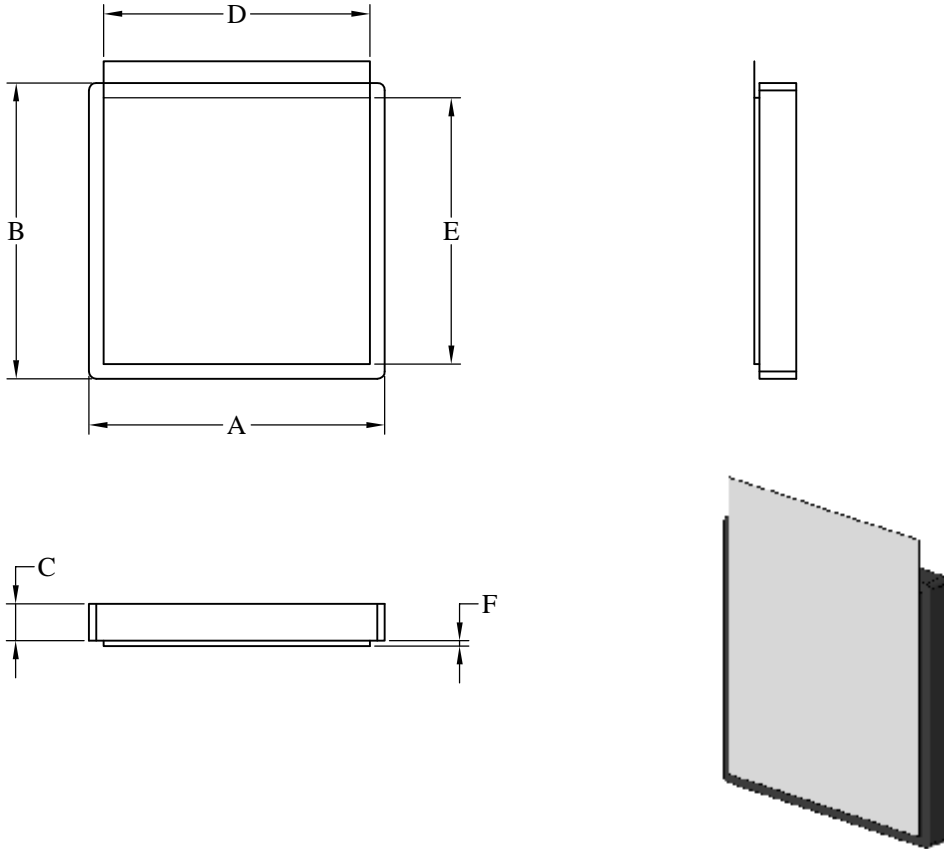


SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	Ceramic Heat Sink	ABC'S DWG NO.	MPS□□□□□□BTF-□□□		
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I . Configuration :



* Products comply with RoHS' requirements

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REF. :

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II . dimensions and data sheet :

DWG. No.	ceramic heat sink <small>Unit : mm</small>			thermal tape <small>Unit : mm</small>			Weight (ref.) <small>Unit : g</small>
	(Length, width, thickness & wave height)			(Length, width & thickness)			
	A	B	C	D	E	F	
MPS101020BTF-□□□	10.0±0.3	10.0±0.3	2.0±0.2	8.5±0.5	8.5±0.5	0.25±0.07	0.40
MPS101030BTF-□□□	10.0±0.3	10.0±0.3	3.0±0.2	8.5±0.5	8.5±0.5	0.25±0.07	0.60
MPS101050BTF-□□□	10.0±0.3	10.0±0.3	5.0±0.2	8.5±0.5	8.5±0.5	0.25±0.07	0.95
MPS121225BTF-□□□	12.0±0.3	12.0±0.3	2.5±0.2	10.5±0.5	10.5±0.5	0.25±0.07	0.72
MPS121230BTF-□□□	12.0±0.3	12.0±0.3	3.0±0.2	10.5±0.5	10.5±0.5	0.25±0.07	0.85
MPS121250BTF-□□□	12.0±0.3	12.0±0.3	5.0±0.2	10.5±0.5	10.5±0.5	0.25±0.07	1.38
MPS131315BTF-□□□	13.0±0.3	13.0±0.3	1.5±0.2	11.5±0.5	11.5±0.5	0.25±0.07	0.45
MPS131350BTF-□□□	13.0±0.3	13.0±0.3	5.0±0.2	11.5±0.5	11.5±0.5	0.25±0.07	1.50
MPS151020BTF-□□□	15.0±0.3	10.0±0.3	2.0±0.2	13.0±0.5	8.0±0.5	0.25±0.07	0.65
MPS151510BTF-□□□	15.0±0.3	15.0±0.3	1.0±0.2	13.5±0.5	13.5±0.5	0.25±0.07	0.61
MPS151515BTF-□□□	15.0±0.3	15.0±0.3	1.5±0.2	13.5±0.5	13.5±0.5	0.25±0.07	0.75
MPS151520BTF-□□□	15.0±0.3	15.0±0.3	2.0±0.2	13.5±0.5	13.5±0.5	0.25±0.07	0.95
MPS151525BTF-□□□	15.0±0.3	15.0±0.3	2.5±0.2	13.5±0.5	13.5±0.5	0.25±0.07	1.15
MPS181220BTF-□□□	18.0±0.3	12.0±0.3	2.0±0.2	16.0±0.5	10.0±0.5	0.25±0.07	0.82
MPS201525BTF-□□□	20.0±0.5	15.0±0.3	2.5±0.2	18.0±0.5	14.0±0.5	0.25±0.07	1.50
MPS202020BTF-□□□	20.0±0.5	20.0±0.5	2.0±0.2	18.0±0.5	18.0±0.5	0.25±0.07	1.50
MPS202025BTF-□□□	20.0±0.5	20.0±0.5	2.5±0.2	18.0±0.5	18.0±0.5	0.25±0.07	1.86
MPS202050BTF-□□□	20.0±0.5	20.0±0.5	5.0±0.2	18.0±0.5	18.0±0.5	0.25±0.07	3.66
MPS222225BTF-□□□	22.0±0.5	22.0±0.5	2.5±0.2	20.0±0.5	20.0±0.5	0.25±0.07	2.30
MPS252525BTF-□□□	25.0±0.5	25.0±0.5	2.5±0.2	23.0±0.5	23.0±0.5	0.25±0.07	2.50
MPS272725BTF-□□□	27.0±0.5	27.0±0.5	2.5±0.2	25.0±0.5	25.0±0.5	0.25±0.07	3.30
MPS281750BTF-□□□	28.0±0.5	17.0±0.5	5.0±0.2	26.0±0.5	15.0±0.5	0.25±0.07	4.20
MPS303025BTF-□□□	30.0±0.5	30.0±0.5	2.5±0.2	27.5±0.5	27.5±0.5	0.25±0.07	4.02
MPS404025BTF-□□□	40.0±0.5	40.0±0.5	2.5±0.2	37.0±0.5	37.0±0.5	0.25±0.07	8.05

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III . Ceramic Heat Sink Technical data sheet :

Main features	Item	Unit	Value	Method
Product			Ceramic Heat Sink with Micro-Pores Structure	
Product code			MP-SIC	
Color			Gray	
Specific gravity		g/cm ³	2.7	CNS619
Porosity		%	30	CNS619
Water absorption		%	15.77	CNS619
Mechanical properties	Mohs' hardness	N/mm ²	5~6	DIN EN101-1992
	Flexural strength	kgf/cm ²	47.5	CNS12701(1990)
	Bulk density	g/cm ³	1.6~2.0	CNS2893(1969)
	Resistance insulation	Ω	20*10 ⁶	ASTM D257
	Thermal conductivity	W/m-k	5~6	
	Maximum operating temperature	°C	<500	
	Linear thermal expansion coefficient	10 ⁻⁶	4.13	RT~300°C
Chemical composition	Main composition		SiC	80%↑
	Composition		Al ₂ O ₃	10%↑
	Composition		SiO ₂	4%↑
	Composition		Binding agents	5%↑

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IV . Thermal tape specification :

Part number	TT-025	Test method	Remark	
Color	White	...		
Adhesive Type	Acrylic Polymer	...		
Carrier	Fiber Glass	...		
Thickness(mm)	Tape	0.25	ASTM D3652	
	Liner	0.13		
Density	(g/cm ²)	1.42	...	
Hardness	(Shore A)	45	ASTM D2240	
Thermal conductivity	(W/m-k)	0.8	ASTM D5470	
Operation temp.	(°C)	-40~110	...	
Insulation strength	(Volt/mm)	6500	ASTM D149	
Tensile strength	(lbs./in)	180	ASTM D3759	
Elongation	(%)	5	ASTM D3759	
Static shear adhesion	(1kg/0.5in ²)	22°C PASS 70°C PASS	ASTM D3654 10,000 mins	
Adhesion to Stainless steel	(g/25.4mm)	15 min RT	1991	ASTM D3330 180 degree 0.05mm Al foil 22°C. 50% RH
		72 hr RT	2167	
Adhesion to ABC		15 min RT	1536	
		72 hr RT	1755	
Adhesion to PC		15 min RT	1840	
		72 hr RT	1950	
Adhesion to PP		15 min RT	1400	
		72 hr RT	1650	
Shelf Life	12 months from date receipt by customer when stored in original carton at 22°C and 50% relative humidity			

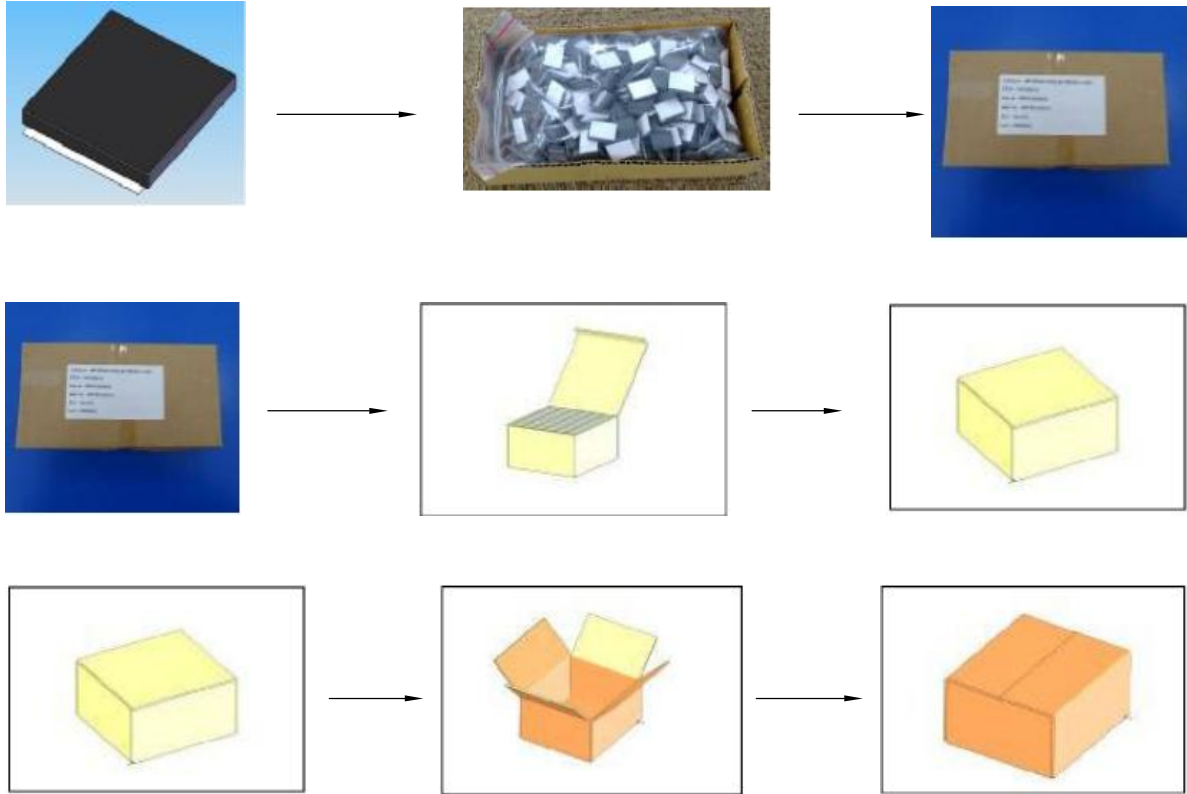
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SPECIFICATION FOR APPROVAL

REF. :

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V-I . Packaging information (Box) :



Q'TY & G.W.Per Packaging

DWG NO.	Inner : Box		Outer : Carton		
	Q'TY(pcs)	G.W.(g)	Q'TY(pcs)	G.W.(kg)	Size (cm)
MPS101020BTF	500	220	16,000	9.00	37.5x37.0x21.0
MPS101030BTF	300	200	9,600	8.50	37.5x37.0x21.0
MPS101050BTF	200	210	6,400	8.50	37.5x37.0x21.0
MPS121225BTF	150	130	4,800	6.00	37.5x37.0x21.0
MPS121230BTF	150	150	4,800	6.50	37.5x37.0x21.0
MPS121250BTF	150	230	4,800	9.00	37.5x37.0x21.0
MPS131315BTF	200	110	6,400	5.50	37.5x37.0x21.0
MPS131350BTF	150	250	4,800	10.00	37.5x37.0x21.0
MPS151020BTF	300	220	9,600	8.50	37.5x37.0x21.0

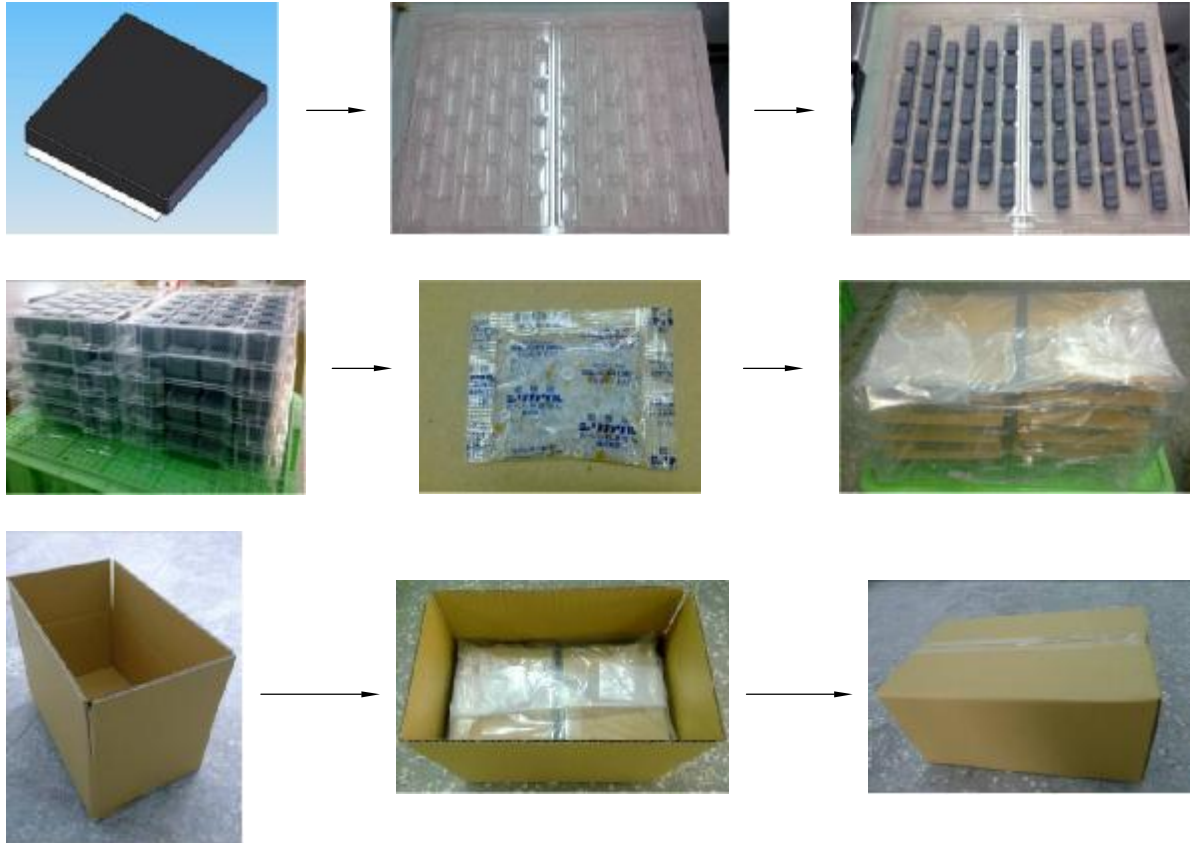
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SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	Ceramic Heat Sink	ABC'S DWG NO.	MPS□□□□□□BTF-□□□		
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V-II . Packaging information (Tray) :



Q'TY & G.W.Per Packaging

DWG NO.	Inner : Tary		Outer : Carton		
	Q'TY(pcs)	G.W.(g)	Q'TY(pcs)	G.W.(kg)	Size (cm)
MPS151510BTF	1,620	1,100	8,100	7.00	52.0x32.0x14.0
MPS151515BTF	1,242	1,050	6,210	7.00	52.0x32.0x14.0
MPS151520BTF	918	1,000	4,590	6.50	52.0x32.0x14.0
MPS151525BTF	810	1,050	4,050	7.00	52.0x32.0x14.0
MPS181220BTF	918	900	4,590	6.00	52.0x32.0x14.0
MPS201525BTF	810	1,400	4,050	8.00	52.0x32.0x14.0
MPS202020BTF	918	1,500	4,590	9.00	52.0x32.0x14.0
MPS202025BTF	810	1,600	4,050	9.50	52.0x32.0x14.0
MPS202050BTF	432	1,700	2,160	10.00	52.0x32.0x14.0
MPS222225BTF	540	1,350	5,400	15.00	56.8x33.5x12.0
MPS252525BTF	300	850	3,600	11.00	52.5x31.0x23.5
MPS272725BTF	300	1,100	3,600	14.00	52.5x31.0x23.5
MPS281750BTF	216	950	1,080	6.00	52.0x32.0x14.0
MPS303025BTF	300	1,300	3,600	16.50	52.5x31.0x23.5
MPS404025BTF	180	1,600	1,800	16.50	52.5x31.0x23.5

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REF. :

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V . Criteria of product inspection :

(1) Accepted Product



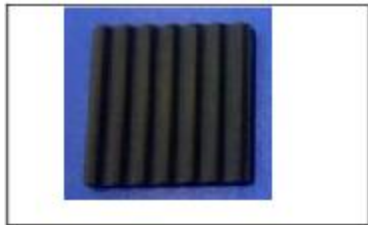
Appearance Description : Crack
Limitation : Less than 2 mm



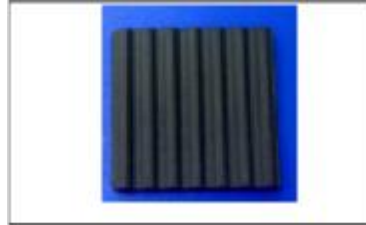
Appearance Description : Burr
Limitation : Less than 2 mm



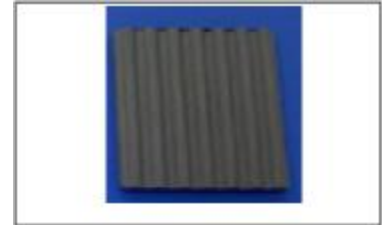
Appearance Description : Hole
Limitation : Less than 2 mm



Appearance Description : Deep Gray



Appearance Description : Gray

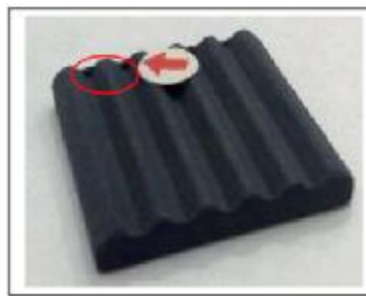


Appearance Description : Light Gray

(2) Rejected Product



Appearance Description : Crack
Failure : More than 2 mm



Appearance Description : Burr
Failure : More than 2 mm



Appearance Description : Hole
Failure : more than 2 mm

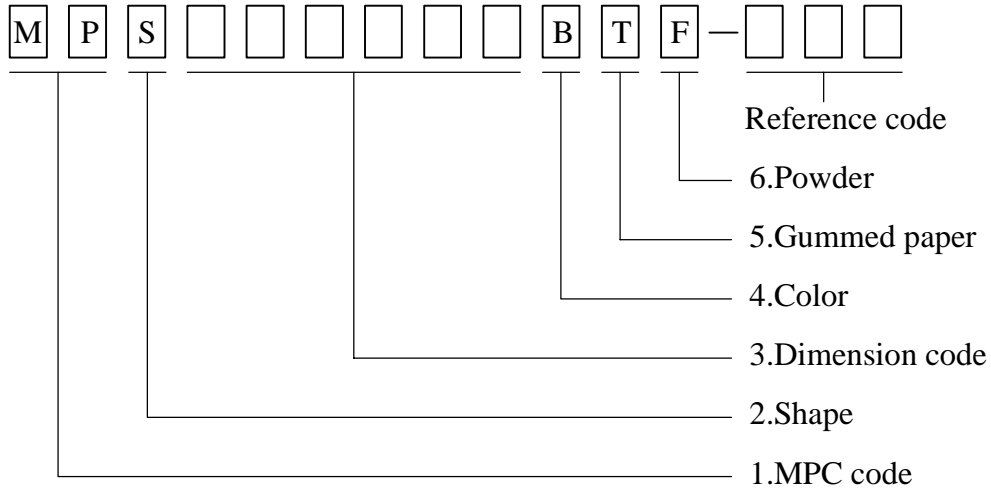
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VII . Drawing number expression :



- * 1- MP : Heat sink
- * 2- S : flat 、 W : wave
- * 3- Long, wide, thick
- * 4- B : black
- * 5- A : no thermal tape 、 T : Thermal tape
- * 6- F : SiC spray granulation