

ForTii® F12

PPA-GF40 FR(40)

40% Glass Reinforced, PA4T, Electro-friendly, Halogen free and free of red phosphorous

ForTii® F12 has excellent balance of stiffness and toughness, suitable for high mechanical loaded application such as power connector or EV parts. F12 has high RTI electrical rating of 140°C at 0.75 mm and shows JEDEC Level 2 performance, enabling SMT process without deformation and low risk on blistering.

Properties	Typical Data	Unit	Test Method
Rheological properties			
	dry / cond		
Molding shrinkage (parallel)	0.3 / *	%	ISO 294-4
Molding shrinkage (normal)	0.85 / *	%	ISO 294-4
Mechanical properties			
	dry / cond		
Tensile modulus	13500 / 13500	MPa	ISO 527-1/-2
Stress at break	170 / 170	MPa	ISO 527-1/-2
Strain at break	1.9 / 1.9	%	ISO 527-1/-2
Flexural modulus	14500 / 14500	MPa	ISO 178
Flexural strength	280 / 260	MPa	ISO 178
Charpy impact strength (+23°C)	65 / 65	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	11 / 11	kJ/m ²	ISO 179/1eA
Thermal properties			
	dry / cond		
Melting temperature (10°C/min)	325 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	305 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.3	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.35	E-4/°C	ASTM D696
Burning Behav. at 1.5 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10



Properties	Typical Data	Unit	Test Method
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	-	-
Burning Behav. at 3.0 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	-	-
Relative Temperature Index - electrical	140	°C	UL746B
RTI electrical (Thickness (1) tested)	0.35	mm	UL746B

Electrical properties

dry / cond

Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1
Electric strength	33 / 33	kV/mm	IEC 60243-1
Comparative tracking index	600 / -	V	IEC 60112
Relative permittivity (100Hz)	4.2 / 4.2	-	IEC 62631-2-1
Relative permittivity (1 MHz)	3.9 / 3.9	-	IEC 62631-2-1

Other properties

dry / cond

Humidity absorption	1.3 / *	%	Sim. to ISO 62
Density	1550 / -	kg/m ³	ISO 1183

