

ForTii® F12

PPA—GF40 FR(40)

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

Print Date: 2025–10–04

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	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/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	8 / 8	kJ/m²	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

Seller represents and warrants exclusively that on the date of delivery by Seller the product shall be in conformity with the specifications agreed upon. Seller makes no other representations or warranties, whether express or implied. Seller is not responsible or liable for the design of the products of the Customer and it is the responsibility of the Customer to determine that the Seller's product is safe, complies with application laws and regulations, and is technically or otherwise fit for its intended use. Seller does not endorse or claim suitability of its products for a specific application and disclaims each and every representation or warranty, whether express or implied, in that respect. Typical values are indicative only and are not to be construed as being binding specifications. Colorants in the product or other additives may cause significant variations in typical values. Copyright © Envalior 2025. All rights reserved. No part of the information may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of Envalior.

Property Data

ForTii® F12

Print Date: 2025-10-04

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	V-0 / *	mm	IEC 60695-11-10
UL recognition	3 / *	—	—
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/m³	ISO 1183

Seller represents and warrants exclusively that on the date of delivery by Seller the product shall be in conformity with the specifications agreed upon. Seller makes no other representations or warranties, whether express or implied. Seller is not responsible or liable for the design of the products of the Customer and it is the responsibility of the Customer to determine that the Seller's product is safe, complies with application laws and regulations, and is technically or otherwise fit for its intended use. Seller does not endorse or claim suitability of its products for a specific application and disclaims each and every representation or warranty, whether express or implied, in that respect. Typical values are indicative only and are not to be construed as being binding specifications. Colorants in the product or other additives may cause significant variations in typical values. Copyright © Envalior 2025. All rights reserved. No part of the information may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of Envalior.