

BANDO High Thermal Conductive Sheet "HEATEX"

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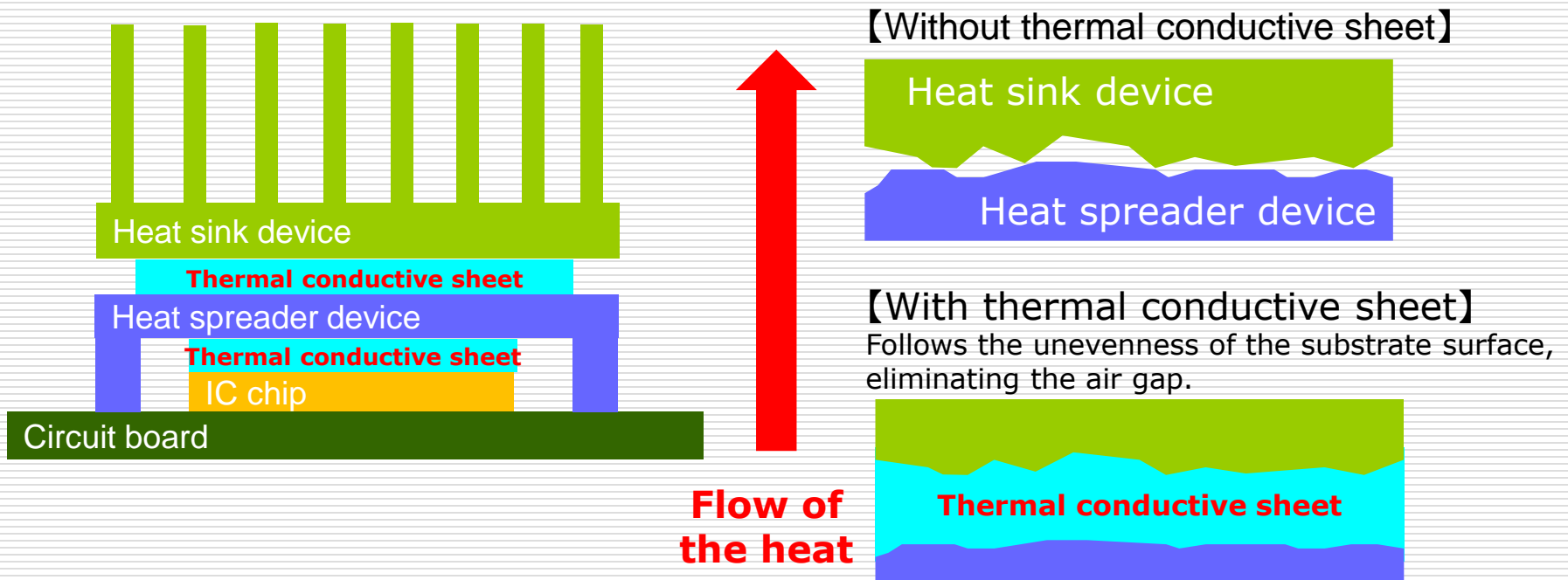
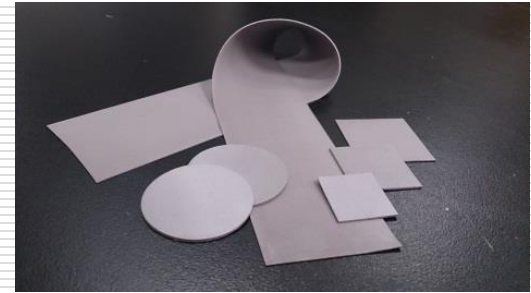
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What is BANDO High Thermal Conductive Sheet?

BANDO High Thermal Conductive Sheet is a rubber sheet which can transfer a large amount of heat generated from an electronic device quickly to a heat dissipation member.



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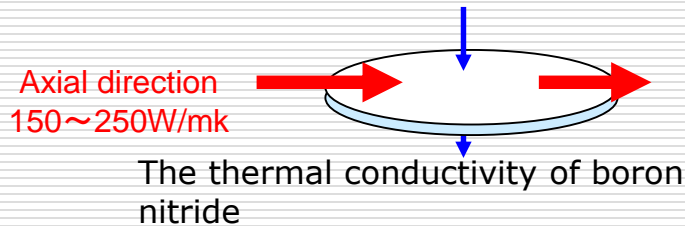
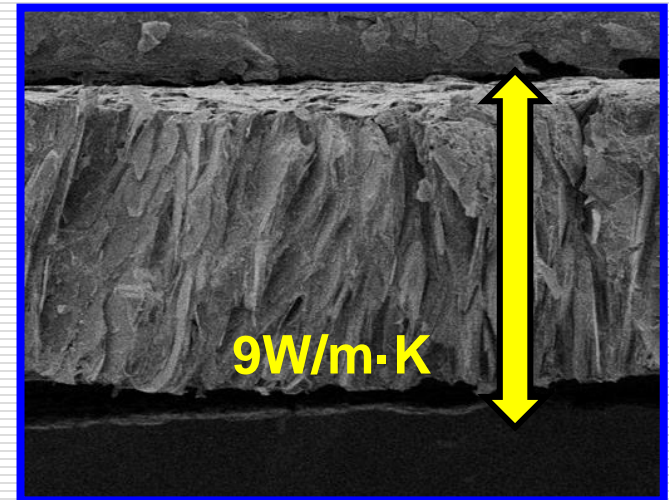
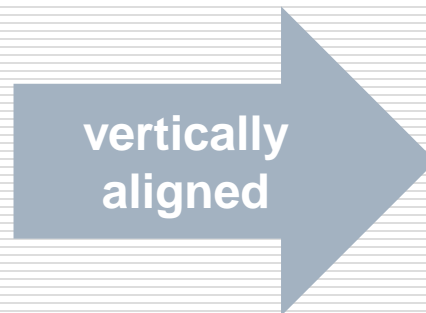
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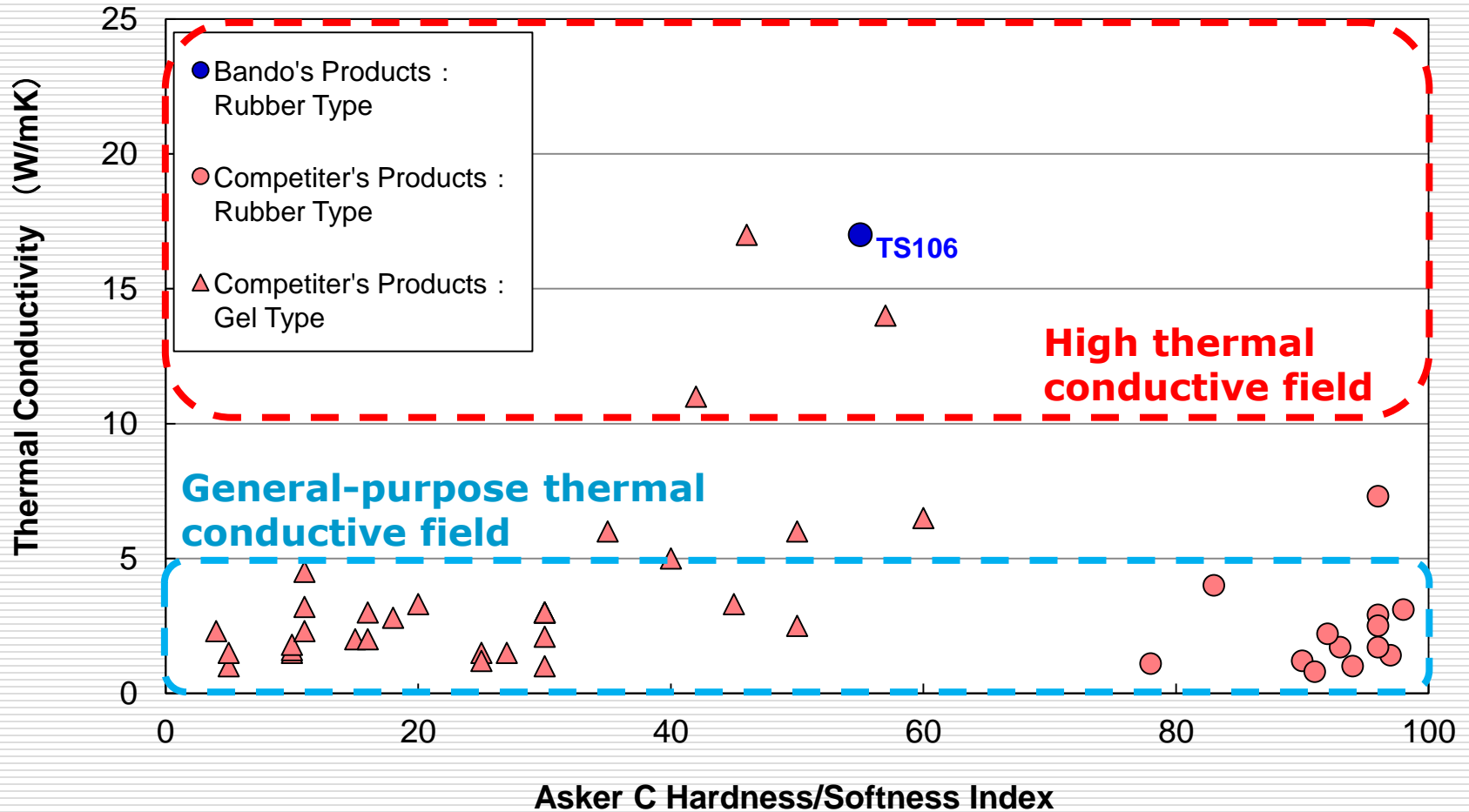
BANDO High Thermal Conductive Sheet Feature

We vertically aligned the heat transfer fillers, which have an anisotropic thermal conductivity in the sheet thickness direction. This allows our products to have the highest thermal conductivity on the market.

Insulation filler



Bando High Thermal Conductive Sheet to the Competitor's Products Comparison



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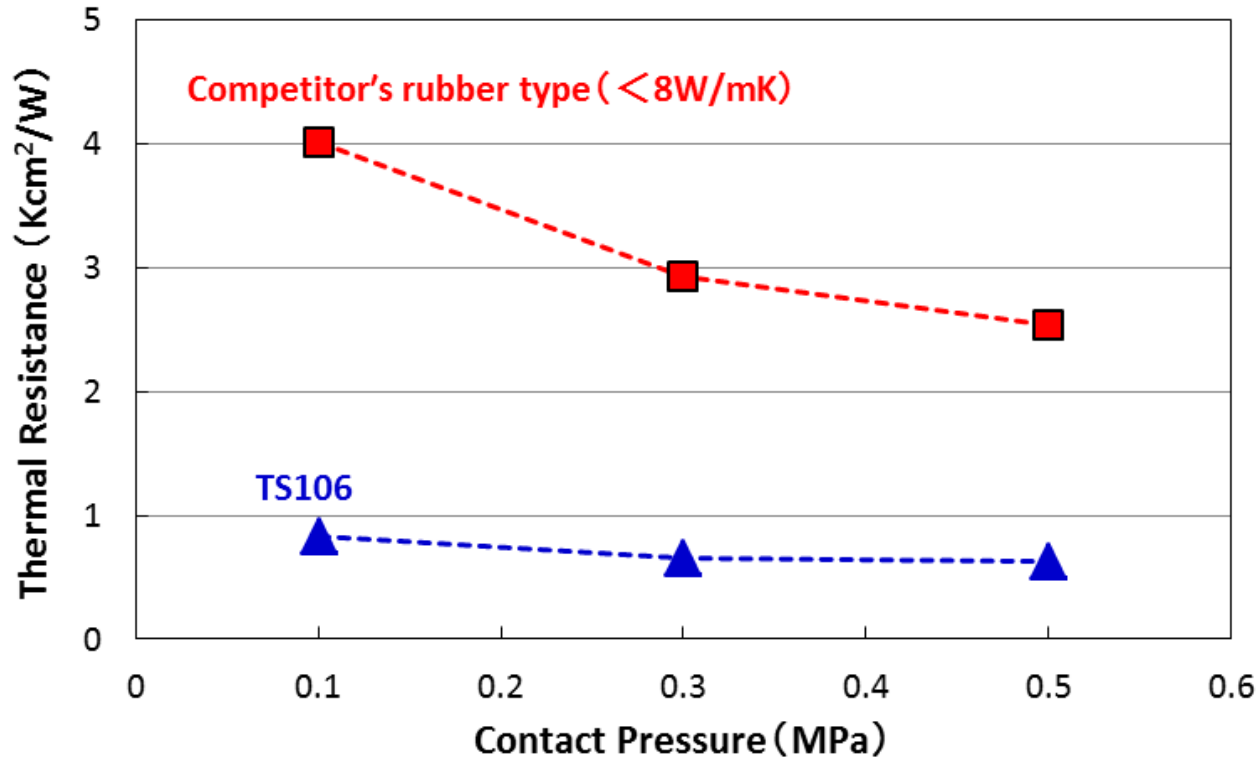
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to the Competitor's Products Comparison

Measurement method : Steady state method based on ASTM D5470,
Device : TIM tester (model1300)



Bando High Thermal Conductive Sheet shows lower thermal resistance than the competitor's rubber type.

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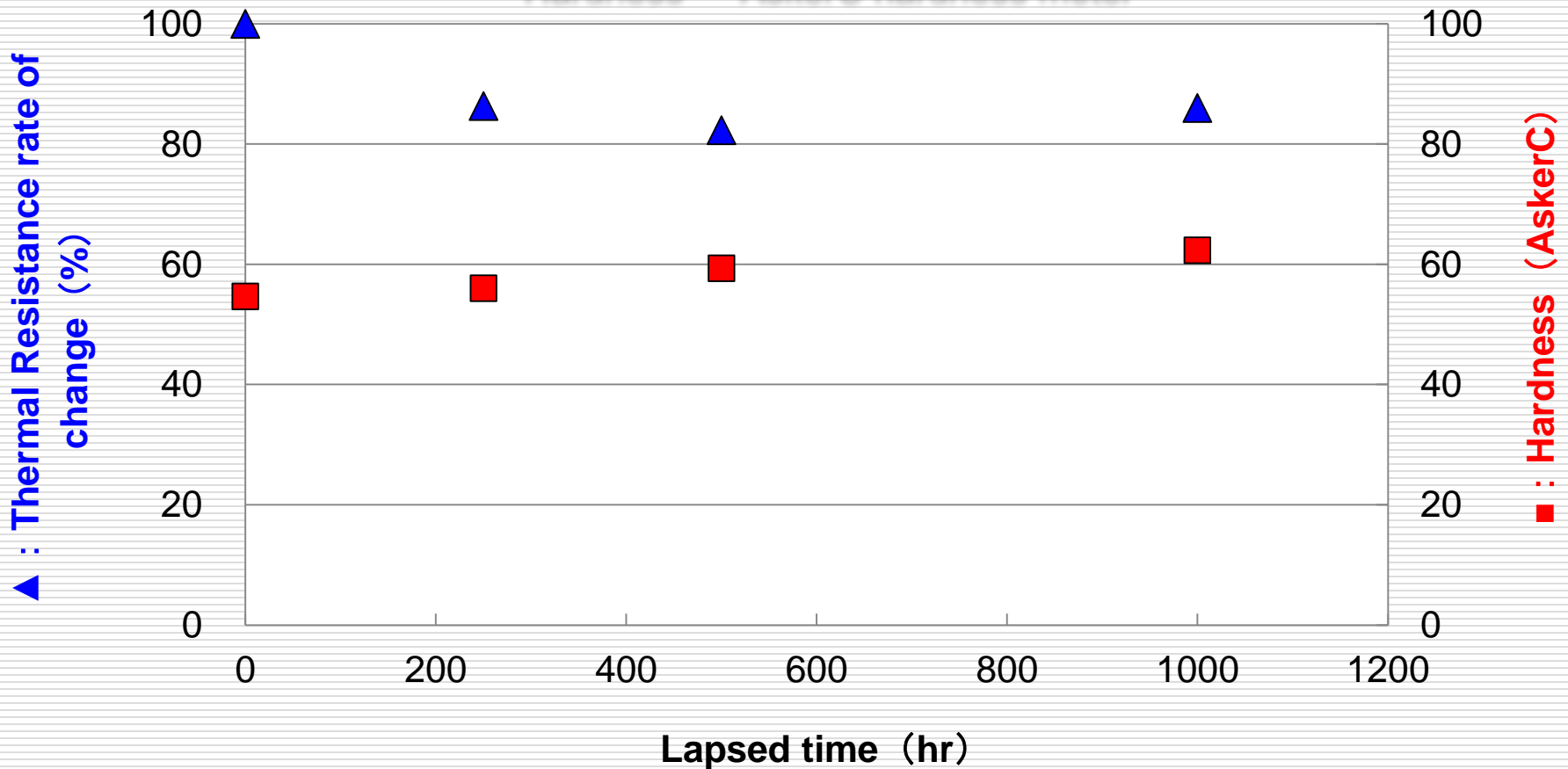
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Heat reliability at 180°C

Thermal Resistance ·· Device : TIM tester (model1300), Contact pressure : 0.5MPa

Hardness ·· AskerC hardness meter



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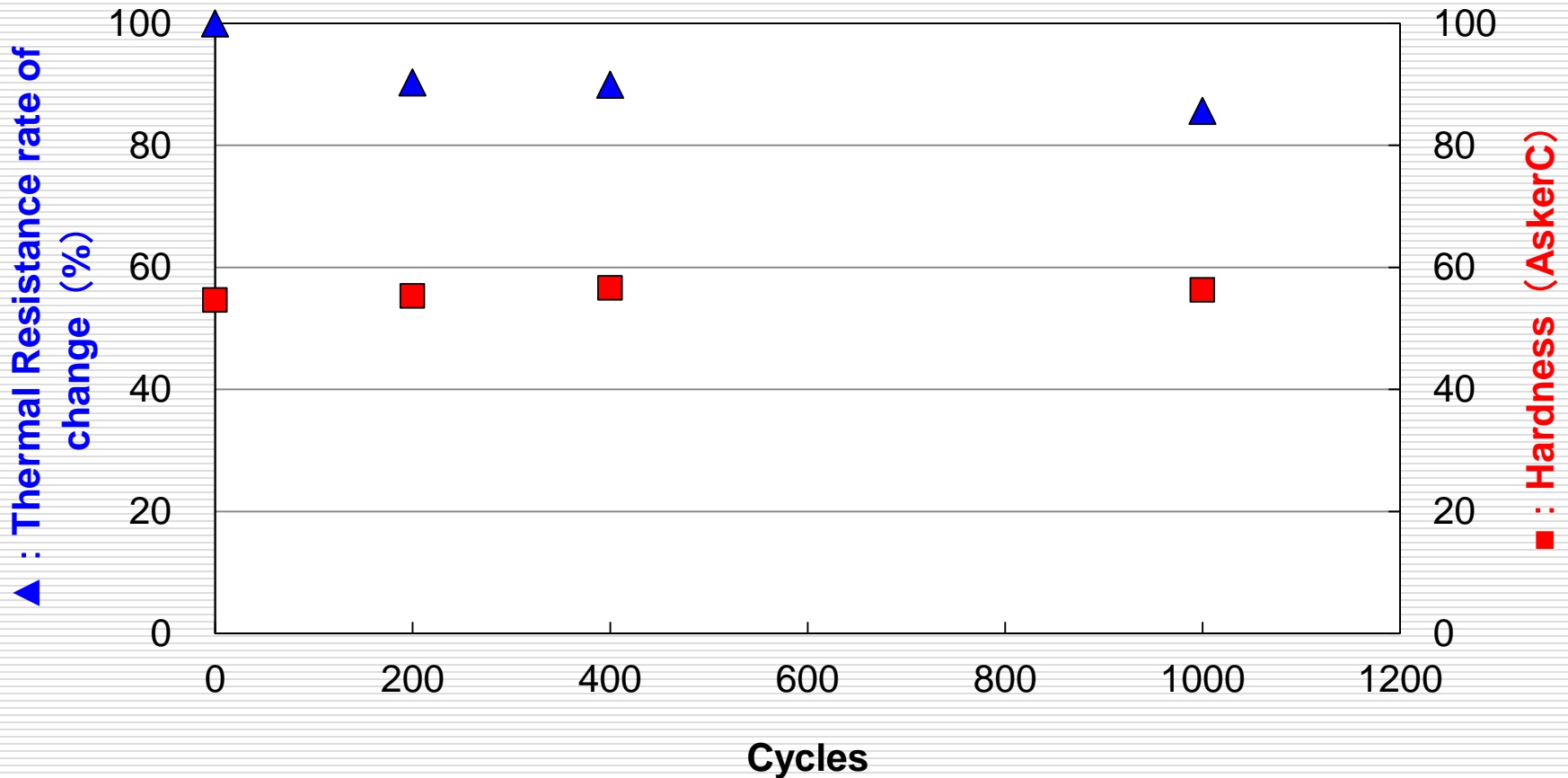
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Heat cycle reliability (-40°C/125°C)

Thermal Resistance ·· Device: TIM tester (model1300), Contact pressure: 0.5MPa
Hardness ·· AskerC hardness meter



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BANDO高熱伝導シートHEATEX® ～ 絶縁タイプ

		単位	評価基準	TS103			TS107			TS121(開発品)			
一般特性	General properties												
補強層	Reinforcement layer	-	-	なし			なし			なし			
表面粘着度	Inherent Surface Tack (1-/2- sided)	-	-	なし			なし			なし			
厚さ	Thickness	mm	-	0.3	0.5	1	0.3	0.5	1	0.3	0.5	1	
密度	Density	g/cm ³	JIS K 6220	1.6			1.6			1.6			
硬さ	Hardness	-	AskerC	70			55			30			
連続使用可能温度	Continuous use temp.	°C	-	-40～150			-40～150			-40～150			
		°F	-	-40～302			-40～302			-40～302			
圧縮率	Compression Ratio	%	試験片 厚み1mm Φ33mm	0.3MPa	3			4			18		
				0.5MPa	5			11			40		
				1.0MPa	19			35			70		
電気特性	Electrical properties												
体積抵抗率	Volume resistivity	Ω・cm	JIS K 6911	> 10 ¹³			> 10 ¹³			> 10 ¹³			
比誘電率	Dielectric constant(ε _r)	-	JIS C 2138	1MHz	3.5			3.5			3.5		
				2MHz									
誘電正接	Dielectric dissipation factor(tanδ)	-	JIS C 2138	1MHz	<0.001			<0.001			<0.001		
				2MHz									
絶縁破壊電圧	Dielectric breakdown voltage	kV/mm	試験片厚み1mm 1kV/s昇圧, 空气中	> 20			> 20			> 20			
熱特性	Thermal properties												
熱伝導率	Thermal conductivity	W/m・K	ASTM D5470	9			9			6.5			
熱抵抗 25°C/0.5MPa	Thermal resistance 77°F/72.5psi	Kcm ² /W	ASTM D5470	0.4	0.6	1.1	0.4	0.6	1.1	0.5	0.7	1.3	
難燃特性	Flame retardancy												
難燃性	Flame retardance	-	UL94	V-0相当			V-0相当			V-0相当			
その他の特性	Other properties												
低分子シロキサン量	Low-molecular-weight siloxane content	ppm	ΣD4-D10	<300			<300			<100			

表中の値は製品規格値ではなく、代表値となります。仕様に関しては予告なく変更する場合があります。

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BANDO高熱伝導シートHEATEX® ～ 導電タイプ

		単位	評価基準	TS211		
一般特性	General properties					
補強層	Reinforcement layer	-	-	なし		
表面粘着度	Inherent Surface Tack (1-/2- sided)	-	-	なし		
厚さ	Thickness	mm	-	0.3	0.5	1
密度	Density	g/cm ³	JIS K 6220	1.6		
硬さ	Hardness	-	TypeE	50		
連続使用可能温度	Continuous use temp.	℃	-	-40～150		
		℉	-	-40～302		
圧縮率	Compression Ratio	%	試験片 厚み1mm Φ33mm	0.3MPa	3	
				0.5MPa	9	
				1.0MPa	37	
熱特性	Thermal properties					
熱伝導率	Thermal conductivity	W/m・K	ISO22007-3	-		
			ASTM D5470	17		
熱抵抗 25℃/0.5MPa	Thermal resistance 77℉/72.5psi	Kcm ² /W	ASTM D5470	0.3	0.4	TBD
難燃特性	Flame retardancy					
難燃性	Flame retardance	-	UL94	V-1相当		
その他の特性	Other properties					
低分子シロキサン量	Low-molecular-weight siloxane content	ppm	ΣD4-D10	<100		

表中の値は製品規格値ではなく、代表値となります。仕様に関しては予告なく変更する場合があります。

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Thank you for your attention

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