

Our Goal

Increase our customers' productivity and profitability through the design, application, and service of advanced materials.

Markets Served



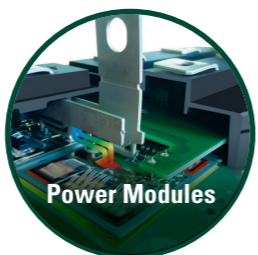
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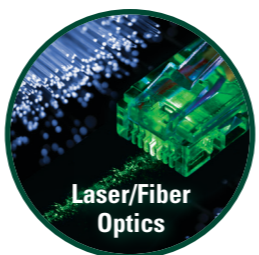
Defense



Downhole



Power Modules



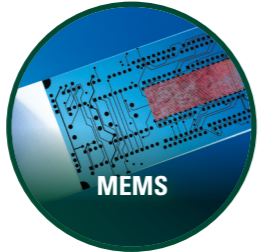
Laser/Fiber Optics



LED



Medical



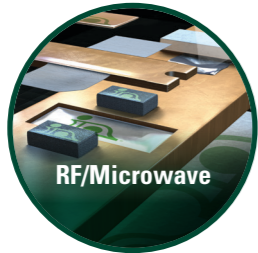
MEMS



PCBA



Metal Refining & Reclaim



RF/Microwave



Thermal Management

Global Technical Support and Facilities Worldwide



OUR BASIS FOR SUCCESS:

- Excellent product quality and performance
- Technical and customer service
- Cutting-edge material research and development
- Extensive product range
- Lowest cost of ownership

PRODUCTS FOR LASER AND OPTICAL PACKAGING

Indium Corporation is the leading solder and thermal innovator and supplier for laser and optical applications.

Contact our engineers: askus@indium.com

Learn more: www.indium.com

From One Engineer To Another™

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HIGH- AND LOW-TEMPERATURE SOLDER

HERMETIC SEALING AND COMPONENT BONDING IN LASER PACKAGES

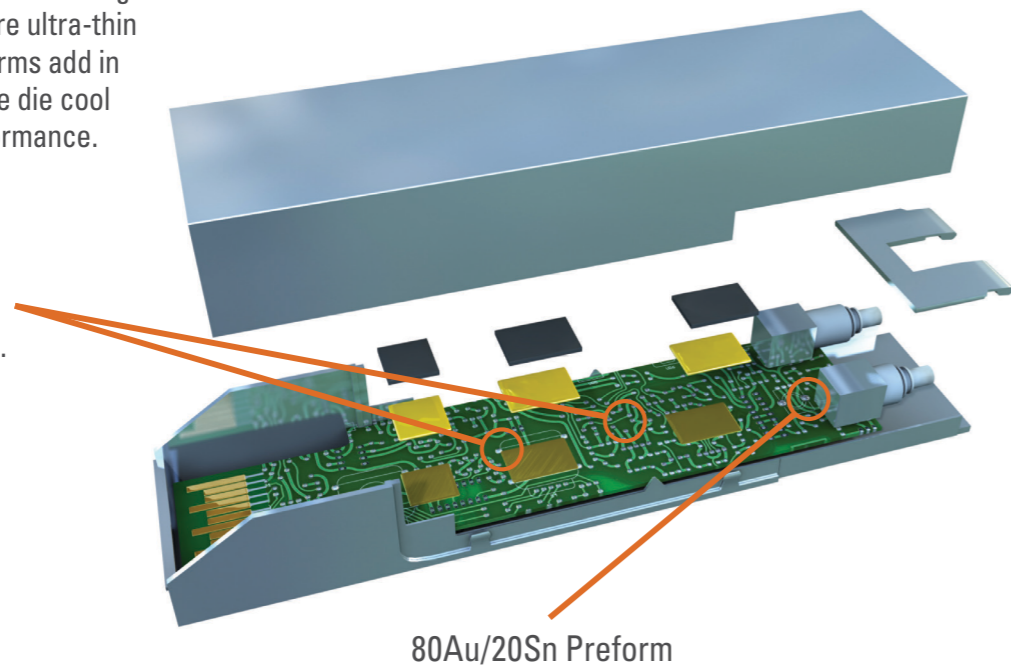
	Attributes	Alloys	Temperature
Gold-Based Alloys	<ul style="list-style-type: none"> • Strong bond strength • Excellent corrosion and oxidation resistance • Good thermal and electrical transfer at the braze joint 	Indalloy®182 (80Au/20Sn)	280°C Eutectic
		Indalloy®183 (88Au/12Ge)	356°C Eutectic
		Indalloy®178 (82Au/18In)	Solidus 451°C/Liquidus 485°C
		Indalloy®195 (80Au/20Cu)	891°C Eutectic
		Braze Indalloy®B955 (50Au/50Cu)	Solidus 955°C/Liquidus 970°C
		Braze Indalloy®B9902 (65Cu/35Au)	Solidus 990°C/Liquidus 1,010°C
		Indalloy®200 (100Au)	1,064°C Eutectic
Silver-Based Alloys	<ul style="list-style-type: none"> • High thermal and electrical conductivity • Capillaries very well into joints • Holds up well in applications with lots of stress and with CTE mismatches 	Braze Indalloy®B6851 (63Ag/27Cu/10In)	Solidus 685°C/Liquidus 730°C
		Indalloy®193 (72Ag/28Cu)	780°C Eutectic
		Braze Indalloy®B962 (99.99Ag)	962°C Eutectic
Tin-Based Alloys	<ul style="list-style-type: none"> • Lead-free • Excellent wetting characteristics 	SAC305 Indalloy®256 (96.5Sn/3Ag/.5Cu)	Solidus 217°C /Liquidus 220°C
		Indalloy®121 (96.5Sn/3.5Ag)	221°C Eutectic
		Indalloy®259 (90Sn/10Sb)	Solidus 243°C /Liquidus 257°C
Indium-Based Alloys	<ul style="list-style-type: none"> • Typically soft and ductile • Good wettability on many surfaces 	Indalloy®4 (100In)	157°C Eutectic
		Indalloy®1E (52In/42Sn)	118°C Eutectic
		Indalloy®290 (97In/3Ag)	143°C Eutectic

SFP TRANSCEIVER PACKAGES

Ultra-thin 80Au/20Sn Preforms for Semiconductor Laser Die Applications

Indium Corporation's advancements give us the ability to manufacture ultra-thin preforms. These thin preforms add in thermal transfer to keep the die cool for a consistent laser performance.

Indium Corporation offers a variety of SAC alloys in preforms and solder pastes to temperature and performance requirements.



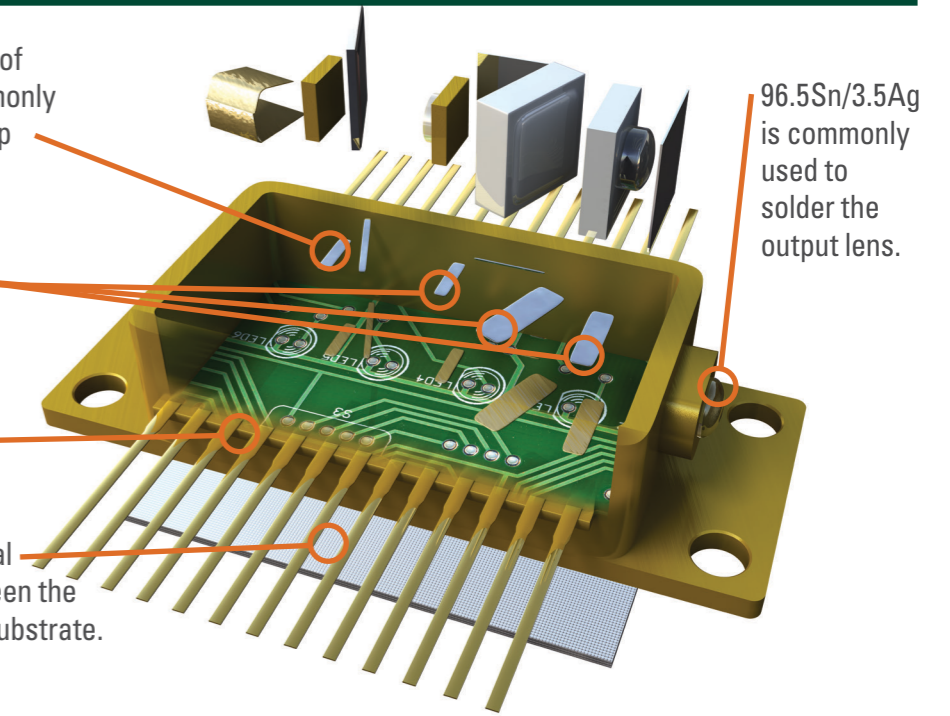
OPTICAL PACKAGES

Laser semiconductor dies produce a lot of heat and 80Au/20Sn preforms are commonly used for good thermal transfer and creep resistance.

Indium Corporation's SAC305 solder preforms and paste are a good option for component bonding in the package.

Thermal Interface Materials

- Pure indium preforms for soldering ceramic tabs to baseplate also enable thermal transfer.
- Heat-Spring® is a compressible thermal interface material that is placed between the package baseplate and the end-user substrate.



MOST COMMON THERMAL INTERFACE MATERIALS

	Thermal Conductivity (W/mK)	Maximum Operating Temperature	Minimum Pressure	Thermal Resistance at 100psi (cm ² -°C/W)
99.99In	86	130°C	40psi	0.0514 @ 0.004"
52In/48Sn	40	90°C	40psi	0.0390 @ 0.004"
Sn+	73	200°C	100psi	0.4961 @ 0.008"
HSMF	4.5	200°C	10psi	0.4156 @ 0.010"

LASER DIODE PACKAGES

Indalloy®/Temperature (Highest to Lowest)
193 (72Ag/28Cu) 780°C
184 (96.8Au/3.2Si) 363°C
183 (88Au/12Ge) 356°C
151 (92.5Pb/5Sn/2.5Ag) 298–305°C
182 (80Au/20Sn) 280°C
259 (90Sn/10Sb) 243–257°C
121 (96.5Sn/3.5Ag) 221°C
256 (96.5Sn/3Ag/0.5Cu) 217–220°C
106 (63Sn/37Pb) 183°C
290 (97In/3Ag) 143°C
282 (57Bi/42Sn/1Ag) 139–140°C
281 (58Bi/42Sn) 138°C
1E (52In/48Sn) 118°C

