ROGERS CORPORATION

\\\ Datasheet

RO4450F™ and RO4460G2™
Bondply

The RO4400™ bondply family is comprised of several grades based on the RO4000 series core materials, and are compatible in multi-layer constructions with RO4000 laminates. A high postcure Tg makes RO4400 series bondply an excellent choice for multi-layers requiring sequential laminations as fully cured RO4400 bondplys are capable of handling multiple lamination cycles. In addition, FR-4 compatible bond requirements permit RO4400 bondply and low flow FR-4 bondply to be combined into non-homogeneous multi-layer constructions using a single bond cycle.

RO4450F™ bondply has demonstrated improvement in lateral flow capability and is becoming the first choice for new designs or as a replacement in designs that have difficult fill requirements. RO4460G2™ bondply provides designers with a 6.15 Dk bonding layer that, just as the other RO4400 bonding materials, exhibits excellent Dk control while maintaining a low z axis expansion for plated through hole reliability. Each of the bondplys are recognized by Underwriter Laboratories with the UL 94 V-0 flame rating, and are compatible with lead-free processes.

\\\ Features and Benefits:

Prepreg grades based on RO4000 series core materials

- Compatible in mulitlayer board constructions with RO4003C, RO4350B, RO4835, RO4350G2, and RO4000 LoPro laminates

Low z-axis coefficient of thermal expansion ranging from 43 to 60 ppm/°C

- CAF resistant

Sequential lamination capable

- High frequency thermoset prepreg compatible with FR-4 bond temperatures

Lead free solder processing compatible

- High reliability plated through-hole

\\\ Typical Applications:

- Backhaul Radios
- Communications Systems
- Power Amplifiers
- Small Cells/DAS

Available Thicknesses	Available Panel Sizes
0.0040" (0.102 mm)	16" X 18" (406 X 457 mm) 24" X 18" (610 X 457 mm) 24.5" X 18.5" (622 X 470 mm) 24" X 36" (610 X 914 mm)

Properties	RO4450F	RO4460G2	Direction	Units	Test Conditions		Test Method
Electrical Properties							
Dielectric Constant	3.52 ± 0.05	6.15 ± 0.15	Z	-	23˚C @ 50% RH	10 GHz	IPC TM-650 2.5.5.5
Dissipation Factor	0.004	0.004	Z	-	23˚C @ 50% RH	10 GHz	IPC TM-650 2.5.5.5
Volume Resistivity	8.93 X10^8	9.1 X10^8	-	Mohm-cm	C-96/35/90	-	IPC TM-650 2.5.17.1
Surface Resistivity	1.03 X10^7	1.53 X10^8	X,Y	Mohm	C-96/35/90	-	IPC TM-650 2.5.17.1
Electrical Strength (dielectric strength)	1000	1000	Z	V/mil	D-48/50	-	IPC TM-650 2.5.6.2
Thermal Properties							
Decomposition Temperature (Td)	390	405	-	˚C	2hrs @ 105˚C	5% Weight Loss	IPC TM-650 2.3.40
Glass Transition (Tg)	>280	170	-	˚C TMA	A	-	IPC-TM-650 2.4.24.5
Coefficient of Thermal Expansion	19	15	X	ppm/˚C	-	-55˚C to 288˚C	IPC TM-650 2.4.41
Coefficient of Thermal Expansion	17	18	Y	ppm/˚C	-	-55˚C to 288˚C	IPC TM-650 2.4.41
Coefficient of Thermal Expansion	50	43	Z	ppm/˚C	-	-55˚C to 288˚C	IPC TM-650 2.4.41
Thermal Conductivity	0.65	0.67	Z	W/(m·K)	80˚C	z direction	ASTM D5470
Mechanical Properties							
Copper Peel Strength after Thermal Stress	0.70 (4.0)	1.04 (5.0)	Z	N/mm (lbs/in)	10s @288˚C	35 µm foil	IPC TM-650 2.4.8
Physical Properties							
Glass	1080	1080	-	-	-	-	-
Resin-Content	80	79	-	-	-	-	-
Color	White	White	-	-	-	-	-
Flammability	V-0	V-0	-	-	-	C48/23/50 & C168/70	UL 94
Moisture Absorption	0.04	0.05	-	%	D24/23	-	IPC TM-650 2.6.2.1
Lead Free Process Compatible	Yes	Yes	-	-	-	-	-

[1] Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corp.

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