Insulating Films

Part Number - 43-05-1G

Thermalfilm Polyimide Plastic Films

RoHS Compliant

Thermalfilm and Thermalfilm MT are low cost polymide plastic insulating films designed to be an improved replacement for mica. These insulators have a distinctive amber color and can be easily recognised and assembled on a production line

Thermalfilm MT, made from high performance Kapton MT material, provides thermal conductivity nearly 2-5 times greater than standard Thermalfilm.

Both insulators have an extremely high resistance to flow or thin out under high compressive stresses, particularly at elevated temperatures.

Excellent physical, mechanical and electrical properties remain nearly constant over a wide range of temperatures and frequencies. They are radiation resistant, have no melting points, and have no known organic solvents.

The polymide plastic film is UL listed as a component in UL's publication "Component - Plastic Material" dated September 18, 1969. The UL card number is E39505R, Guide QMFZ2 filed by E.I. du Pont de Nemours & Co., Inc. Thermalfilm is rated 94 V-O.

Notes:

- Thermalfilm MT part numbers begin with "46".
- Insulator thickness is .05mm +/- 0.006mm (0.002" +/- 0.00025") unless otherwise specified.
- Dimensional tolerances are +/- .38mm(0.015"), hole diameters are +/- .25mm (0.010") and angularity is +/- 1 1/2° unless otherwise specified.

For TO-5

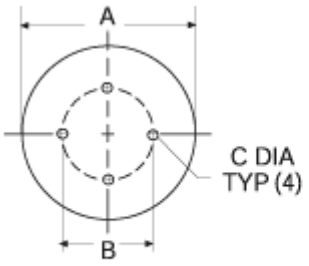

FIGURE A

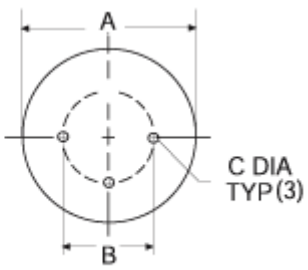

FIGURE B

Part Number	RoHS	FIG.	A	B	C
43-05-1G	RoHS ✓ Compliant	A	9.91 (0.390)	5.08 (0.200)	0.91 (0.036)

Thermalfilm / Thermalfilm MT

Property	Electrical -Typical Value @ 25°C		Test Method
	Thermalfilm	Thermalfilm MT	
Dielectric Strength	03mm (1 -mil) 275.6 x 10^3 volts/mm (7,000 volts/mil)	177.2 x 10^3 volts/mm (4500 volts/mm)	ASTM D149-64
Dielectric Constant	3.5	4.3	ASTM D150-64T
Dissipation Factor	0.002	0.002	ASTM D150-64T
Volume Resistivity	10^{17} ohm-cm	10^{17} ohm-cm	ASTM D257-61
Surface Resistivity	10^{16} ohms	10^{16} ohms	ASTM D257-61
Corona Start Voltage .025mm (1 -mil)	465 volts	465 volts	ASTM D1868-61T
Insulation Resistance	100.00 megohm mfds.	100.00 megohm mfds.	Based on 0.05 mfd wound capacitor using 0.25mm (1 -mil) Film
PHYSICAL			
Ultimate Tensile Strength (MD)	1.72 x 10^8 Pa (25,000 psi)	103 MPa (1500 psi)	ASTM D882-64T
Bursting Strength Test (Mullen)	3.10 x 10^5 Pa (45 psi)	0.31 MPa (45 psi)	ASTM 0774-63
Tear Strength - Initial	27,559 gm/mm (700 gm/mil)	35,433 gm/mm (900 gm/mil)	ASTM D1004-61
Density	1.42 gm/cm^3 (88.7 lb/ft^3)	1.78 gm/cm^3 (111.1 lb/ft^3)	ASTM D1505-63T
Folding Endurance(MIT)	>10,000 cycles	>10,000 cycles	ASTM D2176-63T
THERMAL			
Melting Point	None	None	
Zero Strength Temperature	815°C (1499°F)	815°C (1499°F)	Hot Bar (Du Pont Test)
Cut Through Temperature	435°C (815°F) 525°C (977°F)	435°C (815°F) 525°C (977°F)	Weighted Probe on Heated Film (Du Pont Test)
Service Temperature	-260°C to 240°C) (-464°F to 464°F)	-260°C to 240°C) (-464°F to 464°F)	
Thermal Conductivity	0.156Wm/K (0.09 BTU/hr-ft-°F)	0.379Wm/K (0.219 BTU/hr-ft-°F)	Model TC-1000 Twin Heatmeter Comparitive Tester
Flammability	V-0, UL "E" card E39505	V-0, UL "E" card E39505	UL 94