

Rogers RO4500 series: RO4533, RO4534, RO4535 sheet data (www.ipcb.com)

Property	Typical Values			Direction	Units	Condition	Test Method
	RO4533	RO4534	RO4535				
Dielectric Constant, $\epsilon_r$ (1)	3.3 ± 0.08	3.4 ± 0.08	3.5 ± 0.08	Z		10 GHz/23°C 2.5 GHz	IPC-TM-2.5.5.5
Dissipation Factor	0.0020	0.0022	0.0032	Z		2.5 GHz/23°C	IPC-TM-650, 2.5.5.5
	0.0025	0.0027	0.0037			10 GHz/23°C	
PIM (Typical) (2)	-157	-157	-157		dBc	Reflected 43 dBm swept tones	Summitek 1900b PIM Analyzer
Dielectric Strength	>500	>500	>500	Z	V/mil	0.51mm	IPC-TM-650, 2.5.6.2
Dielectric Stability	<0.2	<0.3	<0.5	X,Y	mm/m (mils/inch)	after etch	IPC-TM-650, 2.4.39A
Coefficient of Thermal Expansion	13	11	14	X	ppm/°C	-55 to 288°C	IPC-TM-650, 2.4.41
	11	14	16	Y			
	37	46	35	Z			
Thermal Conductivity	0.6	0.6	0.6		W/m/K	80°C	ASTM C518
Moisture Absorption	0.02	0.06	0.05		%	D48/50	IPC-TM-650 2.6.2.1 ASTM D570
Tg	>280	>280	>280		°C TMA	A	IPC-TM-650 2.4.24
Density	1.8	1.8	1.9		gm/cm <sup>3</sup>		ASTM D792
Copper Peel Strength	6.9 (1.2)	6.3 (1.1)	5.1 (0.9)		lbs/in (N/mm)	1 oz. EDC post solder float	IPC-TM-650 2.4.8
Flammability	NON FR	NON FR	V-0				UL94
Lead-Free Process Compatible	YES	YES	YES				

Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.



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**Ordering Information:**

**Laminate Thickness and Copper Foil Options:**

Product	Dielectric Thickness			Standard Panel Sizes:	Copper Cladding:
	30 (0.762)	40 (1.016)	60 (1.524)		
				24"X18" (610 X 457 mm) 48"X36"(1.224 X 0.915 m) Additional thicknesses and panel sizes are available up to 50" X 110" (Untrimmed)	
RO4533	●▲	●▲	●▲	<b>Standard EDC:</b> ● 1/2 oz (17mm), 1 oz (35 mm) <b>LoPro® Reverse Treated EDC for PIM Sensitive Applications:</b> ▲ 1/2 oz (17mm), 1 oz (35 mm)	For most applications the standard EDC foil should be used. When PIM and insertion loss is critical, the LoPro reverse-treat copper should be considered. Rogers' LoPro foil has a surface modifier to bond reverse-treat foils to RO4000 laminates.
RO4534	32 (0.813) ●▲	●▲	●▲		
RO4535	●▲	●▲	●▲		