Under Development

Noise Suppression Thermal Conductive Sheet - Carbon Fiber Type

The usage of 5G technology will enable faster OTA updates and v2v and v2x communication. Thus, EMC solutions, especially in high frequency domain for receiver and RF module, become increasingly essential.

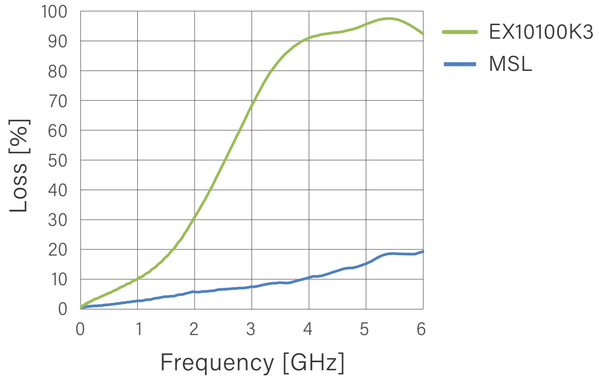
Product Name

EX10000K3

Noise Suppression
20W TIM
Carbon Fiber + Magnetic filler hybrid type

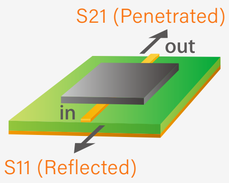
Features

Excellent noise suppression in high frequency band

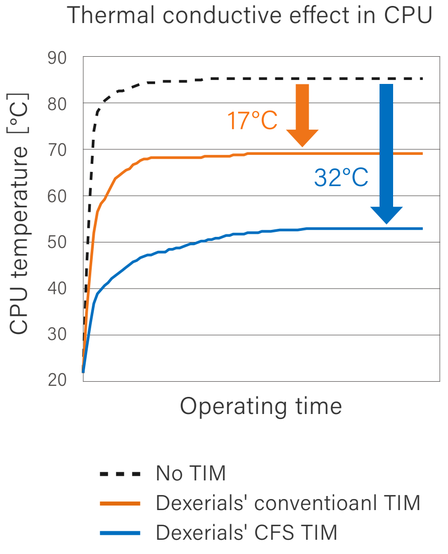


[Measuring Condition]

2cm square sheet is placed on the MSL (Micro Strip Line), and the loss is measured by S11 and S21.
(Thickness of sheet is 1.0mm)



Ultrahigh thermal conductivity

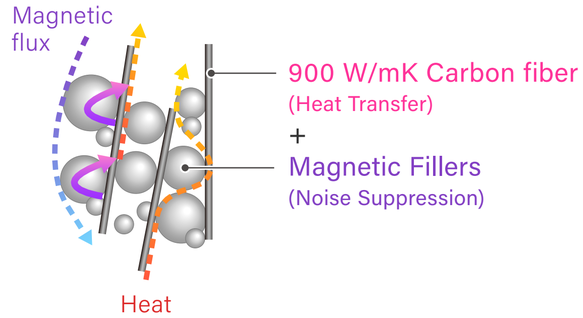


Mechanism

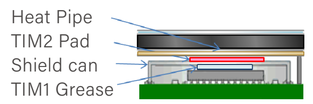
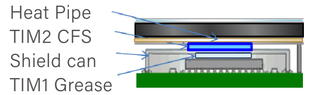
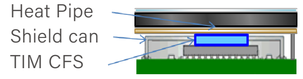
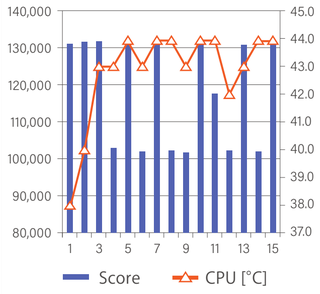
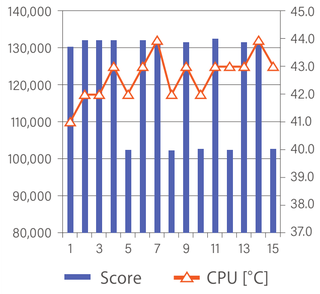
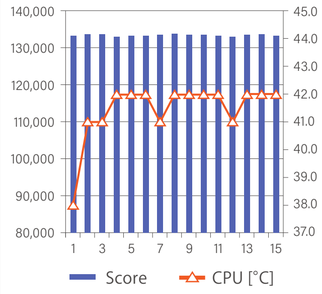
EMC solutions by single pad

Carbon fiber works for :
- Heat flow
- EMI shielding

Magnetic filler works for :
- Noise absorption



Effects of EMI shielding

Shield can	Covering the whole area	Covering the whole area	Place TIM in the opening at the top of the shield can
Heat radiating material	TIM1: 1W/mK Grease TIM2: 3W/mK Pad	TIM1: 1W/mK Grease TIM2: 20W/mK Pad	TIM2: 20W/mK+EMI Pad
Sample			
CPU Performance	Poor overall performance 	Low heat radiation caused by many contact surfaces. 	High heat rediation, Low thermal resistance 

Specifications

Item name	Thermal conductivity*1	Hardness*2	Thickness*3 *4	Resin binder	Flame retardance
	W/m・K	Shore OO	mm		
Noise Suppression EX10000K3 Under-development	20	40 - 60	0.5 - 3.0	Silicone	-

*1：Value shown does not include influences caused by the interfacial thermal resistance. Thermal resistance is calculated based on the following formula.

$$R_{di} = \frac{di}{K_{bulk}} + R_{surface}$$

R_{di} ：Thermal resistance with different thickness [Km^2/W]
di ：Each sheet thickness [m]
K_{bulk} ：Bulk thermal conductivity [W/m・K]
$R_{surface}$ ：Thermal contact resistance [Km^2/W]

*2：Hardness is measured by stacking the sheets to thickness of 10mm and over.
*3：Represented is the thickness of the thermal conductive sheet, excluding release liner.
*4：Customized thickness and product size will be available upon request.
*5：Calculated from the thermal resistance.

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