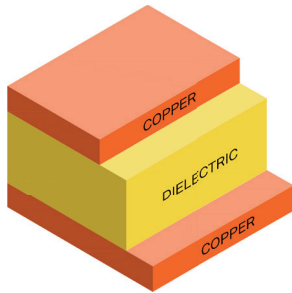


## FR4 FR95 HTG 0,8-3,2mm

Data Sheet DS\_32

1/2

## STANDARD CONSTRUCTIONS



**ED copper**  
thickness  $\mu\text{m}$  (in)  
35 (1oz) / 70 (2oz)  
/ 105 (3oz)

**Dielectric**  
thickness mm  
0.8-3.2

**ED copper**  
thickness  $\mu\text{m}$  (in)  
35 (1oz) / 70 (2oz)  
/ 105 (3oz)

\*Other constructions  
available upon request

## DESCRIPTION

Glass epoxy. Rigid alminates and PTH applications, high thermal resistance and low Z-CTE (for lead free technology)

**Reinforcement:** Woven E-glass

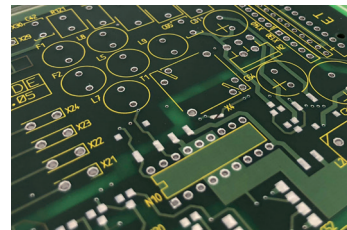
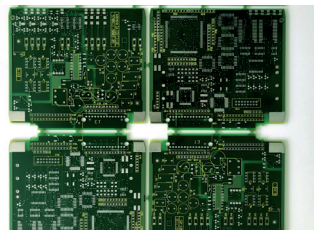
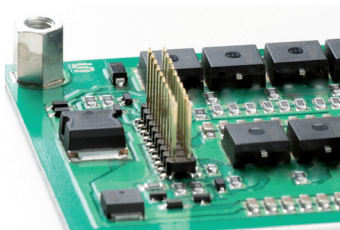
**Flame Retardant:** Bromine Rohs compl.

**Filler:** Non

**Glass Transition Tg:** 170°C

**Resin system (primary):** Difunctional epoxy

**Resin system (secondary):** Multifunctional epoxy



UL Approved QMST2 File: E47820  
ANSI Grade FR-4 (type L126)  
IPC 4101



RoHS 3 / REACH  
Last updated compliance directive



PROPERTIES	IPC 4101 Paragraph	Laminate Specification	50.mm Typical values
SURFACE QUALITY <sup>(1)</sup>	3.8.3	GRADE A	GRADE A
THICKNESS <sup>(1)</sup>	3.8.4.2	CLASS L	CLASS L
PEEL STRENGTH (std Cu foil) After thermal stress, 10" 288°C At 125°C After process solutions	3.9.1.1 3.9.1.1	>8LB N/in >8LB N/in	12 LB/in 12 LB/in
VOLUME RESISTIVITY 90% HR / 35 / 96h After moisture At elevated temp (E24h/125°C)	3.11.1.3	n/a 10 <sup>7</sup> M $\Omega$ ·cm 10 <sup>3</sup> M $\Omega$ ·cm	n/a 10 <sup>8</sup> M $\Omega$ ·cm 10 <sup>6</sup> M $\Omega$ ·cm
SURFACE RESISTIVITY 90% HR / 35 / 96h After moisture At elevated temp (E 24h/125°C)	3.11.1.4	n/a 10 <sup>4</sup> M $\Omega$ 10 <sup>3</sup> M $\Omega$	n/a 10 <sup>5</sup> M $\Omega$ 10 <sup>5</sup> M $\Omega$
DIELECTRIC BREAKDOWN	3.11.1.6	>40 kV	55 kV
LOSS TANGENT at 1MHz	3.11.1.2	</=0,035	0,027
DIELECTRIC CONSTANT	3.11.1.1 AT 1MHZ	</=5,4	4,4
THERMAL STRESS (10" at 288°C)	3.10.1.2	Pass visual	60sec
FLAMMABILITY	3.10.1.1	V-0	V-0
GLASS TRANSITION TEMP (Tg)	3.10.1.6	>170°C	173°C
Z-AXIS CTE ALPHA 1 ALPHA 2 50-260 °C	TMA	</=60 ppm/°C </=300 ppm/°C </= 3,5 %	45 288 3,3
TIME TO DELAMINATION (min/TMA) T260 T288	TMA	>/=30min >/=10min	60 min 20 min

## FR4 FR95 HTG 0,8-3,2mm

Data Sheet DS\_32

2/2

AVAILABILITY	
STANDARD SHEET SIZES	927 x 1232 mm and 1082 x 1232 mm Also available in cut panels to requirement.
Squareness	3 mm max., as differential between diagonal measurement
Copper thickness	35 and 70 mic (other copper thickness upon request)
Tolerance	+13/-0mm NO LOGO

Specification column corresponds to guaranteed values. Typical values are average values of current production and are based on reliable analytical methods, they have to be used only as guideline and not give rise to any rights under warranty terms. Aismalibar reserves the right to future changes.

Notes:

- (1) Other level upon agreement
- (2) Influenced by build-up (% of resin)
- (3) As agreed upon between user and supplied.

**IEC Specifications (IEC 61249-2-7) and Test Methods (IEC 61189-2):** IEC specifications and test methods are in most of cases equivalent to IPC standards. They can be used as reference upon specific agreement between customer and supplied.