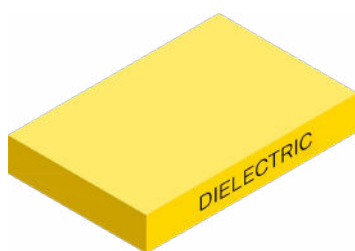


STANDARD CONSTRUCTION



Isolation thickness μm (mils)
100 (3,9) / 120 (4,75) / 150 (5,9)
Dielectric thickness tolerance
+ 10 μm (+/- 0,4 mils)

*Other constructions available upon request

DESCRIPTION

High Tg - B-stage dielectric prepreg glass less with high thermal conductivity. It is based on epoxy ceramic chemistry and intended for effective bonding between multilayer circuits (PCB) and metal heat spreaders.

Its high dielectric strength and resistance to thermal shocks added to its high thermal conductivity assures effective heat dissipation in critical power circuitry. Its low CTE value is ideal to achieve excellent interconnect reliability over thermal cycles.

The bond sheet HTC 5W Tg180 is delivered with a removable film carrier for easy operation.



UL Approved QMITS2
File: E47820
IPC-4101



RoHS 3 / REACH
Last updated compliance directive



PROPERTIES	UNITS	TOLERANCE	GUARANTEED VALUES		
			A	B	C
Nominal thickness (pressed)	μm (mils)	+/- 10 μm (0,4 mils)	100 (3,9)	120 (4,7)	150 (6,0)
Area weight	g/m^2 (Lb/mils ²)	+/- 10 g/m^2 (14 Lb/mils ²)	145 (203)	185 (259)	225 (315)
Prepreg shelf life (see storage recommendations)	months	-	3	3	3

PROPERTIES	TEST METHOD	UNITS	GUARANTEED VALUES	
Time to blister at 288°C, floating solder bath (50x50 mm)	IEC-61189	Sec	60	
Copper Peel strength, after heat shock 20 sec/288°C (Cu 70 μm)	IPC-TM 650-2.4.8	N/mm (Lb/in)	1,2 (6,8)	
Dielectric breakdown voltage, AC (1)	IPC-TM 650-2.5.6.3	KV	100 μm	3,0
			120 μm	4,0
			150 μm	5,0
Thermal conductivity (dielectric layer)	ASTM-D 5470	W/m·K (W/in·K)	5,0 (12) *	
Thermal resistance (dielectric layer)	ASTM-D 5470	K/W (K/W)	100 μm	0,023 *
			120 μm	0,028 *
			150 μm	0,035 *
Comparative tracking index (CTI)	IEC-61112	V	600	
Water absorption	IPC-TM 650-2.6.2.1	%	≤ 0,5	
Flammability, according UL-94, class	UL-94	Class	V-0	
Glass transition temperature of dielectric layer (by DMA)	IPC-TM 650-2.4.24.2	°C	155	
Decomposition Temperature (Td) Initial	IPC-TM-650 2.3.40	°C	352	
Decomposition Temperature (Td) 5% loss	IPC-TM-650 2.3.40	°C	422	
Thermal delamination (Td) T 260	IPC-TM 650-2.4.24.1	min	> 80	
Thermal delamination (Td) T 288	IPC-TM 650-2.4.24.1	min	> 80	
Thermal delamination (Td) T 300	IPC-TM 650-2.4.24.1	min	> 80	
CTE (z) < Tg	IPC-TM 650-2.4.24	ppm/°C	14	
CTE (z) > Tg	ppm/°C	ppm/°C	172	
Z-axis Expansion (50-250°C)	IPC-TM 650-2.4.24.2	%	1.8 (77ppm)	
Volume Resistivity	C-96/20/65	OMS cm	1 x 10 ⁷	

PROPERTIES	TEST METHOD	UNITS	GUARANTEED VALUES
Surface Resistivity	C-96/20/65	OMS	1 x 10 ⁹
Storage Modulus	IPC-TM 650-2.4.24.2	GPa	6,239
Young's Modulus	IPC-TM 650-2.4.24.2	GPa	6,246

PROCESS RECOMMENDATIONS

PREPREG STORAGE

Store preferably in the original unopened package or sealed by tape. Keep storage climate conditions below 24°C and 25% relative humidity. In the event of storing under very low warehouse temperatures give some time for the packed prepreg to stabilize to room temperature before opening. Keeping the above-mentioned storage conditions and avoiding prepreg damage by humidity uptake will give a useful life of 3 months after the production date.

PRESS CYCLE

Resin and prepreg parameters have been adjusted for low flow performance. This means they are suitable for heating rates around 3 to 6°C/min and specific pressures between 18-40 bars. Vacuum applied during the press cycle is mandatory for optimal performance. The use of synthetic thermal resistance pads should be a test choice. The curing temperature cycle is 1 hour of material temperature over 190°C.

METAL SURFACE PREPARATION

Aluminium is supplied with mechanical treatment and special primer to guarantee the correct adherence in the ML process.

DELIVERY FORM

In cut to size sheets upon request or rolls.

(*) Thermal conductivity and resistance values may deviate by up to +/- 15%.

(**) Frequency = 10 kHz

(1) The Dielectric breakdown test is conducted in a laboratory setting according to IPC-TM-650 part 2.5.6.3. It involves applying AC voltage until electrical failure occurs on a relatively small area of the dielectric layer using metal electrodes. These values serve as material references and should not be construed as guaranteed.

The data is based on typical values from standard production and is provided for general informational purposes. Our company reserves the right to make future changes. It is the responsibility of the user to ensure that the product meets their requirements.