Part Number: 43-18-1G
Insulating Films

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 and TO-18

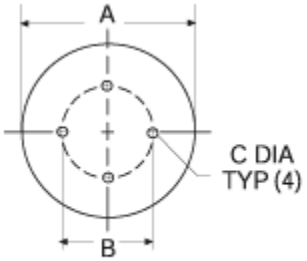

FIGURE A

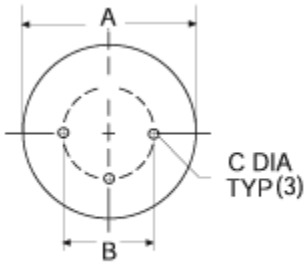

FIGURE B

Part Number	RoHS	FIG.	A	B	C
43-05-1G (TO-5)	RoHS ✓ Compliant	A	9.91 (0.390)	5.08 (0.200)	0.91 (0.036)
43-05-2G (TO-5)	RoHS ✓ Compliant	B	9.91 (0.390)	5.08 (0.200)	0.91 (0.036)
43-18-1G (TO-18)	RoHS ✓ Compliant	A	6.35 (0.250)	2.54 (0.100)	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