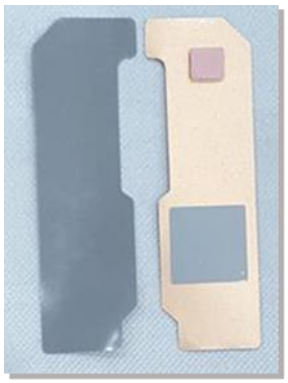
CoolShield-Flex Series

Thermal and EMI Shielding Film



THERMAL AND EMI SHIELDING FILM:

CoolShield-Flex is a stack-up film of thermal interface materials (TIM), metal foils and conductive pressure sensitive adhesives (CPSA). Used together with board level shielding (BLS) frame, it can perform both thermal transmission and shielding for ICs in electronics devices. Meanwhile, CoolShield-Flex provides lower total thickness comparing with other solutions, which makes it fit for use in all compact space designs such as smartphones, tablets and other consumer electronics.

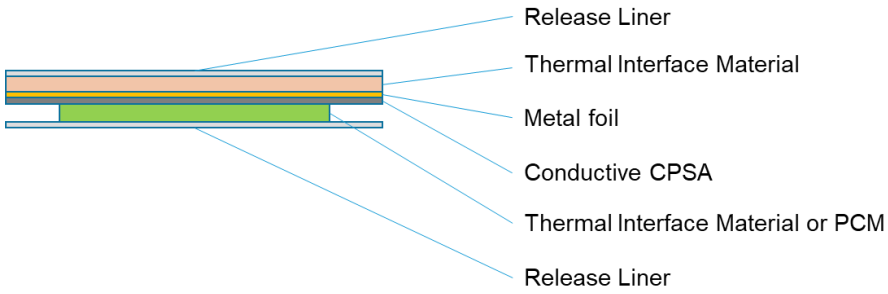
FEATURES AND BENEFITS

- Low height
- Low weight
- Disposable
- Ease of maintenance
- RoHS compliance and Halogen free

MARKETS

- Consumer electronics including smart phones & tablets
- Drones
- Handhold medical devices

TYPICAL STRUCTURE



Typical Structure		Thickness	Thermal Conductivity
Upper TIM	Tflex HR600	0.2mm	3W/Mk
Metal Foil	Copper	0.018mm	≥380W/Mk
CPSA		0.022mm	
Lower TIM	Tpcm 585	0.127mm	3.8W/Mk
Total Thickness		0.367mm	

APPLICATIONS

- Coolshield-Flex can be attached to BLS frame to directly replace BLS cover to provide same level of shielding effectiveness. 2mm frame width is suggested to provide enough area for CPSA to get good adhesion.
- Size of BLS need to be considered if CoolShield-Flex will be used to replace BLS cover. Special frame design might be required if BLS size is too large.
- Tab can be added in die cut process for easy peel and stick.
- Pre-assembly of Coolshield-Flex with BLS frame is possible. High temperature CPSA is available for such cases to survive reflow process.
- Different upper and lower TIM might be used if higher thermal conductivity is required. Please contact our local field application engineer for support.

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www.laird.com

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SPECIFICATIONS

TYPICAL PROPERTY	TFLEX HR600
Construction	Filled silicone elastomer
Color	Dark Grey
Thermal Conductivity ASTM D5470	3W/mK
Hardness (Shore 00) ASTM D2240 (3 second)	40
Density	2.5g/cc
Operating temperature range	-45°C up to 200°C
Volume resistivity ASTM D257	10^{13} Ohm-cm
UL Flammability Rating	94V0

TYPICAL PROPERTY	TPCM585
Construction	Non-reinforced film
Color	Grey
Specific gravity	2.87g/cc
Thermal Conductivity	3.8W/mK
Phase change softening temperature	50°C
Operating temperature range	-40°C up to 125°C
Volume resistivity	3.0 x 10^{12} ohm-cm

TYPICAL PROPERTY	COPPER FOIL WITH CPSA
Adhesive strength with 180° Peel	≥1.3kg/inch
Operating temperature range (°C)	-20°C up to 120°C