

VT-4A Series

UL Approval: E214381 Version: Rev. B2

技术资料表

铝基板/ 散热半固化片

概述

- VT-44A / VT-44A PP: Thermal conductivity – 1.0W/mK, Ceramic Filled
- VT-4A1 / VT-4A1 PP: Thermal conductivity – 1.6W/mK, Ceramic Filled
- VT-4A2 / VT-4A2 PP: Thermal conductivity – 2.2W/mK, Ceramic Filled
- 优异的电性能和机械性能
- 阻燃 (UL94 V0)

应用

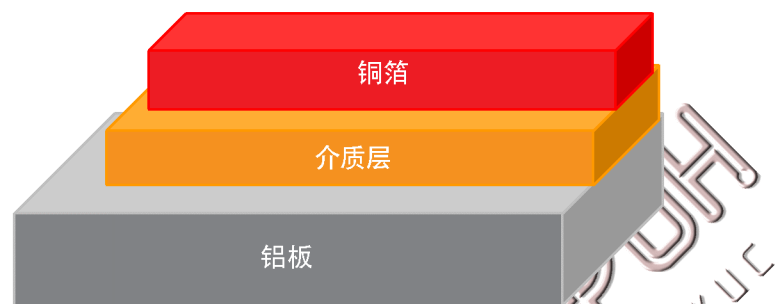
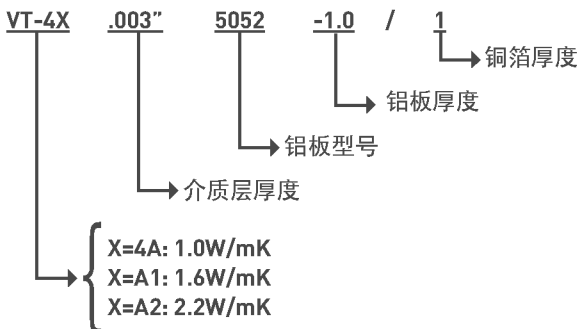
- 电源转换器
- PDP, 发光二极管、TV 稳压器
- 监控器驱动
- 整流器、电源

存储条件&保存期限

		Prepreg		Laminate
Storage Condition	Temperature	Below 23°C (73°F)	Below 5°C (41°F)	Room
	Relative Humidity	Below 55% RH	/	/
Shelf Life		3 Months	6 Months	24 Months (airproof)

过期半固化片在使用前需复测以确认特性。

料号编码



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技术资料表

特性表

Laminate Properties		Test Condition (IPC TM650)	Unit	VT-44A				VT-4A1				VT-4A2			
				75um	100um	125um	150um	75um	100um	125um	150um	75um	100um	125um	150um
Thermal Conductivity		ISO22007-2	W/m ² K	1.0				1.6				2.2			
Thermal Impedance		ISO22007-2	°C*in ² /W	0.118	0.158	0.197	0.237	0.074	0.099	0.123	0.148	0.054	0.072	0.089	0.107
Tg	DSC	2.4.25	°C	130				130				130			
Td	TGA	ASTM D3850	°C	380				380				380			
Thermal Stress		288°C, Solder Dip	minute	≥5				≥5				≥5			
Hi Pot Withstand		VDC	Volts	4500	5000	6000	6000	4500	5000	6000	6000	4000	4500	5500	6000
Dielectric Strength		VAC	V/mil	1500				1500				1500			
Dk (1MHz)		C-24 / 23 / 50	—	5.0				5.0				5.1			
Df (1MHz)		C-24 / 23 / 50	—	0.016				0.015				0.014			
Volume Resistance		After Moisture	MΩ-cm	6×10 ⁸				4.5×10 ⁸				5.1×10 ⁸			
		E-24/125		4×10 ⁷				2.3×10 ⁷				3.1×10 ⁷			
Surface Resistance		After Moisture	MΩ	3×10 ⁷				2.2×10 ⁷				2.3×10 ⁷			
		E-24/125		6×10 ⁶				5.1×10 ⁶				5.2×10 ⁶			
Peel strength (1oz Cu)		As Received	Lb / in	12.0				12.0				12.0			
Flammability		As Received	—	V0				V0				V0			
CTI		As Received	Volts	600				600				600			
RTI		Electric	°C	90				90				90			
		Mechanical	°C	90				90				90			

所提供数据均为典型值，非特定规范

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产品规格

Laminate

Standard Size*	Material	Material Thickness
18"*24"	Copper	Hoz 1oz 2oz 3oz 4oz 6oz 10oz
20"*24"		
21"*24"	Dielectric	.003"(75um), .004"(100um), .005"(125um), .006"(150um), .008"(200um)
18"*48"		
20"*48"	Aluminum	0.5mm 0.8mm 1.0mm 1.2mm 1.5mm 2.0mm 3.0mm
21"*48"		
22"*48"		
24"*48"		

腾辉也可以供应更小的尺寸、更多的材料厚度以及铝合金类型（有关合金信息可参考“铝及其合金特性表”）。

Prepreg

Material	Pressed Thickness (um)	Glass	Application
VT-44A PP	75	1080	Single Layer
	100	106	Circuit Clearance Filling & Hole Filling
		1080	Single Layer
	125	1080	-
VT-4A1 PP	75	1080	Single Layer
	100	106	Circuit Clearance Filling & Hole Filling
		1080	Single Layer
	125	1080	-
VT-4A2 PP	75	1080	Single Layer
	100	106	Circuit Clearance Filling & Hole Filling
		1080	Single Layer
	125	1080	-

Aluminum Protective Film Selection Guide

Type	Material	Operation Temperature
Standard Type	PET	170 °C
High Temperature Type	Polyimide	270 °C

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铝及其合金特性表

主要化学组成

Alloy Code	Major Chemical Composition	Alloy Code	Major Chemical Composition
1100	Al, Si, Fe, Cu, Zn, Mn	5052	Al, Mg, Fe, Si, Cr, Cu, Zn
3003	Al, Mn, Si, Fe, Cu, Zn	6061	Al, Mg, Si, Fe, Cr, Cu, Zn, Ti, Mn

热性能&电性能

Alloy Code	Melting Point Range (°C)	CTE(ppm/°C)		Cp(J/g-°C)	Thermal Conductivity (W/m-K)	Resistivity (Ω-cm)
		20~100°C	20~300°C			
1100	643~657.2	23.6	25.5	0.904	220	3.00X10 ⁻⁶
3003	643~654	23.2	25.1	0.893	163	4.16X10 ⁻⁶
5052	607.2~649	23.8	25.7	0.880	138	4.99X10 ⁻⁶
6061	582~651.7	23.6	25.2	0.896	167	3.99X10 ⁻⁶

机械性能

Alloy	Hardness (HB)	Ultimate Tensile Strength (MPa)	Tensile Yield Strength (MPa)	Elongation at Break 1.6mm (%)	Modulus of Elasticity (GPa)	Poisson Ratio	Fatigue Strength (MPa)	Shear Modulus (GPa)	Shear Strength (MPa)
1100H24	32	124	117	9	68.9	0.330	48.3	26.0	75.8
3003H24	40	152	145	8	68.9	0.330	62.1	25.0	95.5
5052H32	68	262	214	10	70.3	0.330	124	25.9	145
6061T6	95	310	276	12	68.9	0.330	96.5	26.0	207

* Number of cycles: 5.0E+8.