

# ForTii<sup>®</sup> F12

## PPA–GF40 FR(40)

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

Print Date: 2024–09–17

ForTii<sup>®</sup> 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
<b>RHEOLOGICAL PROPERTIES</b>			
<i>DRY / COND</i>			
Molding shrinkage (parallel)	0.3 / *	%	ISO 294–4
Molding shrinkage (normal)	0.85 / *	%	ISO 294–4
<b>MECHANICAL PROPERTIES</b>			
<i>DRY / COND</i>			
Tensile modulus	14000 / 14000	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 <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	8 / 8	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL PROPERTIES</b>			
<i>DRY / COND</i>			
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

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## Property Data

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<i>PROPERTIES</i>	<i>TYPICAL DATA</i>	<i>UNIT</i>	<i>TEST METHOD</i>
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 <sup>3</sup>	ISO 1183

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