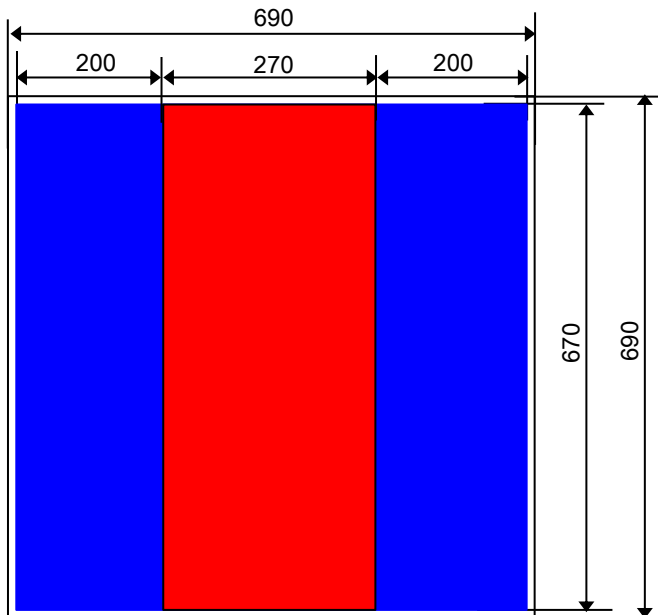
PSS-2071071S is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 690um±20um X 690um±20um
- **Solder Size** : 270um±10um X 670um±10um
- **Chip Thickness** : 220um ± 20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Description

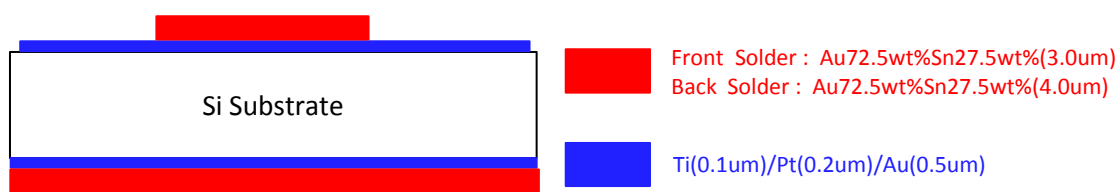
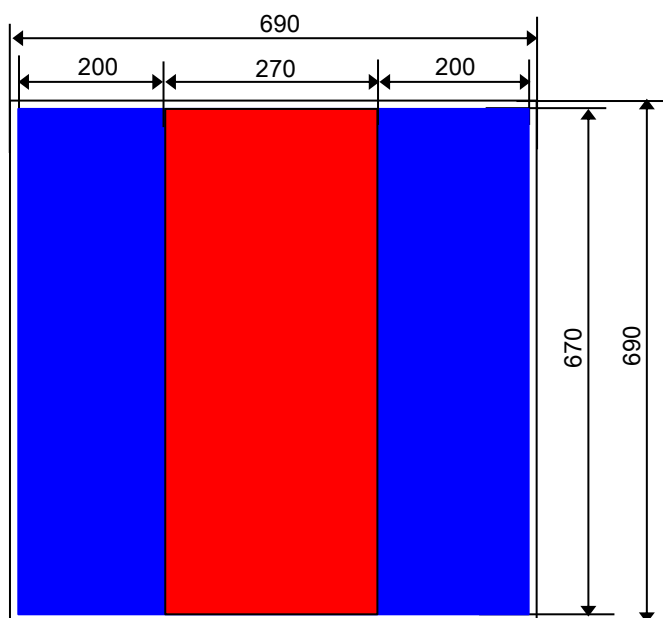
PSS-2071071D is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 690um±20um X 690um±20um
- **Solder Size** : 270um±10um X 670um±10um
- **Chip Thickness** : 220um ± 20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm



Description

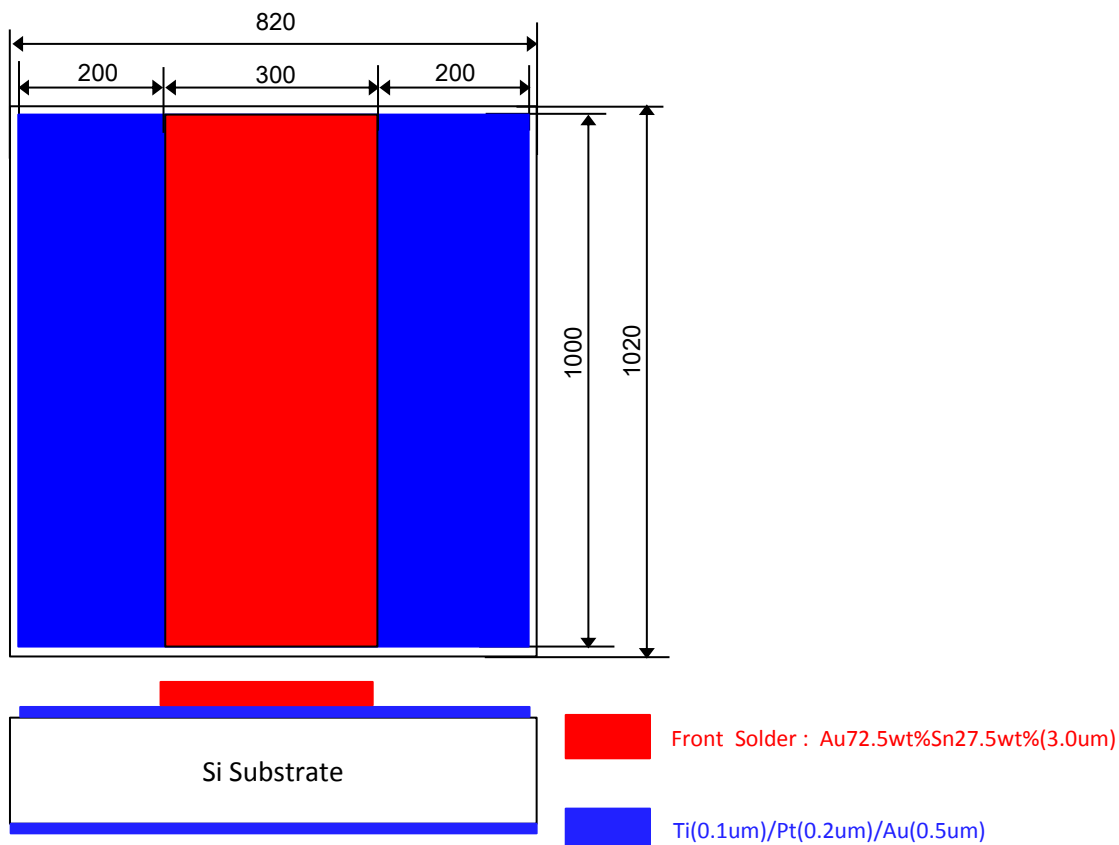
PSS-2084104 is silicon conductive type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 820um±20um X 1020um±20um
- **Solder Size** : 300um±10um X 1000um±10um
- **Chip Thickness** : 220um ± 20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side Solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%
- **Silicon substrate resistivity** : ≤0.01Ω-cm





AIN Submount Specifications

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Description

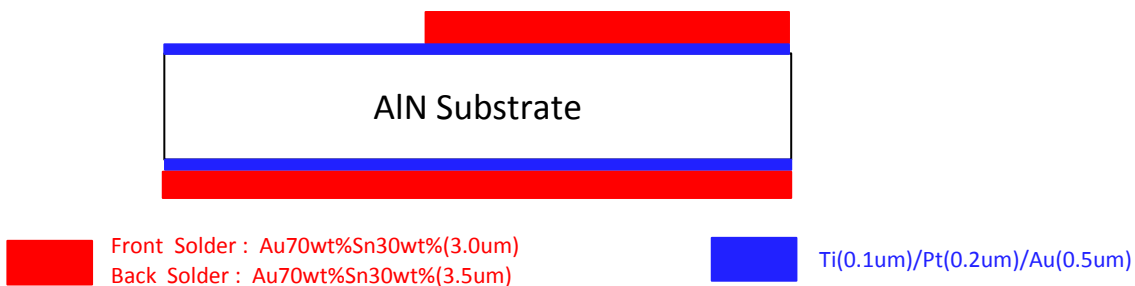
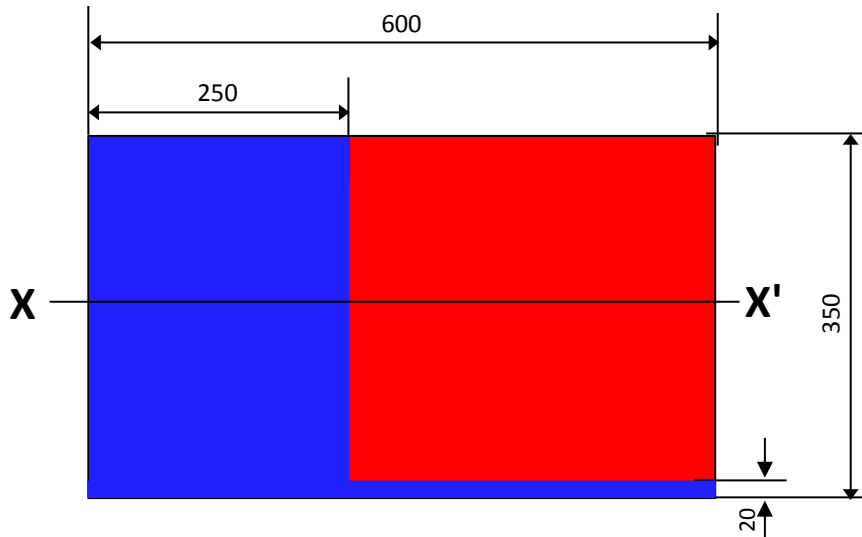
PSA-1069044 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 600um±30um X 350um±30um
- **Solder Size** : 350um±10um X 330um±10um
- **Chip Thickness** : 230um ± 25um(Include Metal layer)
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side solder : AuSn(3um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(3.5um)
 - Solder composition : Au(70±5wt%) : Sn(30±5wt%)
 - * Tolerance of metal thickness : ±20%



Front Solder : Au70wt%Sn30wt%(3.0um)
 Back Solder : Au70wt%Sn30wt%(3.5um)

Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

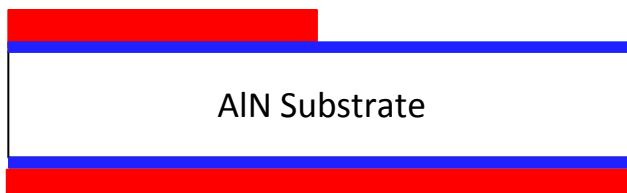
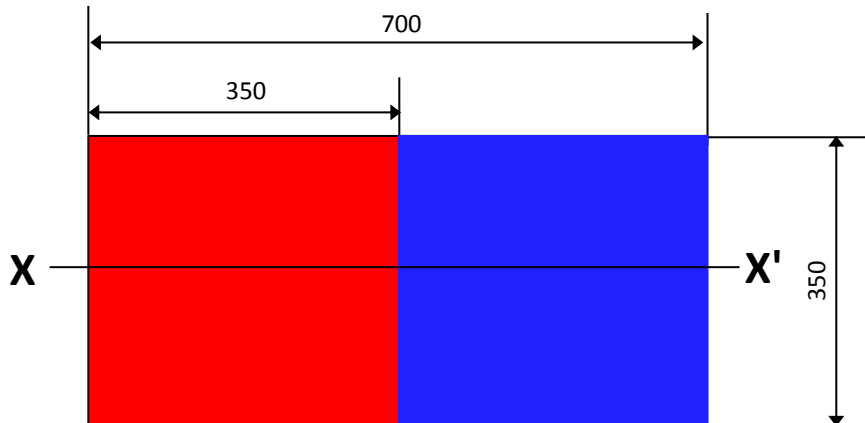
PSA-1077042 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 700um±30um X 350um±30um
- **Solder Size** : 350um±10um X 350um±10um
- **Chip Thickness** : 230um ± 25um(Include Metal layer)
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/40,000Å/10,000Å)
 - Front side solder : AuSn(3um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(3.5um)
 - Solder composition : Au(70±3wt%) : Sn(30±3wt%)
 - * Tolerance of metal thickness : ±20%



Front Solder : Au70wt%Sn30wt%(3.0um)
 Back Solder : Au70wt%Sn30wt%(3.5um)

Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

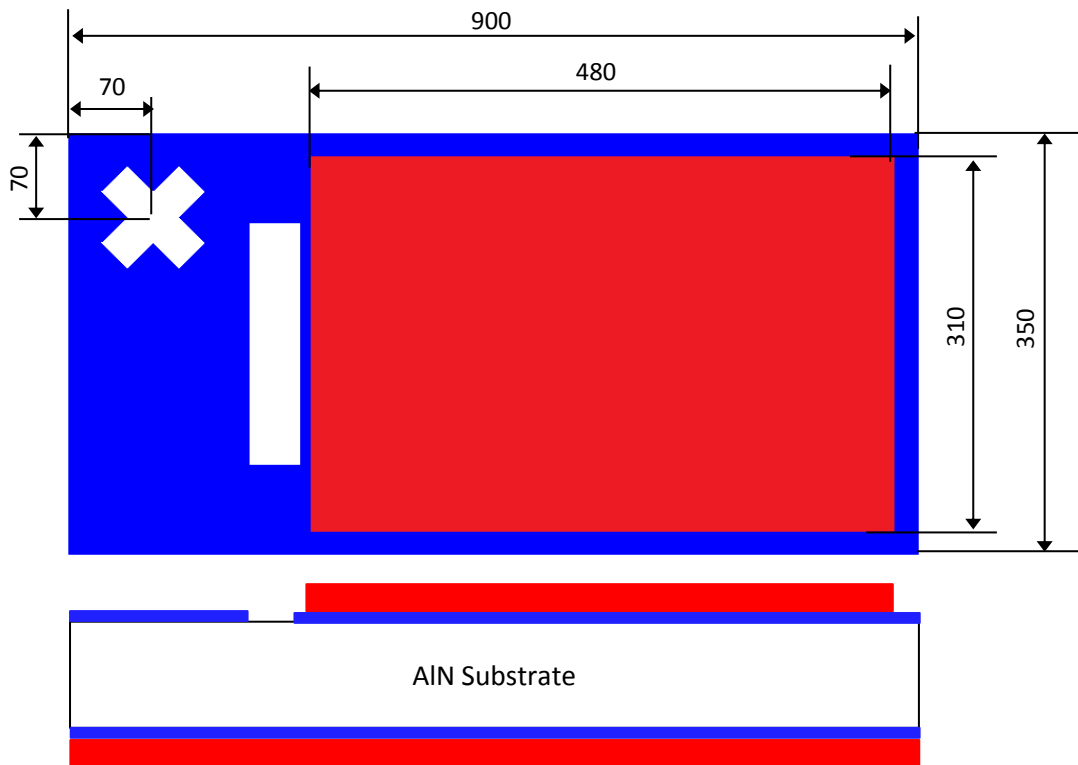
PSA-1079044 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 700um±30um X 350um±30um
 - **Solder Size** : 480um±10um X 310um±10um
 - **Chip Thickness** : 220um ± 25um
 - **Material** : **AlN(thermal conductivity : ≥170W/mk)**
 - **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side solder : AuSn(3um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±2.5wt%) : Sn(27.5±2.5wt%)
- * Tolerance of metal thickness : ±20%



Front Solder : Au72.5wt%Sn27.5wt%(3.0um)
 Back Solder : Au72.5wt%Sn27.5wt%(4.0um)

Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

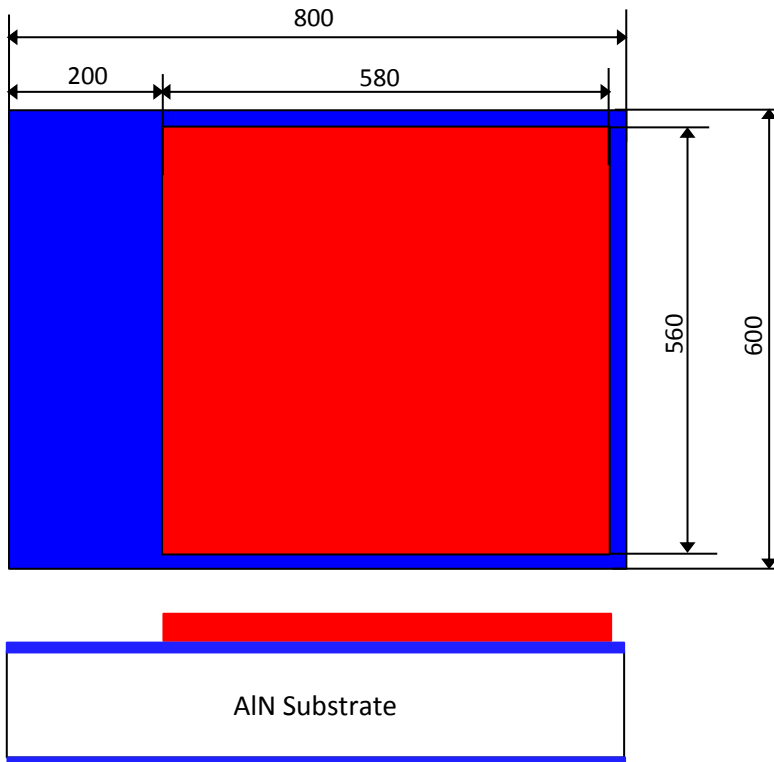
PSA-1089069 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 800um±30um X 600um±30um
- **Solder Size** : 580um±10um X 560um±10um
- **Chip Thickness** : 350um ± 20um
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side solder : AuSn(3um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Solder composition : Au(73±3.0wt%) : Sn(27±3.0wt%)
 - * Tolerance of metal thickness : ±20%



 Front Solder : Au73.0wt%Sn27.0wt%(3.0um)

 Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

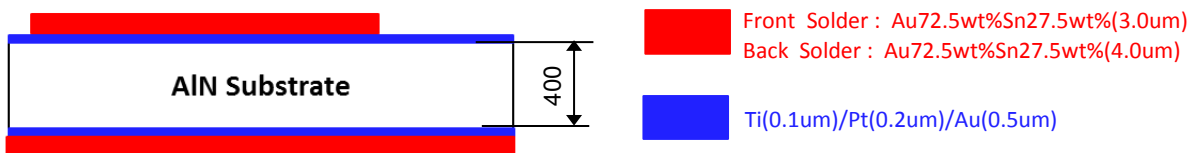
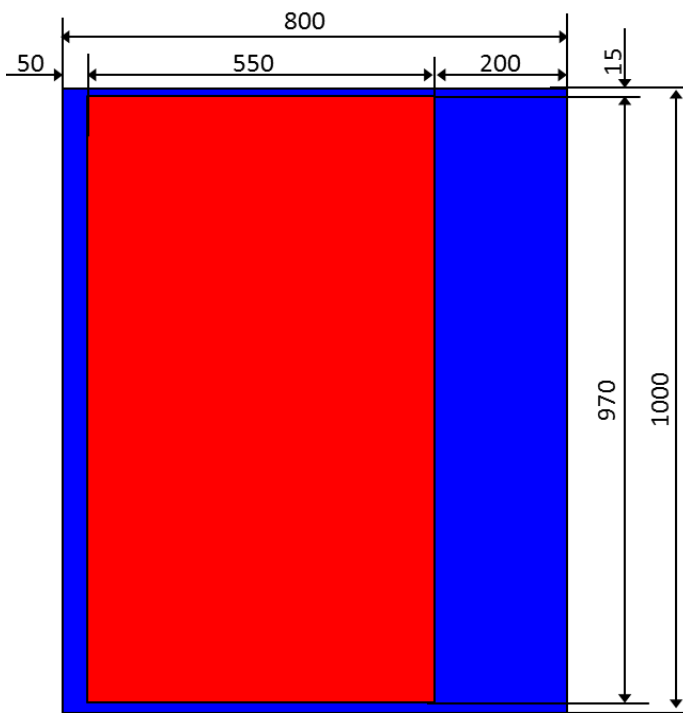
PSA-1089109 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 800um±30um X 1000um±30um
- **Solder Size** : 550um±10um X 970um±10um
- **Chip Thickness** : 400um ± 20um
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side solder : AuSn(3.0um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(4.0um)
 - Solder composition : Au(72.5±3wt%) : Sn(27.5±3wt%)
 - * Tolerance of metal thickness : ±20%



Description

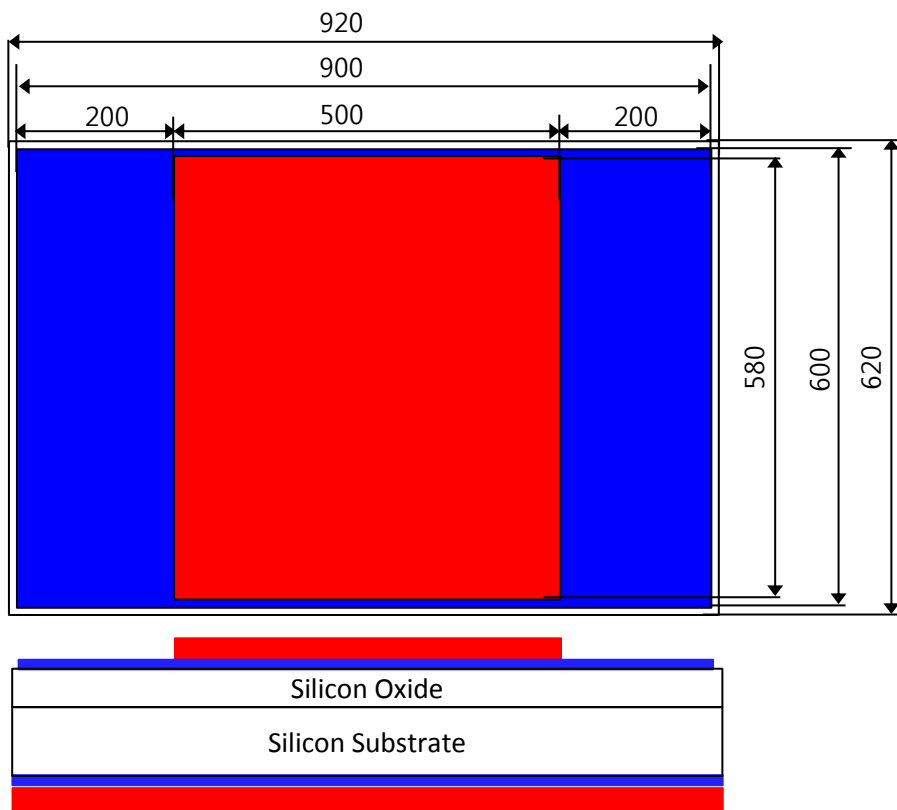
PSA-1094064 is silicon insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink, Eutectic bonding

Feature

- **Chip Size** : 920um±20um X 620um±20um
- **Solder Size** : 500um±10um X 580um±10um
- **Chip Thickness** : 220um ± 20um
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side solder : AuSn(3um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(3.5um)
 - Solder composition : Au(72.5±3.0wt%) : Sn(27.5±3.0wt%)
 - * Tolerance of metal thickness : ±20%
- **Resistance : 2MΩ ↑ @ V=±2V**



■ Front Solder : Au72.5wt%Sn27.5wt%(3.0um)
■ Back Solder : Au72.5wt%Sn27.5wt%(3.5um)

■ Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Power and Lighting Semiconductor Co., Ltd.

Description

PSA-1097067 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 900um±30um X 600um±30um
- **Solder Size** : 500um±10um X 560um±10um
- **Chip Thickness** : 220um or 400um ± 25um
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**

Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)

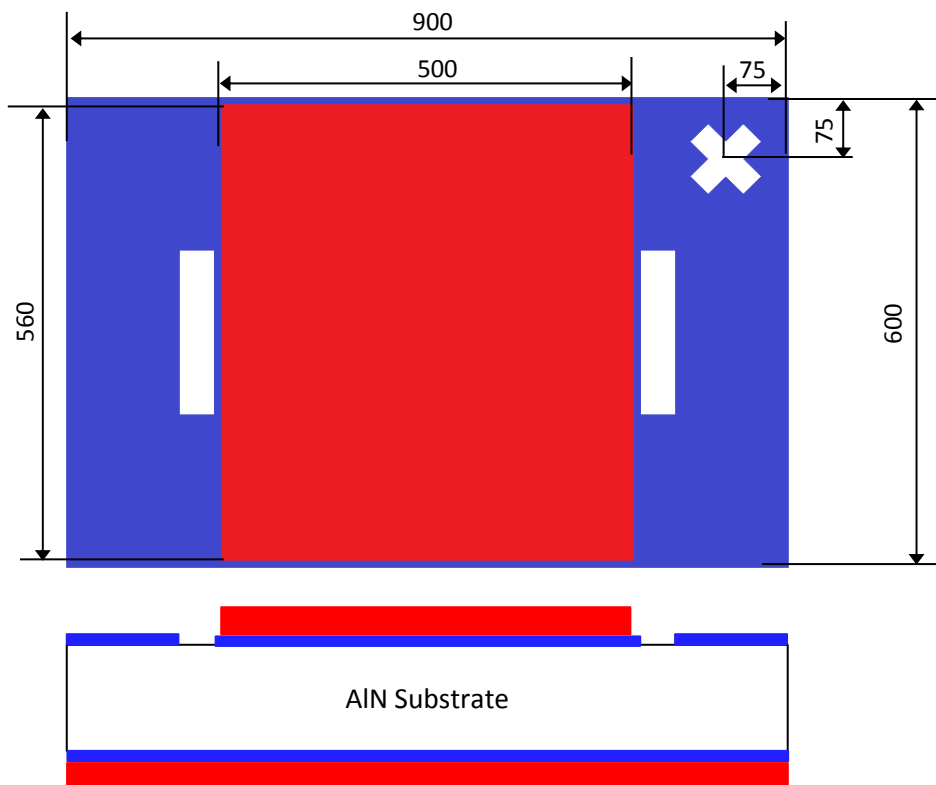
Front side solder : AuSn(3um)

Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)

Back side solder : AuSn(4.0um)

Solder composition : Au(72.5±2.5wt%) : Sn(27.5±2.5wt%)

* Tolerance of metal thickness : ±20%



■ Front Solder : Au72.5wt%Sn27.5wt%(3.0um)
Back Solder : Au72.5wt%Sn27.5wt%(4.0um)

■ Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

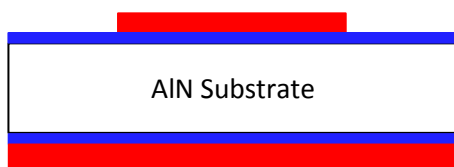
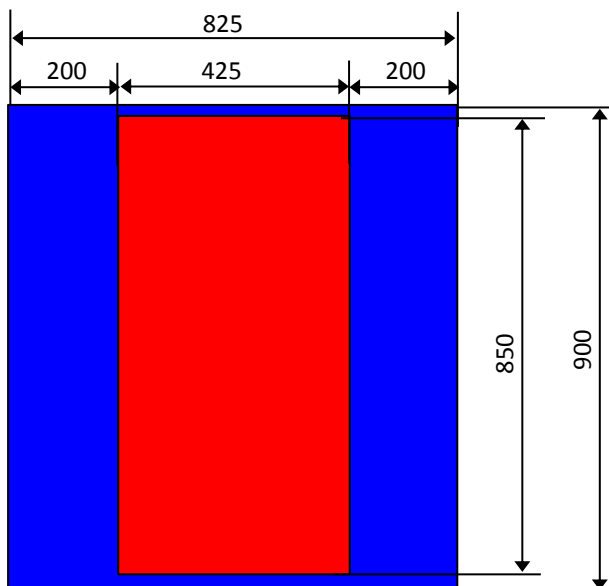
PSA-1090097 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 825um±30um X 900um±30um
- **Solder Size** : 425um±10um X 850um±10um
- **Chip Thickness** : 230um ± 25um
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Front side solder : AuSn(3um)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Back side solder : AuSn(3.5um)
 - Solder composition : Au(70±2.5wt%) : Sn(30±2.5wt%)
 - * Tolerance of metal thickness : ±20%



Front Solder : Au70.0wt%Sn30.0wt%(3.0um)
 Back Solder : Au70.0wt%Sn30.0wt%(3.5um)

Ti(0.1um)/Pt(0.2um)/Au(0.5um)

Description

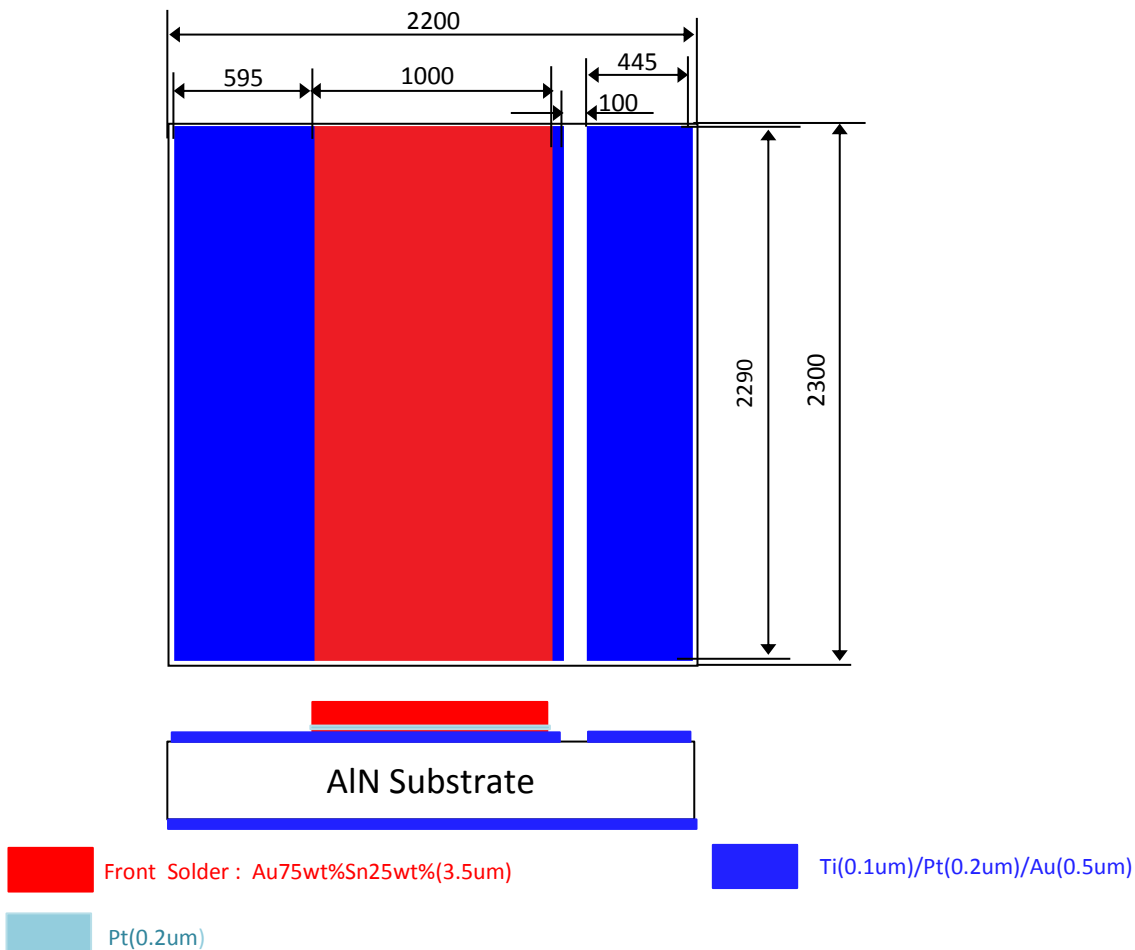
PSA-1229239 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 2200um±30um X 2300um±30um
- **Solder Size** : 1000um±10um X 2290um±10um
- **Chip Thickness** : 400um ± 30um(Include Metal layer)
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Cu/Au(1,000Å/2,000Å/40,000Å/10,000Å)
 - Front side solder : Pt/AuSn(2,000Å/35,000Å)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Solder composition : Au(75±5wt%) : Sn(25±5wt%)
 - * Tolerance of metal thickness : ±20%



Description

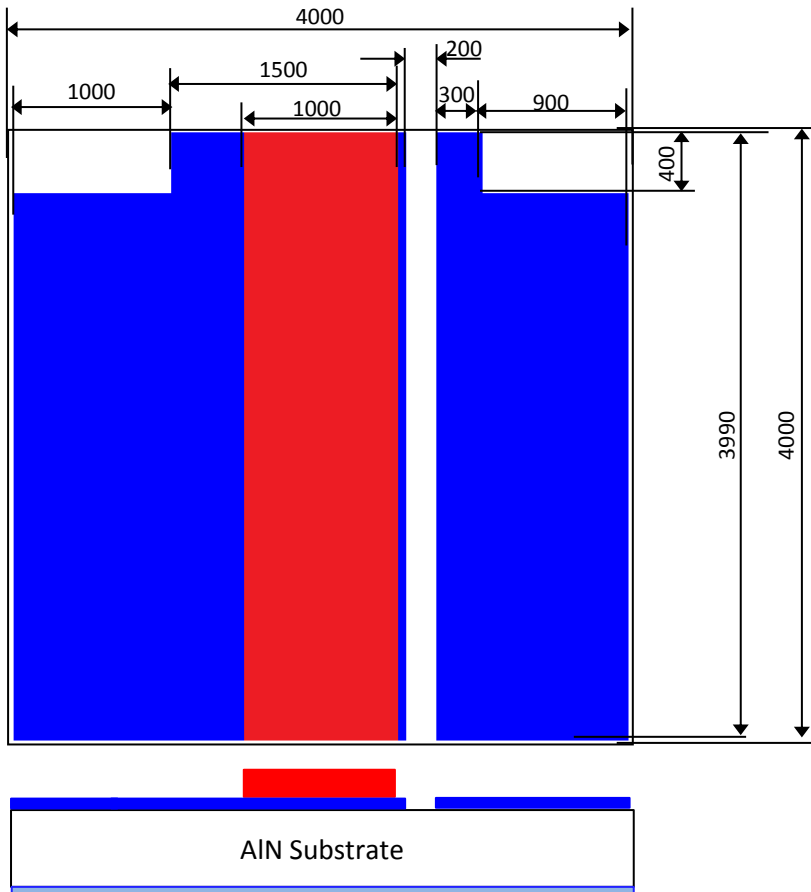
PSA-1409409 is AlN insulated type submount.

Application : Laser diode package and Optical module

Function : Heat sink

Feature

- **Chip Size** : 4000um±30um X 4000um±30um
- **Solder Size** : 1000um±10um X 3390um±10um
- **Chip Thickness** : 400um ± 30um(Include Metal layer)
- **Material** : **AlN(thermal conductivity : ≥170W/mk)**
- **Metallization**
 - Front side metal : Ti/Pt/Cu/Au(1,000Å/2,000Å/40,000Å/10,000Å)
 - Front side solder : Pt/AuSn(2,000Å/35,000Å)
 - Back side metal : Ti/Pt/Au(1,000Å/2,000Å/5,000Å)
 - Solder composition : Au(75±5wt%) : Sn(25±5wt%)
 - * Tolerance of metal thickness : ±20%



- Front Solder : Pt(0.2um)/Au75wt%Sn25wt%(3.5um)
- Back Metal : Ti(0.1um)/Pt(0.2um)/Au(0.5um)
- Front Metal : Ti(0.1um)/Pt(0.2um)/Cu(4.0um)/Au(1.0um)

Custom Solutions

P&L Semi designs and manufactures customized silicon devices. Based on our experienced R&D systems, P&L Semi will specify, design and manufacture a device for your application.

Custom Device Manufacture Process

