

LOCTITE

RELIABLE MATERIALS FOR
WIREBOND PACKAGING



Henkel Adhesive Technologies

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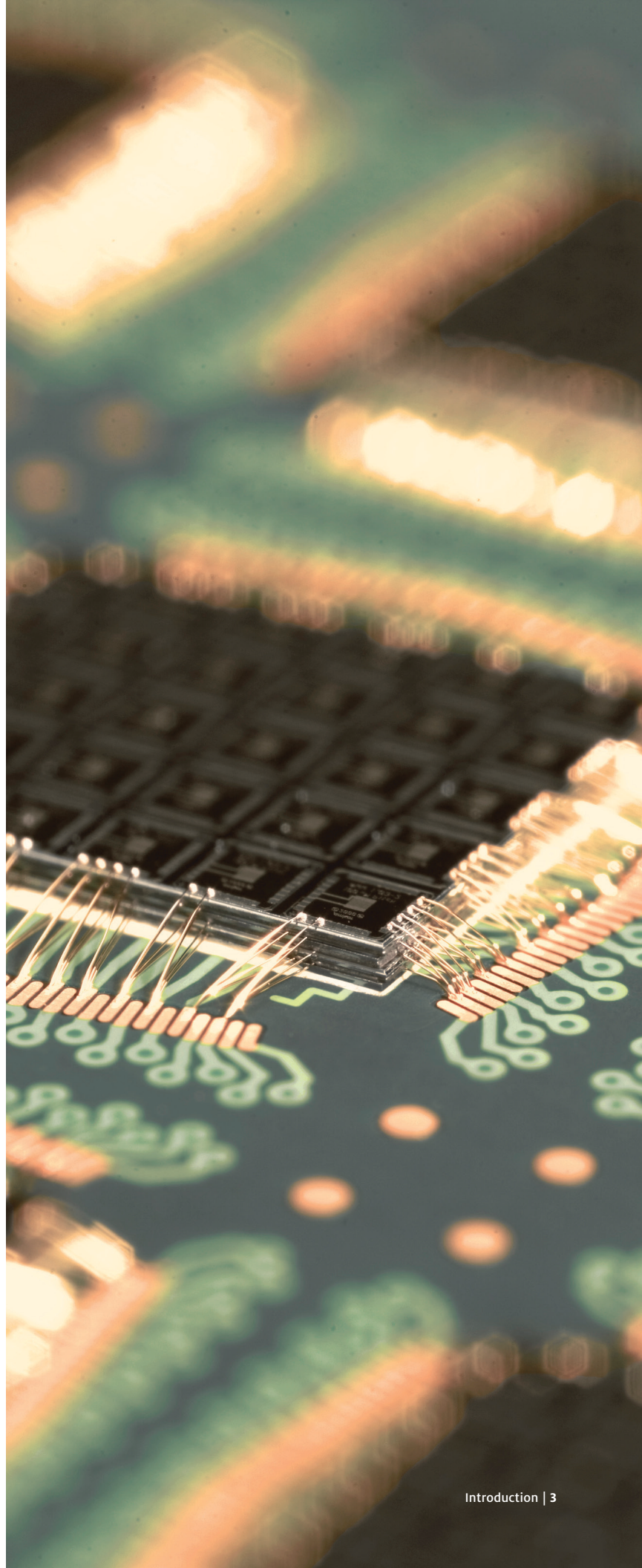
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WIREBOND PACKAGING: **RELIABLE, FLEXIBLE, AND PROVEN**

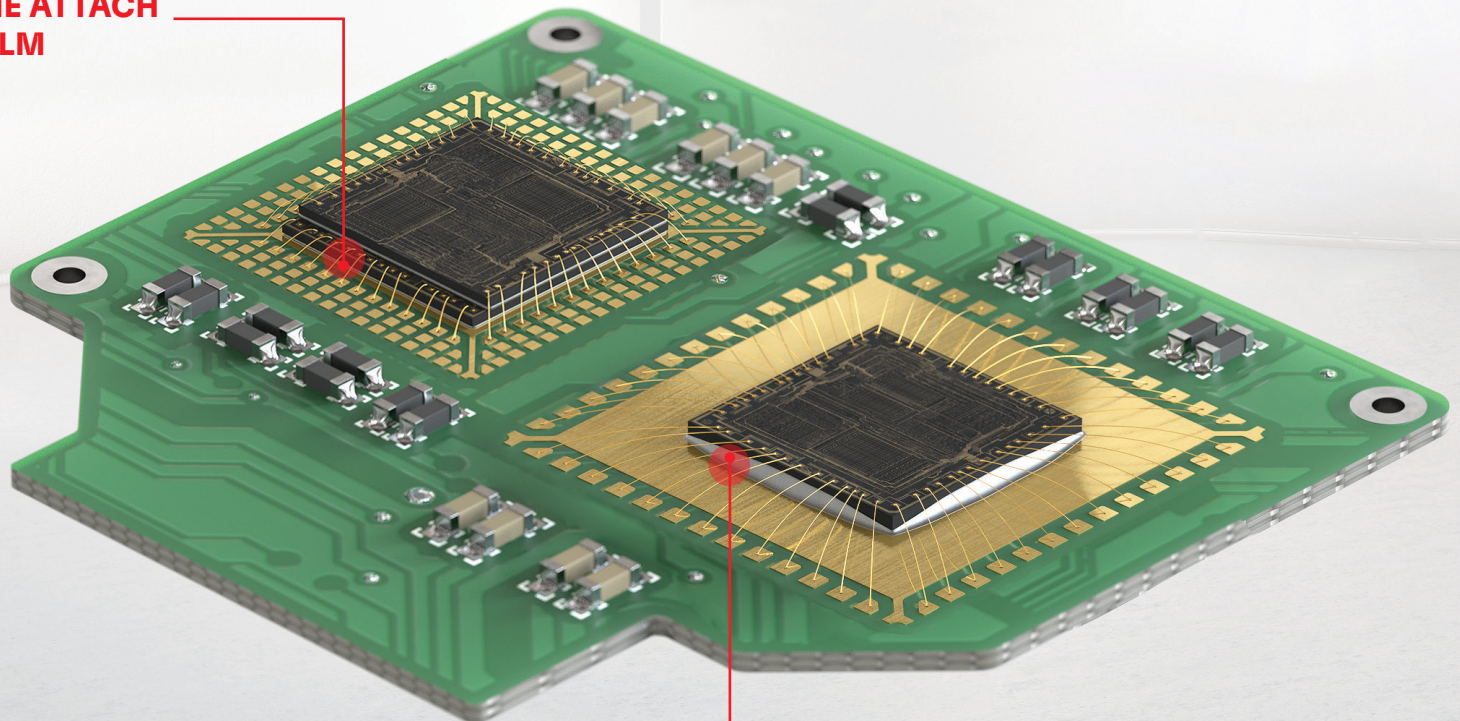
Semiconductor packaging innovation continues to push the boundaries of form and function. Wafers are thinner, die dimensions smaller, and heterogeneous integration designs like system-in-package (SiP) and system-on-module (SoM) are viable, cost-effective alternatives to transistor scaling for some applications. Both flip-chip and wirebond interconnect technologies enable these new architectures, with cost, form factor, and system speed requirements determining design approaches. Despite significant flip-chip growth, wirebond IC packaging remains a dominant interconnect technique due to its maturity, reliability, and proven performance in specific sectors, such as automotive. As a semiconductor materials innovator, Henkel has been delivering market-leading solutions for over 70 years.



LEADFRAME PACKAGING MATERIALS

Leadframe packaging continues to post solid growth year-over-year, with advances in the automotive and industrial automation sectors driving a large portion of the expansion. Because of the reliability demands of leadframe applications, the highest levels of JEDEC MSL and automotive grade performance is required. Henkel materials have a decades-long track record of exceptional quality, with continuous innovation addressing form factor and bond line control requirements for single- and multi-chip placement within increasingly more challenging form factors.

**DIE ATTACH
FILM**



**DIE ATTACH
PASTE**

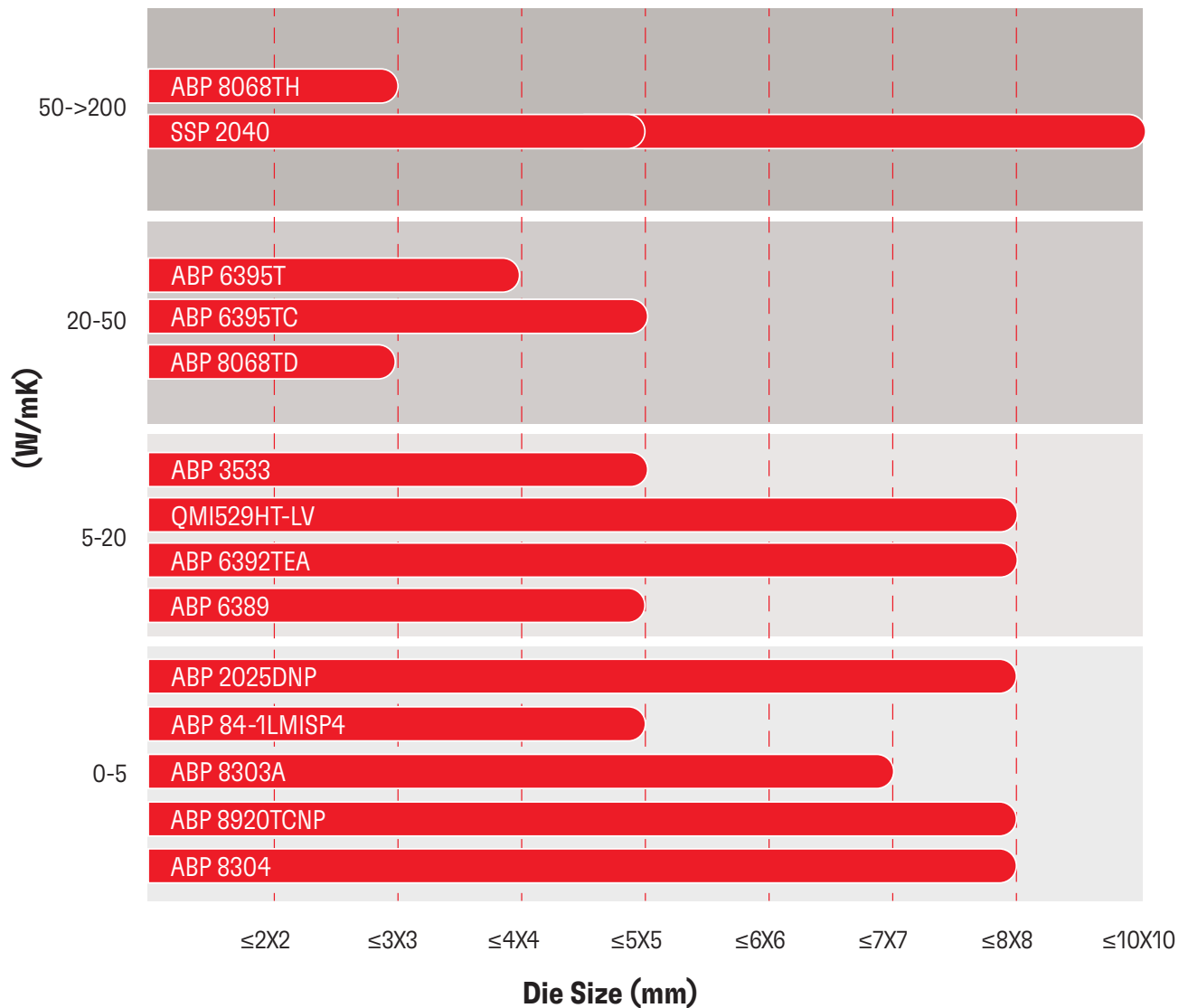
DIE ATTACH PASTES

When thermal control and unfailing function are mission-critical, packaging specialists choose Henkel die attach pastes. With a variety of options, including market-leading ultra-high thermal sintering and pressure-less sintering formulas, LOCTITE® ABLESTIK® conductive and non-conductive die attach formulations have been developed for compatibility with various metal surfaces for multiple package types.



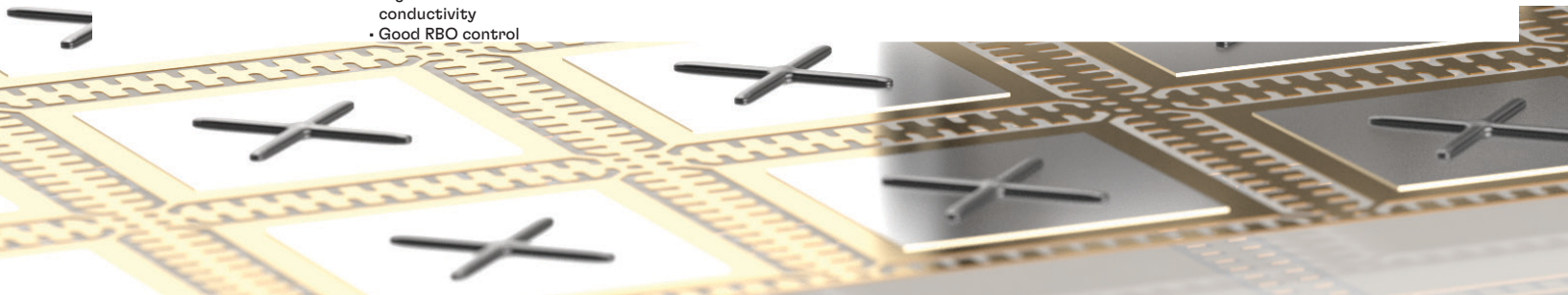
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Leadframe Die Attach Paste Thermal Conductivity



ELECTRICALLY CONDUCTIVE DIE ATTACH PASTES (cDAP) FOR WIREBOND LEADFRAME PACKAGING

Product Name	Description	Key Attributes	Recommended Package Type	Die Size	Substrate Finish	Moisture Sensitivity Level, MSL	Volume Resistivity	Thermal Conductivity	Recommended Cure
				mm			$\Omega \cdot \text{cm}$	W/mK	
LOCTITE® ABLESTIK ABP 3533	Epoxy die attach adhesive	<ul style="list-style-type: none"> • One component • Good workability • High reliability • Good electrical and thermal conductivity • Good adhesion on non-BSM and BSM die • Low stress • Moderate modulus • Low outgassing 	QFN, QFP, SOIC, TSOP & TSSOP	$\leq 5 \times 5$	Cu, Ag or PPF	L1 260°C capable	1.0×10^{-4}	3.8	30 min. ramp to 175°C + 60 min. in N2 or air
LOCTITE® ABLESTIK ABP 8303A	Ag-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Low bleed • Low condensable volatiles • Moderately stress-absorbing • Excellent dispensability • In-line oven snap cure or oven cure 	QFP, SOIC, TSOP & TSSOP	$\leq 7 \times 7$	Cu, Ag or PPF	L1 260°C capable	6.2×10^{-3}	1.8	80 sec. to peak 220°C (snap)
LOCTITE® ABLESTIK ABP 8304	Silver-Filled Die Attach Adhesive	<ul style="list-style-type: none"> • Compatible with copper leadframes • Suitable for large die • Automotive grade 	QFN, SOP, QFP	$\leq 8 \times 8$	Copper, roughened copper, silver, or PPF	L1 260°C capable	8.0×10^{-3}	2.0	30 min. ramp-up + 60 min. dwell at 175°C
LOCTITE® ABLESTIK 84-1LMISP4	Ag-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Excellent dispense capability • Long work life • High throughput • Box oven cure 	QFN, QFP	$\leq 5 \times 5$	rCu, Cu, Ag or PPF	L1 260°C capable	$\geq 2.0 \times 10^{-4}$	2.5	1 hr. at 175°C
LOCTITE® ABLESTIK ABP 6389	Ag-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Compatible with Cu leadframe • For medium die • High thermal • Automotive grade 	QFN, DFN, SOP, SOL	$\leq 5 \times 5$	Cu, Ag or PPF	L1 260°C capable	6.0×10^{-5}	10.0	30 min. ramp and 60 min. hold at 175°C
LOCTITE® ABLESTIK ABP 6392TEA	BMI hybrid, conductive die attach paste	<ul style="list-style-type: none"> • One component • High electrical conductivity • High thermal conductivity • Good adhesion to a variety of substrates • Good stress management 	QFN, QFP	$\leq 8 \times 8$	rCu, Cu, Ag or PPF	L1 260°C capable	4.0×10^{-5}	9	30 min. ramp to 175°C + 60 min. at 175°C, in air or nitrogen
LOCTITE® ABLESTIK ABP 6395T	Ag-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Compatible with Cu leadframe • For small die • Ultra high thermal • Automotive grade 	QFN, DFN, SOP	$\leq 4 \times 4$	Cu, Ag or PPF	L1 260°C capable	4.0×10^{-5}	30.0	30 min. ramp and 30 min. hold at 200°C
LOCTITE® ABLESTIK ABP 6395TC	Proprietary epoxy chemistry	<ul style="list-style-type: none"> • Good adhesion on non-BSM and BSM die • Good workability and open time • One component • High reliability • High thermal & electrical conductivity • Good RBO control 	TO, DFN, SOP, QFP and QFN	$\leq 5 \times 5$	Cu, Ag or PPF	L1 260°C capable	2.4×10^{-5}	30	30 min. ramp to 200°C + 30 min. at 200°C in N2 or Air oven



ELECTRICALLY CONDUCTIVE DIE ATTACH PASTES (cDAP) FOR WIREBOND LEADFRAME PACKAGING

Product Name	Description	Key Attributes	Recommended Package Type	Die Size	Substrate Finish	Moisture Sensitivity Level, MSL	Volume Resistivity	Thermal Conductivity	Recommended Cure
				mm			$\Omega \cdot \text{cm}$	W/mK	
LOCTITE® ABLESTIK ABP 8068TD	Ag-filled, pressure-less sintering paste	<ul style="list-style-type: none"> No BSM required High thermal Automotive grade 	QFN, DFN, SOT, SOP, DIP	$\leq 3 \times 3$	Cu, Ag or PPF	L1 260°C capable	1.0×10^{-5}	50	20 min. ramp to 130°C, hold for 30 min., 15 min. ramp to 200°C, hold for 1 hr. in Air or N2
LOCTITE® ABLESTIK ABP 8068TH	Ag-filled, pressure-less sintering paste	<ul style="list-style-type: none"> One component Excellent dispensing stability Compatible with banded needle Excellent RBO control Long open time High thermal conductivity Low stress Robust reliability 	QFN	$\leq 3 \times 3$	ENEPIG/ENIG substrate, Cu, Ag, PPF	L1 260°C capable	9.9×10^{-6}	150	5°C/min. ramp from 25°C to 150°C, hold for 30 – 60 min. 5°C/min. ramp to 200°C, hold for 90 – 120 min., N2 oven
LOCTITE® ABLESTIK QMI529HT-LV	Conductive die attach adhesive	<ul style="list-style-type: none"> Electrically conductive Thermally conductive Good dispensing characteristics Hydrophobic Stable at high temperatures Low moisture absorption Excellent adhesion Low stress Thermally stable at 260°C reflow Passes NASA outgassing Passes MIL STD 883, method 5011 	DIP, QFP, SOIC, TSOP & TSSOP	$\leq 8 \times 8$	Ag or PPF	L1 260°C capable	5×10^{-5}	8	30 min. ramp to 175°C + 1 hr. at 175°C
LOCTITE® ABLESTIK SSP 2040	Pure silver sintering material	<ul style="list-style-type: none"> Silver sintering technology Pressure-assist sintering Long shelf life Good sintering on copper High die shear strength Good workability Easy process dispensable or print Pure inter-metallic bonding High thermal conductivity High electrical conductivity High bonding strength on copper, silver and gold substrates 	Power Modules	5 x 5 - 10 x 10	Cu, Ag, Au substrates	L3 260°C capable	$< 1 \times 10^{-5}$	> 200	Pressure-assist sintering process: Dry: 20 min. at 100 – 150°C in N ₂ or air Die attach: 100°C / 100°C, 6 kg, 150 ms Sintering: 3 – 5 min. at $\geq 225^\circ\text{C}$ under 10 – 20 MPa pressure

ELECTRICALLY NON-CONDUCTIVE DIE ATTACH PASTES (ncDAP) FOR WIREBOND LEADFRAME PACKAGING

Product Name	Description	Key Attributes	Recommended Package Type	Die Size	Substrate Finish	Moisture Sensitivity Level, MSL	Volume Resistivity	Thermal Conductivity	Recommended Cure
				mm	cP		$\Omega \cdot \text{cm}$	W/mK	
LOCTITE® ABLESTIK ABP 8920TCNP	High thermal non-conductive die attach adhesive	<ul style="list-style-type: none"> Good adhesion High thermal conductivity Good electrical insulation High MSL performance Small and controlled particle size 	QFN, QFP, SOIC, TSOP & TSSOP	$\leq 4 \times 4$	Cu, Ag or PPF	L1 260°C capable	1.2×10^{16}	3.0	30 min. ramp to 175°C, hold for 1 hr. in air or N2
LOCTITE® ABLESTIK ABP 2025DNP	Silica-filled die attach adhesive	<ul style="list-style-type: none"> Low bleed Very low stress Red color for vision recognition Oven cure 	QFN, QFP, SOIC, TSOP & TSSOP	$\leq 8 \times 8$	Cu, Ag or Au	L3 260°C capable	491	0.3	30 min. ramp and 15 min. hold at 175°C

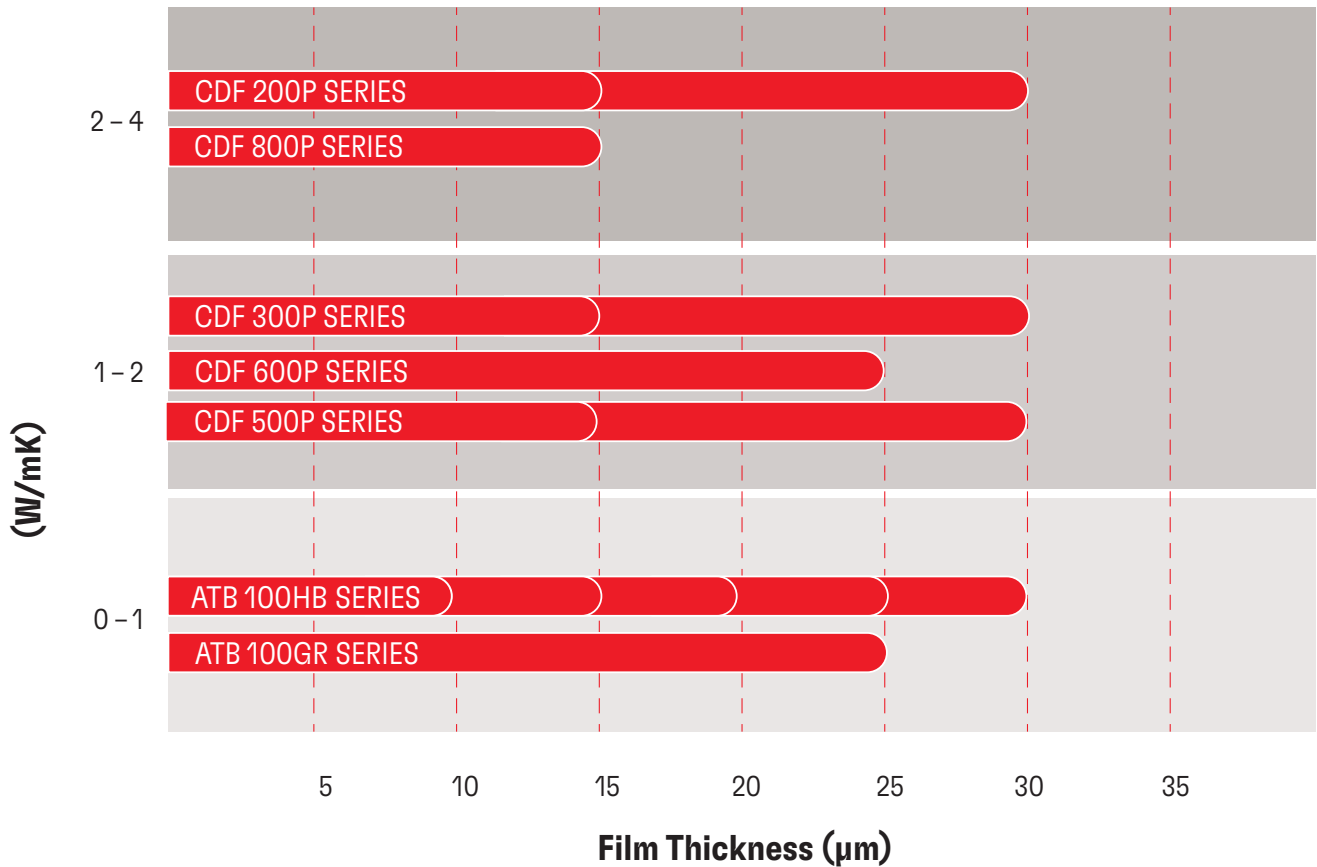


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DIE ATTACH FILMS

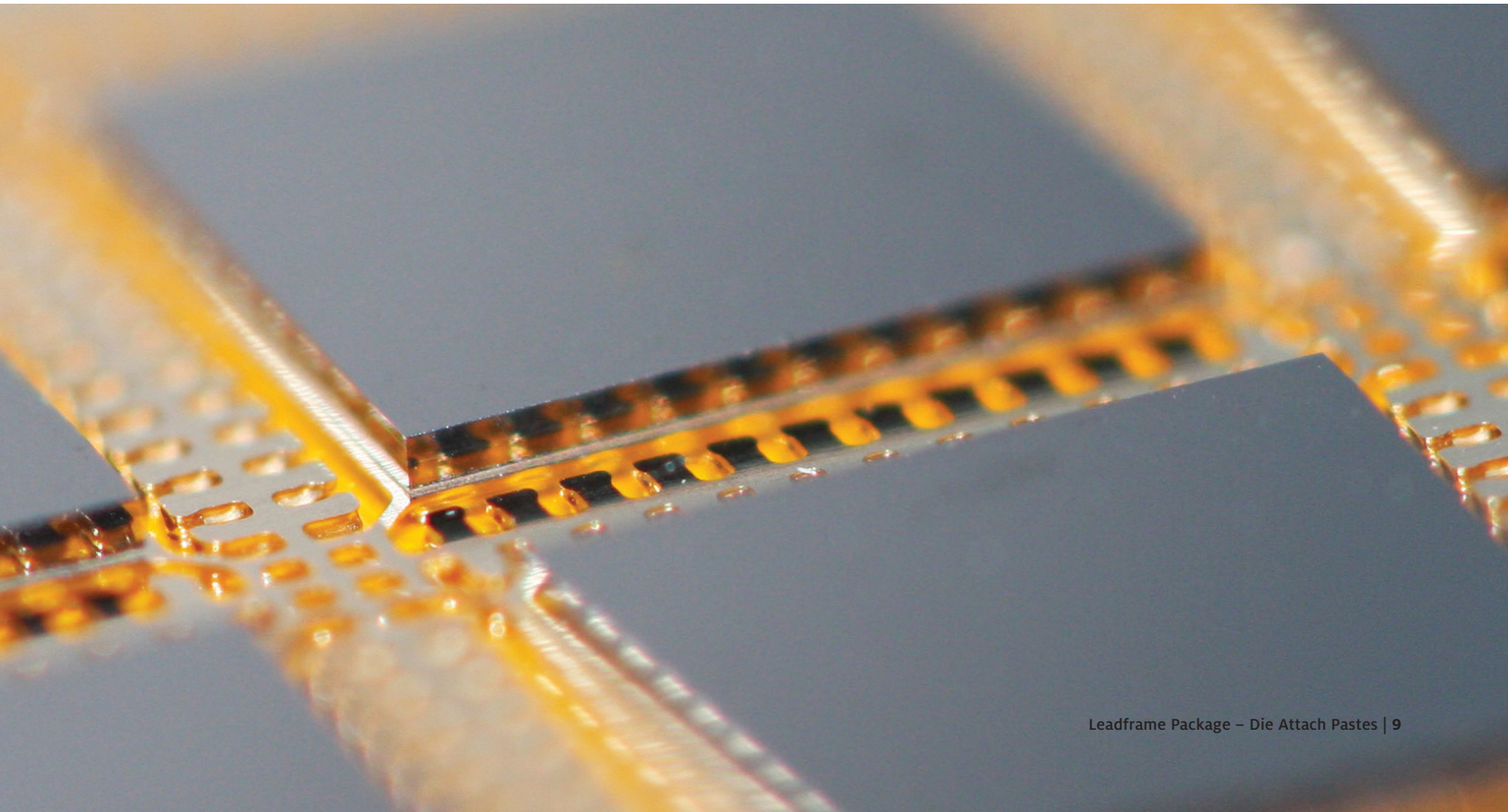
Die attach films are ideal for applications and processes with challenging die-to-pad ratios, high-density packaging designs, and thin wafer handling complexities. Multiple formulations are available and have been engineered to comply with many factors, such as wire type compatibility, cure preferences, wafer grinding, and die size requirements.

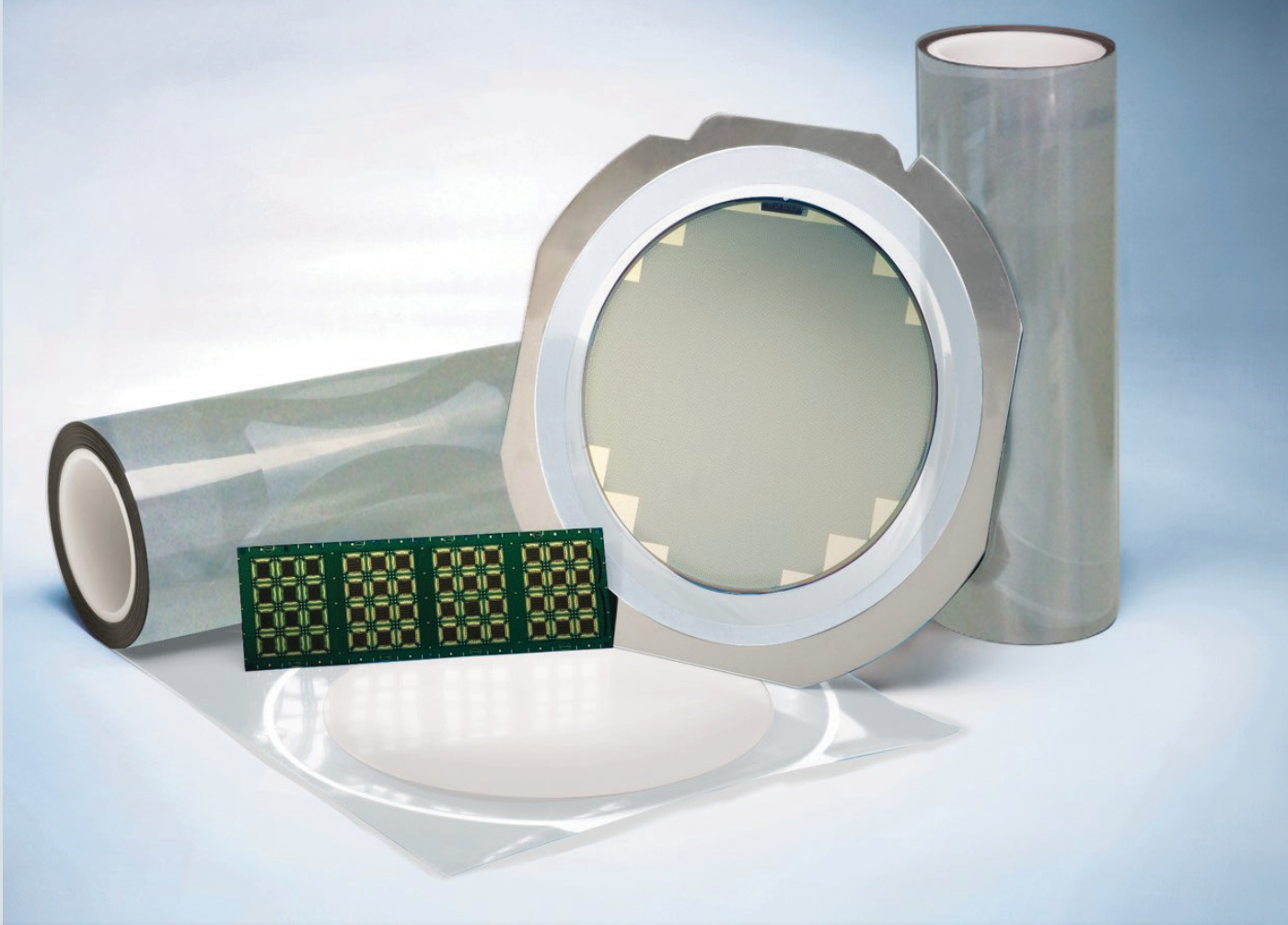
Leadframe Die Attach Film Thermal Conductivity



ELECTRICALLY CONDUCTIVE DIE ATTACH FILM (cDAF)

Product Name	Description	Key Attributes	Recommended Package Type	Film Thickness	Moisture Sensitivity Level, MSL	Thermal Conductivity	In-Package Thermal Resistance
				µm	MPa	W/mK	K/W
LOCTITE® ABLESTIK CDF 200P SERIES	Ag-filled die attach adhesive	<ul style="list-style-type: none"> • Suitable for small die • Recommended for thin wafer handling applications • Oven cure 	QFN, DFN, SOT	15 or 30	L1 260°C capable	2.3	1.5
LOCTITE® ABLESTIK CDF 300P SERIES	Ag-filled die attach adhesive	<ul style="list-style-type: none"> • Suitable for small die • High adhesion • Good wetting • Oven cure 	QFN, DFN, SOT	15 or 30	L1 260°C capable	1.0	2.1
LOCTITE® ABLESTIK CDF 500P SERIES	Ag-filled die attach adhesive	<ul style="list-style-type: none"> • Suitable for medium to large dies • Good wetting and low warpage • Recommended for thin wafer handling applications • Oven cure 	QFN, QFP	15 or 30	L1 260°C capable	1.5	1.4
LOCTITE® ABLESTIK CDF 600P SERIES	Ag-filled die attach adhesive	<ul style="list-style-type: none"> • Low stress and excellent wetting for large die • Compatible with various metal surfaces, including solder • Recommended for thin wafer handling applications • Oven cure 	QFN, QFP	25	L2 260°C capable	1.0	2.1
LOCTITE® ABLESTIK CDF 800P SERIES	Ag-filled die attach adhesive	<ul style="list-style-type: none"> • Suitable for small die • Recommended for thin wafer handling applications • Oven cure 	QFN, DFN, SOP	15	L1 260°C capable	3.4	0.7



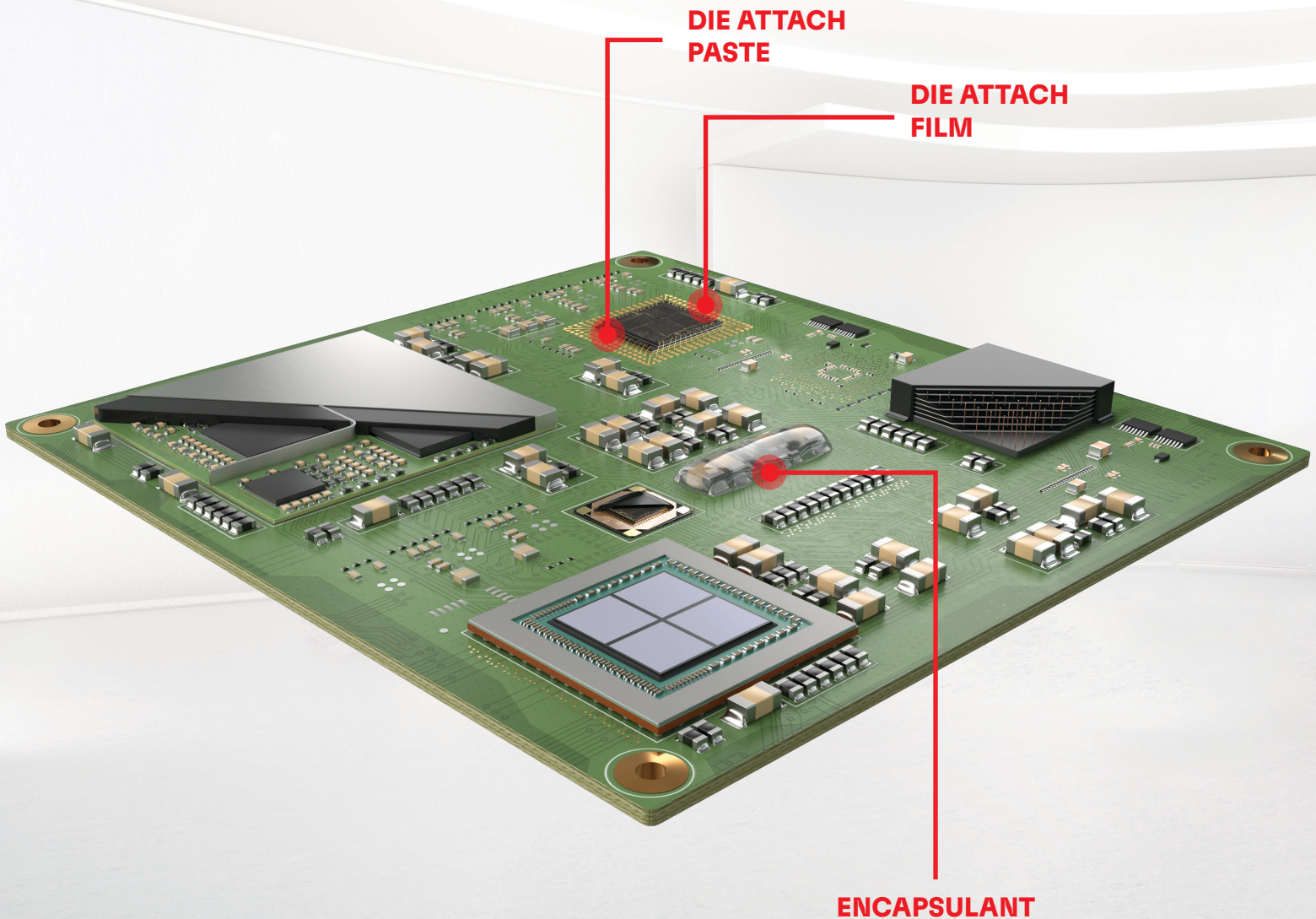


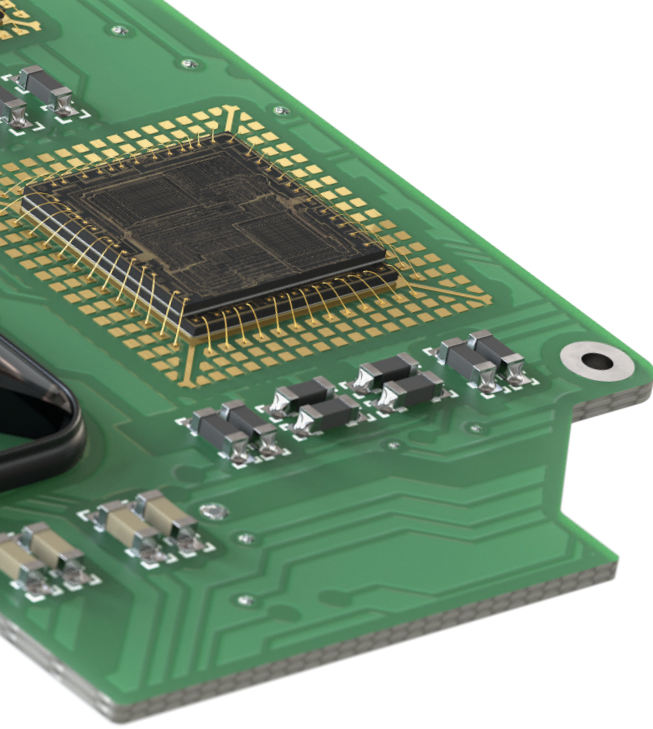
ELECTRICALLY NON-CONDUCTIVE DICING DIE ATTACH FILM (ncDAF)

Product Name	Description	Key Attributes	Recommended Package Type	Dicing Tape	Film Thickness μm	Thermal Conductivity W/mK	Moisture Sensitivity Level, MSL	Modulus at 25°C MPa
LOCTITE® ABLESTIK ATB 100GR SERIES	Silica-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Excellent workability • Excellent adhesion on both leadframe and laminate substrate • High reliability • Consistent dicing and die pickup for small to medium die • Air box oven cure – 30 min. ramp to 175°C + 60 min. at 175°C 	QFN, DFN, SOP	Non-UV	25	0.34	L1 260°C capable	3,205
LOCTITE® ABLESTIK ATB 100HB SERIES	Silica-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Long thermal budget (1 – 1.5 hr. at 175°C) • Consistent dicing and die pickup for large die applications • Good adhesion on various leadframe finishes • Air box oven cure – 30 min. ramp to 175°C + 60 min. at 175°C 	QFN, QFP	UV/Non-UV	5, 10, 15, 20, 25 or 30	0.21	L1 260°C capable	2,299
LOCTITE® ABLESTIK ATB F100E SERIES	Silica-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> • Suitable for small to large die • Excellent workability at die sizes below 3 x 3 mm • Long work life (4 months before and after lamination) • Compatible with stealth dicing before grind (SDBG) process • Film over wire (FoW) and film over die (FoD) applications • Oven cure 	QFN, DFN, SOP, SOT	UV/Non-UV	25 FoW: 35 – 80 FoD: 90 – 150	0.57	L1 260°C capable	5,256

LAMINATE PACKAGING MATERIALS

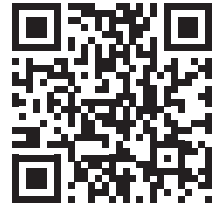
In addition to Henkel's well-known Bismaleimide (BMI)-based adhesives, new advances in IC packaging materials have been developed to facilitate high performance for various package designs – from LGAs to large format SiPs and SoMs. Products are available in paste, liquid, and film mediums, offering processing flexibility and precision for the most demanding applications and manufacturing environments.





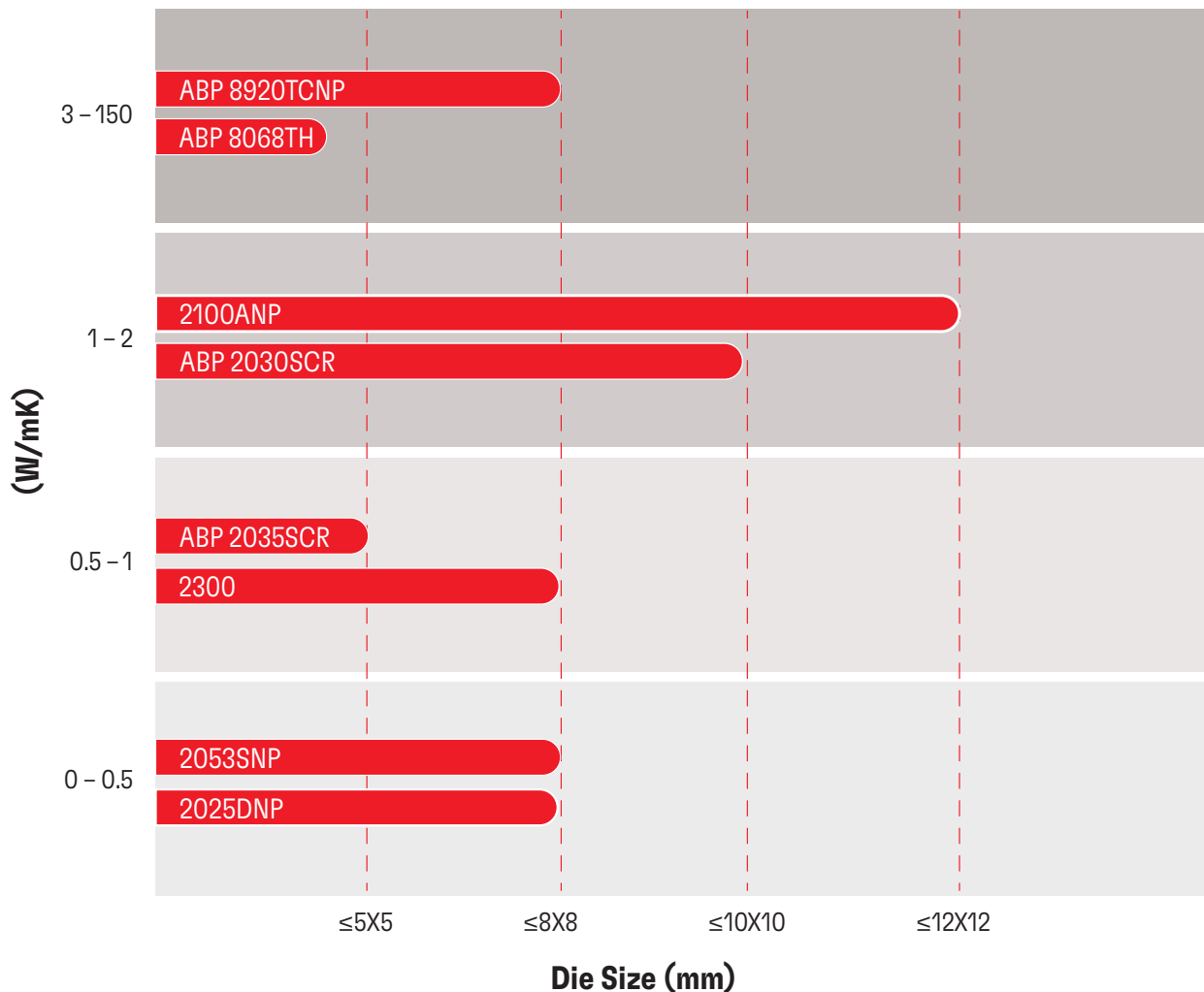
DIE ATTACH PASTES

Conductive and non-conductive LOCTITE® ABLESTIK brand die attach pastes are the market standard for high reliability and excellent performance. Meeting challenging high-density laminate package requirements and covering a wide die size range, Henkel die attach pastes provide key attributes such as fast oven cure or snap cure profiles, low modulus to manage stress and eliminate warpage, and low moisture absorption to prevent high temperature processing-induced cracking.



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Laminate Die Attach Paste Thermal Conductivity



ELECTRICALLY CONDUCTIVE DIE ATTACH PASTES (cDAP)

Product Name	Description	Key Attributes	Recommended Package Type	Die Size	Substrate Finish	Moisture Sensitivity Level, MSL	Thermal Conductivity	Recommended Cure
				mm			W/mK	
LOCTITE® ABLESTIK 2100ANP	Ag-filled die attach adhesive	<ul style="list-style-type: none"> Low bleed Low stress Oven cure 	BGA, LGA	≤ 12 x 12	Solder mask or Au	L2 260°C capable	1.2	30 min. ramp and 15 min. hold at 175°C
LOCTITE® ABLESTIK 2300	Ag-filled die attach adhesive	<ul style="list-style-type: none"> Low bleed Low stress Excellent dispensability Low voiding Oven cure 	BGA, LGA	≤ 8 x 8	Solder mask or Au	L2 260°C capable	0.6	30 min. ramp and 15 min. hold at 175°C
LOCTITE® ABLESTIK ABP 2030SCR	Ag-filled die attach adhesive	<ul style="list-style-type: none"> Low stress Compatible with dam & fill encapsulants Excellent dispensing performance for high throughput application Snap cure 	COB	≤ 10 x 10	Solder mask, Ag, Au or plastics	L2 260°C capable	2.0	120 sec. 120°C
LOCTITE® ABLESTIK ABP 8068TH	Silver Pressure-less Sintering die attach adhesive	<ul style="list-style-type: none"> One component Excellent dispensing stability Compatible with bended needle Excellent RBO control Long open time High thermal conductivity Low stress Robust reliability 	BGA, LGA	≤ 3 x 3	ENEPIG/ENIG substrate, Cu, Ag, PPF leadframe	L2 260°C capable	150	<p>For the die size ≤ 3 x 3 mm 5°C/min. ramp from 25°C to 150°C, hold for 30 – 60 min. 5°C/min. ramp to 200°C, hold for 90 – 120 min., N2 oven</p> <p>For the die size > 3 x 3 mm 5°C/min. ramp from 25°C to 150°C, hold for 30 – 90 min. 5°C/min. ramp to 200°C, hold for 90-120 min., N2 oven</p>

ELECTRICALLY NON-CONDUCTIVE DIE ATTACH PASTES (ncDAP)

Product Name	Description	Key Attributes	Recommended Package Type	Die Size	Substrate Finish	Moisture Sensitivity Level, MSL	Modulus at 25°C	Thermal Conductivity	Recommended Cure
				mm			MPa	W/mK	
LOCTITE® ABLESTIK 2025DNP	Silica-filled die attach adhesive	<ul style="list-style-type: none"> Low bleed Very low stress Red color for vision recognition Good adhesion to a variety of substrates Oven cure 	BGA, LGA	≤ 8 x 8	Solder mask, Cu, Ag or Au	L3 260°C capable	491	0.3	30 min. ramp and 15 min. hold at 175°C
LOCTITE® ABLESTIK ABP 2035SCR	Silica-filled die attach adhesive	<ul style="list-style-type: none"> Low stress Compatible with dam & fill encapsulants Excellent dispensing performance for high throughput application Snap cure or low temperature oven cure 	COB	≤ 5 x 5	Solder mask or Au	L3 260°C capable	1,500	0.6	30 min. ramp and 15 min. hold at 175°C
LOCTITE® ABLESTIK 2053SNP	Die Attach Adhesive	<ul style="list-style-type: none"> Non-conductive Low Stress Red Color 	BGA, LGA	≤ 8 x 8	Solder mask or Au	L3 260°C capable	112	0.3	30 min. ramp and 15 min. hold at 175°C in nitrogen
LOCTITE® ABLESTIK ABP 8920TCNP	High thermal non-conductive die attach adhesive	<ul style="list-style-type: none"> Good adhesion High thermal conductivity Good electrical insulation High MSL performance Small and controlled particle size 	BGA, LGA	≤ 8 x 8	Solder mask or Au	L3 260°C capable	5,200	3.0	30 min. ramp to 175°C, hold for 1 hr. in air or N2

DIE ATTACH FILMS

Henkel's film technology ingenuity is well-known across market sectors. Semiconductor packaging is no different. We pioneered the market's first conductive die attach film for devices like MOSFETs and RF to provide a solution for miniaturization, challenging die-to-pad ratios, low stress, and high adhesion. Electrically non-conductive die attach films deliver wafer handling stability and support, and offer thin bond lines for multi-die stacks.



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ELECTRICALLY CONDUCTIVE DIE ATTACH FILMS (cDAF)

Product Name	Description	Key Attributes	Recommended Package Type	Film Thickness	Moisture Sensitivity Level, MSL	Thermal Conductivity	In-Package Thermal Resistance
				μm		W/mk	K/W
LOCTITE® ABLESTIK CDF 600P SERIES	Ag-filled die attach adhesive	<ul style="list-style-type: none"> Low stress and excellent wetting for large die Compatible with various metal surfaces, including solder Recommended for thin wafer handling applications Oven cure 	BGA, LGA	25	L2 260°C capable	1	2.1

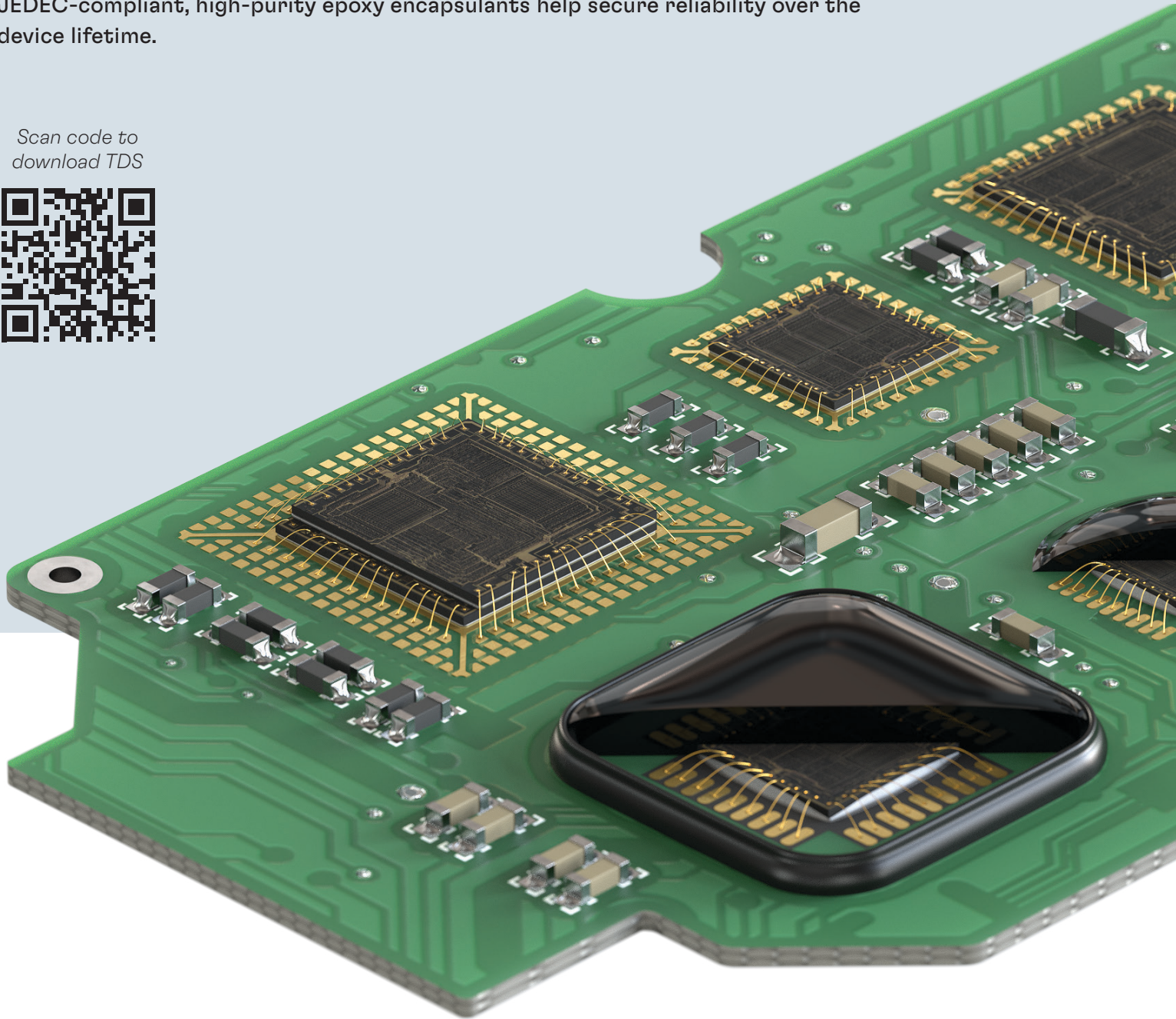
ELECTRICALLY NON-CONDUCTIVE DIE ATTACH FILMS (ncDAF)

Product Name	Description	Key Attributes	Recommended Package Type	Dicing Tape	Film Thickness	Wafer Thickness	Moisture Sensitivity Level, MSL	Modulus at 25°C
					μm	μm		MPa
LOCTITE® ABLESTIK ATB 100HB SERIES	Silica-filled die attach adhesive	<ul style="list-style-type: none"> Long thermal budget (1 – 1.5 hr. at 175°C) Consistent dicing and die pickup for large die applications SkipCure during molding process 	Memory, BGA	UV/ Non-UV	5, 10, 15, 20, 25 or 30	≥ 50	L2 260°C capable	2,299
LOCTITE® ABLESTIK ATB 100U SERIES	Silica-filled, rubberized epoxy die attach adhesive	<ul style="list-style-type: none"> Compatible with Cu wire or Au wire packages Compatible with Stealth Dicing before Grind (SDBG) process Fast oven cure 	BGA, iBGA	Non-UV	5, 10, 15, 20, 25 or 30	≥ 75	L2 260°C capable	875
LOCTITE® ABLESTIK ATB 100US SERIES	Silica-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> Long thermal budget (4 hr. at 175°C) Consistent dicing and die pickup for large die applications SkipCure during molding process 	BGA	UV/ Non-UV	5, 10, 15, 20, 25 or 30	≥ 50	L2 260°C capable	1,277
LOCTITE® ABLESTIK ATB F100E SERIES	Silica-filled, epoxy die attach adhesive	<ul style="list-style-type: none"> Suitable for small to large die Excellent workability for below 3 mm x 3 mm die Long work life (4 months before and after lamination) Compatible with Stealth Dicing before Grind (SDBG) process Film over wire (FoW) and film over die (FoD) applications Oven cure 	BGA	UV/ Non-UV	25 FoW: 35 – 80 FoD: 90 – 150	≥ 75	L2 260°C capable	5,256

ENCAPSULANTS

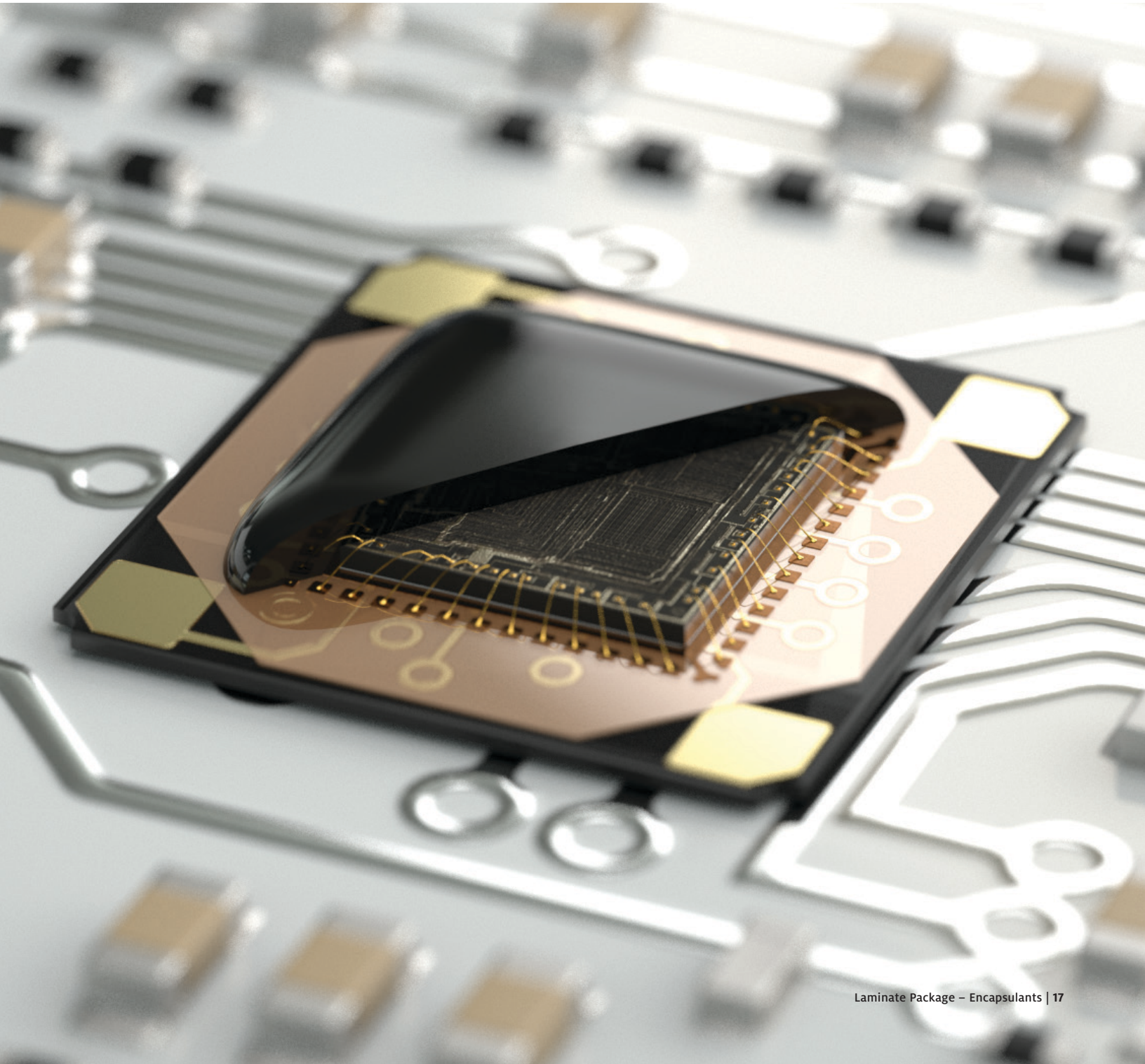
Henkel dam/fill and glob top encapsulant systems help protect chips from mechanical damage and corrosion. Optimized for fast dispensing with flexible cure profiles, JEDEC-compliant, high-purity epoxy encapsulants help secure reliability over the device lifetime.

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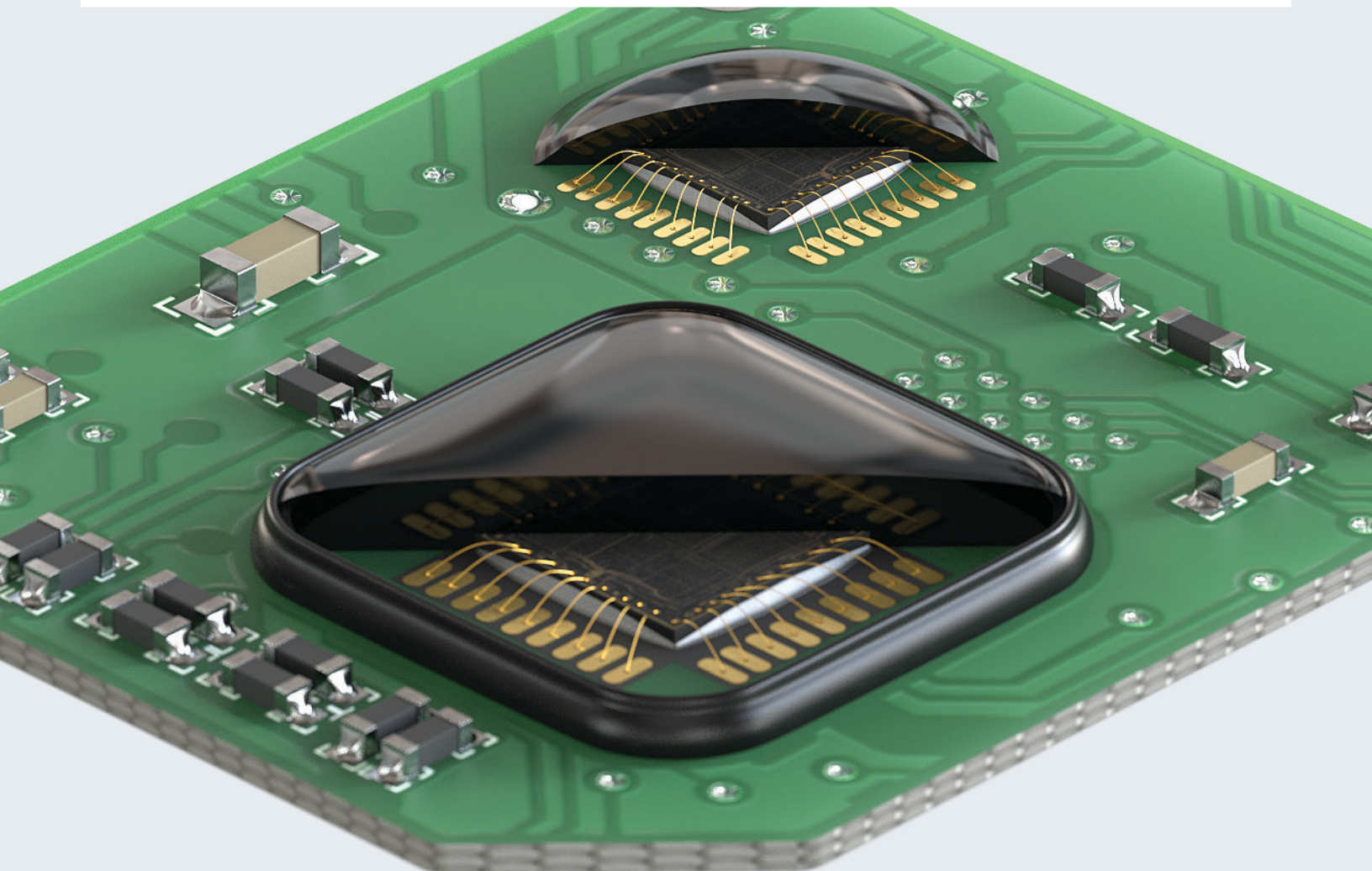
ENCAPSULANTS - DAM

Product Name	Description	Key Attributes	Recommended Package Type	Viscosity at 25°C	Glass Transition Temperature	CTE, Below	Recommended Cure
				cP	T _g (°C)	(ppm/°C)	
LOCTITE® ECCOBOND FP4451TD	Epoxy dam encapsulant	<ul style="list-style-type: none"> • Ionically clean • High thixotropy with high height to width aspect ratio (0.7) • Excellent chemical resistance and thermal stability • Designed for use with fill encapsulant LOCTITE® ECCOBOND FP4450 • Oven cure 	BGA	300,000 at 20 RPM	150	21	30 min. at 125°C + 90 min. at 165°C



ENCAPSULANTS - FILL

Product Name	Description	Key Attributes	Recommended Package Type	Viscosity at 25°C	Glass Transition Temperature	CTE, Below	Recommended Cure
				cP	T _g (°C)	(ppm/°C)	
LOCTITE® ECCOBOND FP4450HF	Epoxy fill encapsulant	<ul style="list-style-type: none"> • Excellent chemical, corrosion and moisture resistance • High thermal stability • Very high flow and fine filler (max. particle size 25 µm) • Oven cure 	COB, SiP	32,000 at 20 RPM	164	21	30 min. at 125°C + 90 min. at 165°C
LOCTITE® ECCOBOND FP4651	Epoxy fill encapsulant	<ul style="list-style-type: none"> • Low stress • Low CTE • Easy to dispense • Excellent chemical resistance and thermal stability • Oven cure 	BGA, COB, SiP, and chip array ceramic packages	130,000 at 20 RPM	150	11	1 hr. at 125°C + 90 min. at 165°C
LOCTITE® ECCOBOND FP4802	Epoxy fill encapsulant	<ul style="list-style-type: none"> • MSL2 260°C capable • Low warpage • Excellent flow, good for fine pitch wires and deep cavities • Oven cure 	BGA, CSP and full array on low temperature co-fired ceramic (LTCC)	80,000 at 10 RPM	50	20	60 min. at 120°C + 120 min. at 165°C





GLOBAL RESOURCES, LOCAL EXPERTISE

At Henkel, we take innovation and customer collaboration seriously. That's why we've invested in resources around the world to meet you where you are. With teams of technology experts and digital tools to connect global R&D and application centers, we help you bring new products to market faster, more sustainably, and more competitively. Discover why Henkel's approach to thinking globally and acting locally sets us – and you – apart.



SCAN TO LEARN MORE

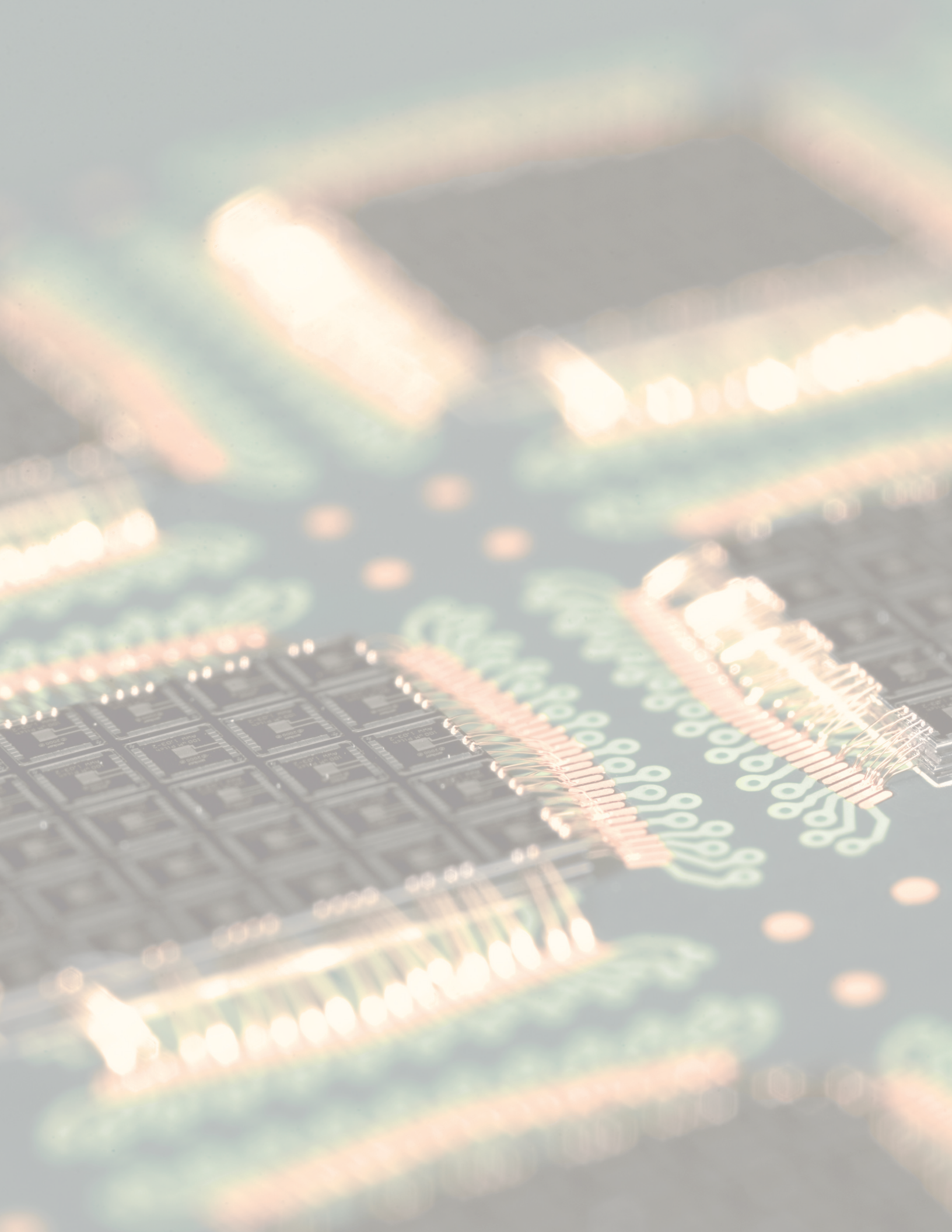
APPENDIX

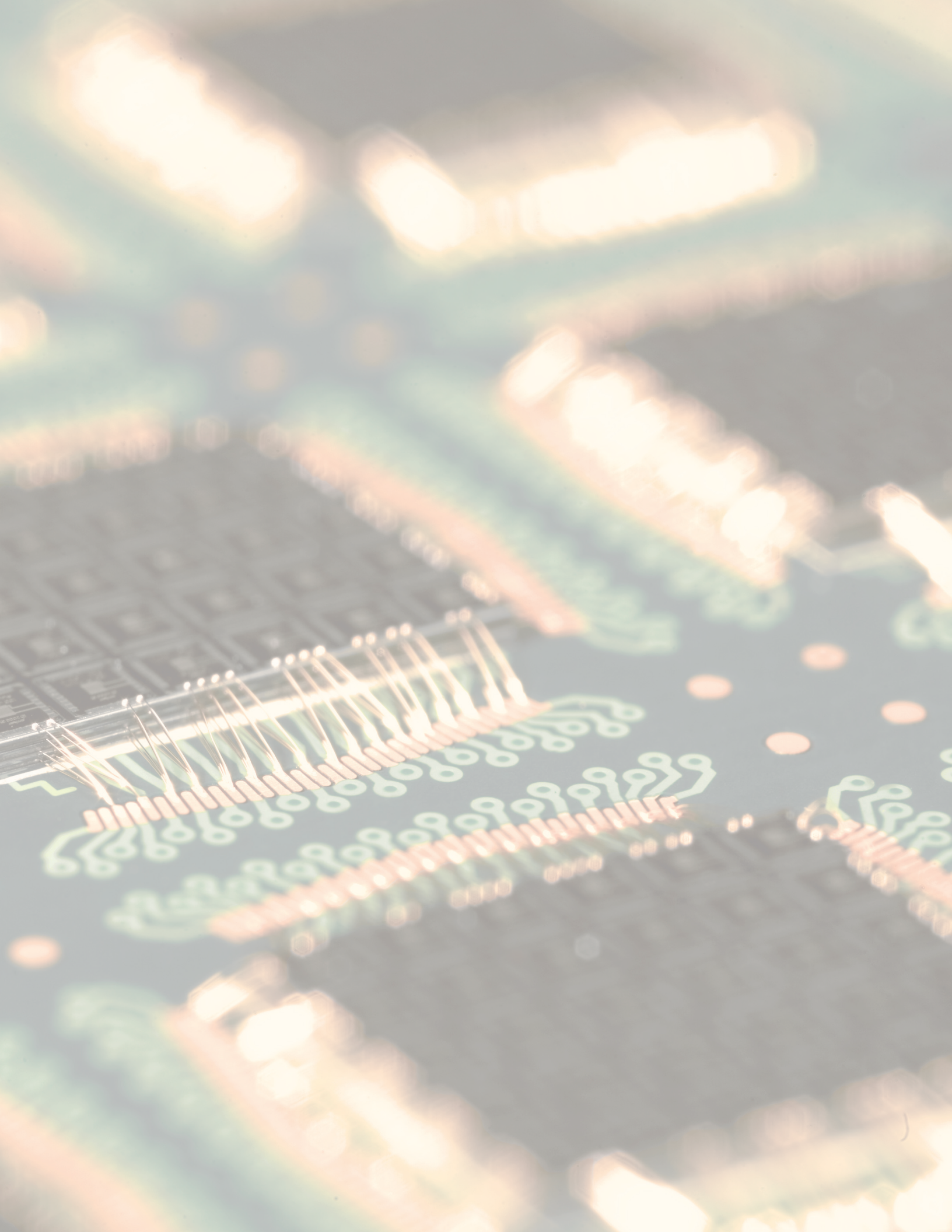
INDEX OF TERMS

TERM	DESCRIPTION
BGA	Ball Grid Array
BMI	Bismaleimide Resin
CBGA	Ceramic Ball Grid Array
COB	Chip On Board
CSP	Chip Scale Package
CTE	Coefficient of Thermal Expansion
DIP	Dual In-line Package
EMI	Electromagnetic Interference
FBGA	Fine Ball Grid Array
IC	Integrated Circuit
LGA	Land Grid Array
MEMS	Micro-Electro Mechanical Systems
MOSFET	Metal-Oxide Semiconductor Field-Effect Transistor
MSL	Moisture Sensitivity Level
PBGA	Plastic Ball Grid Array
PGA	Pin Grid Array
PPF	Pre-Plated Finishes consisting of layers of Ni, Pd and a Au finish
PTFE	PolyTetraFluoroEthylene
QFN	Quad Flat No-leads Package
QFP	Quad Flat Package
RF	Radio Frequency
SiP	System-in-Package
SOIC	Small Outline Integrated Circuit
TSOP	Thin Small Outline Package
TSSOP	Thin-Shrink Small Outline Package

CURE TYPES

CURE TYPE	DESCRIPTION
B-stage	Partial cure until the material is in a solid state and relatively tack-free at room temperature, but will soften and flow when heated
Oven cure	Standard thermal cure in a traditional box oven, usually between 15 min. and 1 hr.
Snap cure	Fast thermal cure via in-line oven, with or without contact heat, usually under 2 min.
<i>SkipCure</i>	Very fast thermal cure that can be partially cured during the wirebonding process and fully cured during the molding process
UV cure	Cure by exposure to ultraviolet light





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