

ORCER CEr-10

Exceptional Interlaminar Bond
Low Moisture Absorption
Enhanced Dimensional Stability
Low Z-Axis Expansion
Stable DK over Frequency
Circuit Miniaturization
Increased Flexural Strength

TACONIC

An ISO 9001:2000 Registered Company

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APPLICATIONS

Power Amplifiers
Filters and Couplers
Passive Components

ORCER CER-10

CER-10 is an organic-ceramic DK-10 laminate in the ORCER family of Taconic products. It is based on a woven glass reinforcement. CER-10 is a result of Taconic's expertise in both ceramic fill technology and in coated PTFE fiberglass.

CER-10 exhibits exceptional interlaminar bond strength and solder resistance. CER-10's proprietary composition results in low moisture absorption and uniform electrical properties.

CER-10's woven glass reinforcement ensures excellent dimensional stability and enhances flexural strength. This DK-10 laminate exhibits low Z-axis expansion (CTE 46 ppm/°C), allowing for plated-through-hole reliability in extreme thermal environments.

CER-10 laminates can be sheared, drilled, milled and plated, using standard methods for PTFE/woven fiberglass materials.

CER-10 laminates are generally ordered clad on both sides with 1/2, 1 or 2 oz. electrodeposited copper.

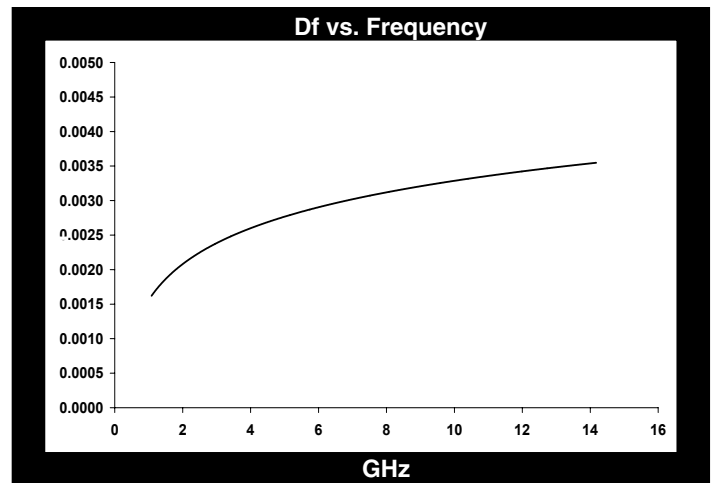
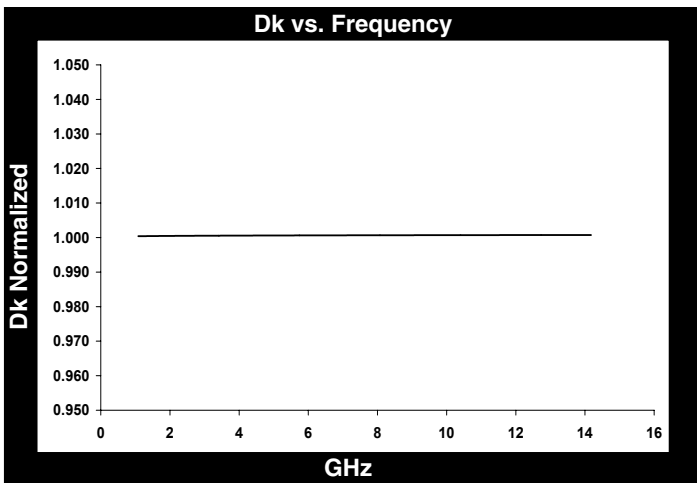
CER-10 laminates exhibit flammability of V-0 and are tested in accordance with IPC-TM 650. A certificate of conformance containing lot-specific data accompanies each shipment.

See "How to Order" on back page for a complete product listing.

Cεr-10 Typical Values

Property	Test Method	Unit	Value	Unit	Value
Dielectric Constant (Nominal)	IPC-TM-650 2.5.5.6		10.0		10.0
Dissipation Factor 10 GHz	IPC-TM-650 2.5.5.5.1		0.0035		0.0035
Moisture Absorption	IPC-TM-650 2.6.2.1	%	0.02	%	0.02
Dielectric Breakdown	IPC-TM-650 2.5.6	kV	44	kV	44
Volume Resistivity	IPC-TM-650 2.5.17.1	Mohm/cm	2.1 x 10 ⁸	Mohm/cm	2.1 x 10 ⁸
Surface Resistivity	IPC-TM-650 2.5.17.1	Mohm	1.1 x 10 ⁹	Mohm	1.1 x 10 ⁹
Arc Resistance	IPC-TM-650 2.5.1	Seconds	>180	Seconds	>180
Flexural Strength (MD)	ASTM D 790	psi	16,500	N/mm ²	114
Flexural Strength (CD)	ASTM D 790	psi	15,500	N/mm ²	107
Tensile Strength (MD)	ASTM D 638	psi	7,700	N/mm ²	53
Tensile Strength (CD)	ASTM D 3039	psi	6,700	N/mm ²	46
Peel Strength (1 oz. ED)	IPC-TM-650 2.4.8	lbs/linear inch	9	N/mm	1.61
Dimensional Stability (MD)	IPC-TM-650 2.4.39	in/in	-0.0002	mm/mm	-0.0002
Dimensional Stability (CD)	IPC-TM-650 2.4.39	in/in	-0.0003	mm/mm	-0.0003
Density (Specific Gravity)		g/cm ³	3.05	g/cm ³	3.05
Thermal Conductivity	ASTM F 433	W/m/K	0.63	W/m/K	0.63
CTE (x-y)	ASTM D 3386 (TMA)	ppm/°C	13-15	ppm/°C	13-15
CTE (z)	ASTM D 3386 (TMA)	ppm/°C	46	ppm/°C	46
Outgassing (% TML)*	ASTM E 595*	%	0.02	%	0.02
Outgassing (% CVCM)*	ASTM E 595*	%	0.01	%	0.01
Outgassing (% WVR)*	ASTM E 595*	%	0.01	%	0.01
Flammability Rating	UL 94		V-0		V-0

*As reported by NASA. See http://outgassing.nasa.gov/og_disclaimer.html.



All reported values are typical and should not be used for specification purposes. In all instances, the user shall determine suitability in any given application.

How To Order

Designation	Typical Thicknesses ¹		DK	Typical Thicknesses		DK
Cer-10	0.0250"	0.64 mm	9.50 +/- 0.50	0.0620"	1.58 mm	10.0 +/- 0.50
	0.0300"	0.76 mm	9.70 +/- 0.50	0.0750"	1.91 mm	10.0 +/- 0.50
	0.0470"	1.19 mm	9.80 +/- 0.50	0.1000"	2.54 mm	10.0 +/- 0.50
	0.0500"	1.27 mm	9.80 +/- 0.50	0.1250"	3.18 mm	10.2 +/- 0.50

Available Sheet Sizes ²	
12" x 18"	304 mm x 457 mm
16" x 18"	406 mm x 457 mm
18" x 24"	457 mm x 610 mm

¹Other thicknesses may be available. Please call for information.

²Our standard sheet size is 18" x 24" (457 mm x 610 mm). Please contact our customer service department for availability of other sizes.

Available Copper Cladding						
Designation	Weight	Copper Thickness		R _{MS} Treated Side		Description
RH	1/2 oz / ft ²	~0.0007	~18 μm	16 μin	0.4 μm	Rolled annealed
R1	1 oz / ft ²	~0.0014	~35 μm	11 μin	0.3 μm	Rolled annealed
CL1	1 oz / ft ²	~0.0014	~35 μm	13 μin	0.3 μm	Reverse treated / Electrodeposited
CVH (CH)	1/2 oz / ft ²	~0.0007"	~18 μm	27 μin	0.7 μm	Very low profile / Electrodeposited
CV1 (C1)	1 oz / ft ²	~0.0014	~35 μm	25 μin	0.6 μm	Very low profile / Electrodeposited
C2	2 oz / ft ²	~0.0028	~70 μm	77 μin	2.0 μm	Electrodeposited

Heavy metal claddings (aluminum, brass & copper) may also be available upon request. Please call for information.

An example of our part number is: **Cer-10-0500-CV1/CV1 - 18" x 24" (457 mm x 610 mm)**

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