

VT-42A

UL Approval: E214381 Version: Rev. A0

技术资料表

VT-42A 基板

概述

- 双氰胺固化体系
- 标准FR-4 (Tg135)
- UV 遮蔽

应用

电脑、通讯设备、
电视机、VCR、
游戏机等

产品规格

Available Products List

Thickness Overall (mm)	Class L Tolerance (mil)	Thickness Core (mil)
1.0mm 1/1	+/- 3.9	36
1.0mm H/H	+/- 3.9	36
1.2mm 1/1	+/- 5.1	45
1.2mm H/H	+/- 5.1	45
1.5mm 1/1	+/- 5.1	57
1.5mm H/H	+/- 5.1	58
1.5mm 1/0	+/- 5.1	58

- 不可使用在对Anti-CAF 有特别要求的产品领域。

储存条件及保存期限

		Laminate
Storage Condition	Temperature	Room
	Relative Humidity	/
Shelf Life		24 Months (airproof)

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技术资料表

特性表 - IPC-4101C Slash Sheet(s)/21

Properties	Test Method	Units	Specification	Typical Value
Thermal Properties				
Glass Transition Temp. (Tg)				
DSC	IPC-TM-650 2.4.25	°C	110 minimum	135
Decomposition Temp. (Td) By TGA (at 5% weight loss)	ASTM D3850	°C	-	310
Time to Delamination---T260	IPC-TM-650 2.4.24.1	Minute	-	20
Time to Delamination---T288	IPC-TM-650 2.4.24.1	Minute	-	2
Thermal Stress @ 288°C	IPC-TM-650 2.4.13.1	Second	Pass 10s	300
Z-axis CTE				
Before Tg	IPC-TM-650 2.4.24	ppm/°C	-	50
After Tg	IPC-TM-650 2.4.24	ppm/°C	-	250
Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	-	3.75
MOT	UL 94	°C	-	130
Electrical Properties				
Dielectric Constant @ 1GHz	IPC-TM-650 2.5.5.9	-	5.4 maximum	4.2
Dissipation Factor @ 1GHz	IPC-TM-650 2.5.5.9	-	0.035 maximum	0.015
Volume Resistivity				
After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	10 ⁶ minimum	5*10 ⁸
E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	10 ³ minimum	5*10 ⁶
Surface Resistivity				
After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	10 ⁴ minimum	5*10 ⁷
E24/125	IPC-TM-650 2.5.17.1	MΩ	10 ³ minimum	5*10 ⁶
Electrical Strength	IPC-TM-650 2.5.6.2	Volt/mil (KV/mm)	762 (30) minimum	1200~1400 (54)
Dielectric Breakdown	IPC-TM-650 2.5.6	KV	40 minimum	60
Comparative Tracking Index (CTI)	ASTM D3638	Rating (Volt)	-	Class 3 (175~250)
Arc Resistance	IPC-TM-650 2.5.1	Second	60 minimum	240
Mechanical Properties				
Peel Strength (1oz)				
As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-	10~12 (1.7~2.0)
After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	9~12 (1.5~2.0)
Flexural Strength				
Warp	IPC-TM-650 2.4.4	Kpsi (MPa)	60 (415) minimum	87 (600)
Fill	IPC-TM-650 2.4.4	Kpsi (MPa)	50 (345) minimum	72 (500)
Physical Properties				
Moisture Absorption	IPC-TM-650 2.6.2.1	%	0.80 maximum	0.25
Flammability	UL-94	Rating	V0 minimum	V0

Note: 1)All test data provided are typical values and not intended to be specification values.
2)Standard VT-42A products can not meet Anti-CAF requirement.

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SPECIFICATION

Rigid Laminate

- 1 This scope specifies the glass reinforced laminates including the standards of size, appearance, properties, labeling and packaging.
- 2 The material designation is VT-42A
- 3 UL file: E214381 - Flame retardant UL94-V0
- 4 Specifications
 - 4.1 Appearance

Serial number	Defects	Standard
1	Pits and dents	No longer than 4mm, regardless of number.
2	Wrinkles	Not allowed.
3	Scratch	Any scratch resulting in substrate exposure is not allowed. The length of any scratches felt by gloves should not exceed 20cm. Scratches that can't be felt by gloves are not counted.
4	Oxidation	Black oxidations over the entire surface are not allowed, other, minor, oxidations will be accepted.
5	Dirt and foreign materials	Accept foreign materials except metal substance.
6	Weave exposure	Not allowed.
7	Voids/Resin starvation	Not allowed.

Remark: Defects within 0.50inch from the laminate edge shall be ignored.

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SPECIFICATION

4.2 Size

Form	Dimension Tolerance	Diagonal Tolerance	Test method
Sheet	+ 3 /-0 mm	≤3mm	IPC-TM-650
Panel	+ 2 /-1 mm	≤2mm	2.2.19.1

4.3 Thickness: Shall conform to IPC 4101D Class L

Thickness Overall (mm)	Class L Tolerance (mil)	Thickness Core (mil)
1.0mm 1/1	+/- 3.9	36
1.2mm 1/1	+/- 5.1	45
1.5mm 1/1	+/- 5.1	57
1.5mm H/H	+/- 5.1	58
1.5mm H/H	+/- 5.1	58

4.3.1 Bow and twist specification:

Double Sided ≤1.0%

Single Sided ≤1.5%

4.3.2 Test method for bow and twist IPC-TM-650 2.4.22.1

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SPECIFICATION

5.0 Properties Specification and test method [IPC-4101D Slash Sheet 21]

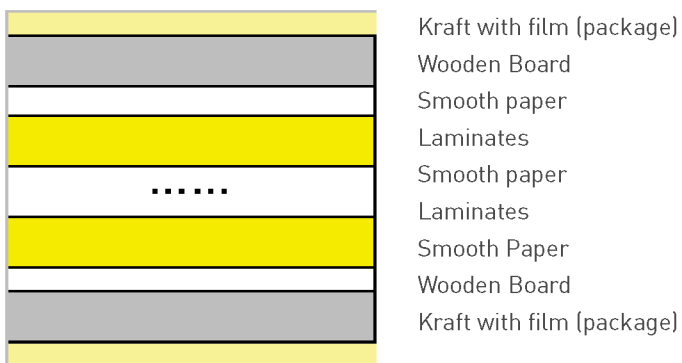
Properties		Test Method	Units	Specification
Glass Transition Temp. (Tg)	DSC	IPC-TM-650 2.4.25	°C	≥130
Thermal Stress	@ 288°C	IPC-TM-650 2.4.13.1	Second	Pass 10s
Peel Strength, after thermal stress	Hoz	IPC-TM-650 2.4.8	lb/in (N/mm)	≥4.57 (0.80)
	1oz	IPC-TM-650 2.4.8	lb/in (N/mm)	≥6.00 (1.05)
Flexural Strength	Warp	IPC-TM-650 2.4.4	Kpsi (MPa)	≥60 (415)
	Fill	IPC-TM-650 2.4.4	Kpsi (MPa)	≥50 (345)
Moisture Absorption		IPC-TM-650 2.6.2.1	%	≥0.80
Flammability		UL-94	Rating	V0

6.0 Shelf life and storage condition:

The shelf life is two years in unopened air proof packaging.

7.0 Packing

7.1 Packing diagram



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SPECIFICATION

7.2 Packing quantities

Thickness	Quantity	Unit
0.80mm <THK≤1.20mm	20	Sheets
0.20mm <THK≤2.48mm	15	Sheets
THK>2.48mm	10	Sheets

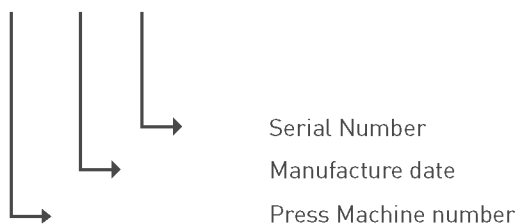
8.0 VT-42A is not for use in Anti-CAF application

9.0 Definition of Lot No

Lot No indicates the press number and date of production.

(For example)

PA -140228 -1



10.0 As a general release standard IPC-4101D is the referring document