

Bakelite Plates

Paper Type, Cloth Type



Bakelite excels in insulation and heat resistance. Paper based materials are less expensive, and cloth based materials are stronger. For Finishing, Circular Sawing and Milling are available.

* For Details of color samples and features, see P951

Standard Type

Properties P955 RoHS

Type	Material	Color	Operating Ambient Temperature
BLA	Paper-based Bakelite	Natural Color	-50~100°C
BLBA	Paper-based Bakelite	Black	-50~100°C
BLSA	Cloth-based Bakelite	Natural Color	-50~100°C

Finish	4 Sides		Upper-lower Surface	
	Drilling Method	Finish Symbol	Drilling Method	Finish Symbol
Circular Sawing (-)	Circular Sawing	✓	Material	~
	Circular Sawing	✓	Material	~
4-side Milling (4F)	Milling	✓	Material	~
6-surface Milling (6F)	Milling	✓	Milling	✓
Upper-lower Surface Milling (2F)	Circular Sawing	✓	Milling	✓

Dimension Tolerance of A and B

Unit: mm	A, B Dimension Tolerance
~99	±0.5
100~250	±0.75
251~	±1.0

T Dimension Tolerance, Rate of Camber and Torsion

T	T Dimension Tolerance		Rates of Camber and Torsion per 1,000mm
	Paper Type	Cloth Type	
2	±0.15	±0.25	3.0% or Less
3	±0.20	±0.30	1.2% or Less
4	±0.25	±0.35	1.0% or Less
5	±0.30	±0.40	0.6% or Less
6	±0.35	±0.50	0.5% or Less
8	±0.40	±0.55	0.5% or Less
10	±0.45	±0.65	0.4% or Less
12	±0.50	±0.75	0.4% or Less
15	±0.55	±0.80	0.2% or Less
20	±0.70	±1.10	0.2% or Less

Precision Guarantee

Finish	Width Parallelism	
	per 100mm	Perpendicularity of Reference Plane
4-side Milling (4F)	0.1	0.1
6-surface Milling (6F)		

Reference plane stickers are attached to 4-side milled plates.

Material: Bakelite (JIS PL-PEM)

Standard Type		Part Number		A	B	T	
Type	Finish Selection	T Dimension Tolerance	A, B Dimension Tolerance				
BLA (Paper-based Bakelite, Natural Color) BLBA (Paper-based Bakelite, Black) BLSA (Cloth-based Bakelite, Natural Color)	Circular Sawing		Not available	1mm Increment	20~800	20~600	2, 3, 4, 5, 6, 8, 10, 12, 15, 20
	Guaranteed Perpendicularity of Circular Saw Cuts (NT)		Not available	0.5mm Increment	20~500	20~400	2, 3, 4, 5, 6, 8, 10, 12, 15, 20
	NT	Q	0~+0.3	T2~10	0~+0.4		
		N	±0.2	T12~20	±0.3		
		M	-0.3~0		-0.4~0		
	4-side Milling (4F)		Not available	0.1mm Increment	10~400	10~200	5, 6, 8, 10, 12, 15, 20
	4F	Q	0~+0.2				
		N	±0.1				
		M	-0.2~0				
	6-surface Milling (6F)		Not available	0.1mm Increment	10~400	10~200	5~19
	6F	Q	0~+0.2				
		N	±0.1				
	M	-0.2~0					
Upper-lower Surface Milling (2F)		Not available	1mm Increment	20~400	20~250	5~19	
2F	Q	0~+0.2					
	N	±0.1					
	M	-0.2~0					

Alterations

Part Number - A - B - T - (CRA ... etc.)

BLA - 300 - 200 - 15 - CRA10

BLBANTQ - 200.5 - 100.5 - 10

BLSA4FN - 150.5 - 100.3 - 15

BLA6FMM - 100.3 - 90.5 - 10.5

BLA2FN - 80 - 50 - 5

Alterations

Corner Radius	Corner Cut
Code CRA, CRB, CRC, CRD	Code CCA, CCB, CCC, CCD
Spec. Adds radius to any corner. R = 5mm Increment. 10 ≤ A(B) - R(2R). 5 ≤ CRA, CRB, CRC, CRD ≤ 100. (Ex.) Adds R10 at the corner of A and C. CRA10-CRC10. Not applicable to 4-side milling or 6-surface milling.	Spec. Cuts any corners. 5 ≤ Corner Cut ≤ 50. 5mm Increment. (Ex.) When the corners of A and D are cut by C5. CCA5-CCD5. Not applicable to 4-side milling or 6-surface milling.

Pre-drilled Type

Properties P955 RoHS

Type	Material	Color	Operating Ambient Temperature
BLA	Paper-based Bakelite	Natural Color	-50~100°C
BLBA	Paper-based Bakelite	Black	-50~100°C
BLSA	Cloth-based Bakelite	Natural Color	-50~100°C

Dimension Tolerance of A and B	A, B Dimension Tolerance		T Dimension Tolerance, Rate of Camber and Torsion
	Unit: mm	Tolerance	
~99	±0.5		2 ±0.15 ±0.25 3.0% or Less
100~250	±0.75		3 ±0.20 ±0.30 1.2% or Less
251~	±1.0		4 ±0.25 ±0.35 1.0% or Less
			5 ±0.30 ±0.40 0.6% or Less
			6 ±0.35 ±0.50 0.5% or Less
			8 ±0.40 ±0.55 0.5% or Less
			10 ±0.45 ±0.65 0.4% or Less
			12 ±0.50 ±0.75 0.4% or Less
			15 ±0.55 ±0.80 0.2% or Less
			20 ±0.70 ±1.10 0.2% or Less

Hole Machining Details

N (Through Hole) Z (Counterbore Hole) M (Threaded Insert) Table 1M (Threaded Insert) Details

Ordering Code (Ex.) M4-L6
L ≤ T-1
For details of threaded insert HLTS, see P271

Pre-drilled Type		Part Number		A	B	T	F	G	
Type	Dimension Tolerance	Number of Holes							
BLA (Paper-based Bakelite, Natural Color) BLBA (Paper-based Bakelite, Black) BLSA (Cloth-based Bakelite, Natural Color)	Not available	Circular Sawing	2H (Horizontal) 2HL (Vertical) 4H 6H	1mm Increment	20~800	20~600	2, 3, 4, 5, 6, 8, 10, 12, 15, 20 (Selectable)	6~791.5 (2H, 4H) 4.5~595.5 (2HL) 6~395.5 (6H)	4.5~595.5 (2H) 6~591.5 (2HL, 4H, 6H)
		Upper-lower Surface Milling (2F)	2H (Horizontal) 2HL (Vertical) 4H 6H	1mm Increment	20~400	20~250	5~19 (0.1mm Increment)	6~391.5 (2H, 4H) 4.5~395.5 (2HL) 6~195.5 (6H)	4.5~245.5 (2H) 6~241.5 (2HL, 4H, 6H)
		2FQ 0~+0.2 2FN ±0.1 2FM -0.2~0							

T Dimension	Pre-drilled Hole Nominal Dia.			
	N (Through)	Z (Counterbore Hole)	M (Threaded Insert)	L (Insert Length)
2~4	3	-	-	-
5	4	-	3 4	-
6, 7	5	3	3 4 5 6	Select from Table 1
8, 9	6	3 4 5	3 4 5 6 8	
10~14	8	4 5 6	3 4 5 6 8 10	
15~20	10	4 5 6 8	3 4 5 6 8 10	

Alterations

Part Number - A - B - T - F - G - Screw Nominal Dia. - L

BLA4H - 400 - 325 - 15 - F300 - G200 - Z6 - L7.5

BLA4H - 500 - 300 - 10 - F300 - G200 - M5 - L7.5

Dimension F Specification Range: For 2H and 4H, $d(d_1)+2.5 \leq F \leq A-d(d_1)-5$; for 2HL, $d(d_1)/2+2.5 \leq F \leq A-d(d_1)/2-2.5$; for 6H, $d(d_1)+2.5 \leq F \leq (A-d(d_1)-5)/2$.

Dimension G Specification Range: For 2H, $d(d_1)/2+2.5 \leq G \leq B-d(d_1)/2-2.5$; for 2HL, 4H and 6H, $d(d_1)+2.5 \leq G \leq B-d(d_1)-5$.

(d for through hole and threaded insert, d1 for counterbore)

For Pre-drilled Type, select N (through hole) or Z (counterbore hole); for Threaded Insert Type, select M (threaded insert) or L (insertion length).

Alterations

Hole Position from Left	Hole Position from Bottom
Code XC	Code YC
Spec. XC = 0.5mm Increment. (2H, 4H Type) $d(d_1)/2+2.5 \leq XC \leq A-F-d(d_1)/2-2.5$. (6H Type) $d(d_1)/2+2.5 \leq XC \leq A-2F-d(d_1)/2-2.5$.	Spec. YC = 0.5mm Increment. $d(d_1)/2+2.5 \leq YC \leq B-d(d_1)/2-2.5$. Not available for 2H.