

Sparton Digital Compass Encapsulant

Encapsulant Description:

The potting compound is a proprietary two component, thermally conductive epoxy encapsulant. It features a low coefficient of thermal expansion and excellent electrical insulative properties.

Encapsulant Key Features:

- It provides structural integrity to the product during handling and a robust design for applications exposed to environmental shock and vibration conditions
- It provides a top-level corrosion/moisture barrier
- It has good thermal conductivity which readily dissipates heat from embedded components
- It has a low coefficient of thermal expansion which provides low stress on embedded components

Encapsulant Material Properties:

Property	Test Method	Unit	Value
Hardness	ASTM-D-2240	Shore D	92
Flexural Strength	ASTM-D-790	mPa psi	106 15,300
Compressive Strength	ASTM-D-695	mPa psi	120 17,400
Linear Shrinkage	ASTM-D-2566	cm/cm	0.003
Water Absorption (24 hours)	ASTM-D-570	%	0.02
Coefficient of Thermal Expansion α_1 α_2	ASTM-D-3386	$10^{-6}/^{\circ}\text{C}$ $10^{-6}/^{\circ}\text{C}$	39.4 111.5
Glass Transition Temperature	ASTM-D-3418	$^{\circ}\text{C}$	68
Thermal Conductivity	ASTM-D-2214	W/m.K Btu-in/hr-ft ² - $^{\circ}\text{F}$	1.02 7.1
Temperature Range of Use	n/a	$^{\circ}\text{C}$	-65 to +105
Dielectric Strength	ASTM-D-149	kV/mm V/mil	14.8 375
Dielectric Constant @ 1 mHz	ASTM-D-150	-	5.36
Dissipation Factor @ 1 mHz	ASTM-D-150	-	0.051
Volume Resistivity @ 25 $^{\circ}\text{C}$	ASTM-D-257	Ohm-cm	>10 ¹⁵



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