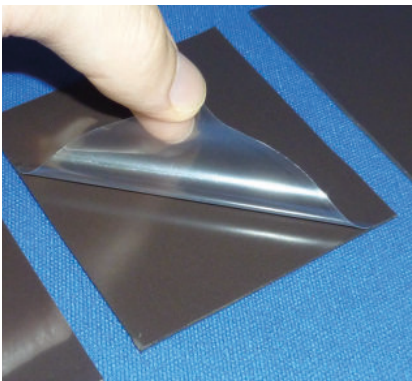


COOLPROVIDE™/ EMPV4



Thermal Interface Material with High Permeability ( $\mu' = 13$ )

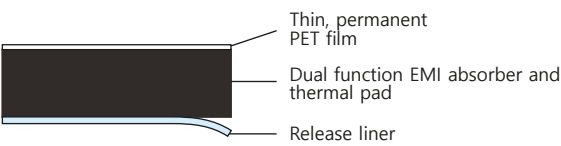
Features

- Excellent EMI absorber performance ( $\mu' = 13$  @10MHz) and compliant thermal material (ASKER C 40).
- Have excellent adhesion, performs heat conduction and MHz ~ GHz range electromagnetic wave attenuation simultaneously.
- Silicone-free, no siloxane outgassing.

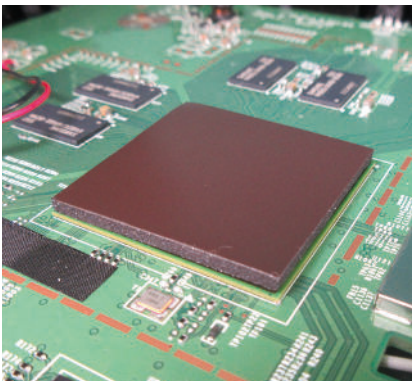
(The values below are not guaranteed.)

Test type	Unit	Standard	EMPV4-F
Thermal Conductivity	W/m·K	JIS R 2616 (Hot-wire method)	1.5
		ISO22007-2 (Hot Disc method)	1.3
Color	—	—	Black
Thickness	mm	—	1.0 / 1.5 / 2.0
			2.5 / 3.0 / 3.5
Specific Gravity	—	JIS Z 8807	3.55
Hardness	ASKER C	JIS K 7312	40
	Shore 00	ASTM D 2240	70
Tensile strength	MPa	JIS K 6251	0.51
Elongation	%	JIS K 6251	16
Volume Resistivity	$\Omega \cdot \text{cm}$	JIS K 6911 compliant	$1.0 \times 10^{12}$
Breakdown voltage	kV/mm	JIS C 2110-1 compliant	6.0
Withstanding voltage	kV/mm	JIS C 2110-1 compliant	4.2
Dielectric constant	1MHz	Company standard	12.7
Loss tangent	1MHz	Company standard	0.13
Flammability	—	UL94	V-0 equivalent
Permeability (at 10MHz)	—	—	13
Operating temp	°C	—	-40 ~ 110
Available max. dimension <sup>※1)</sup>	mm	—	210×510

※1) For usable dimensions, custom cuts, and material yield, contact your local sales department.



COOLPROVIDE™/ EMPV5



Broadband EMI Absorber and Thermal Pad for Higher Frequencies

Features

- Suppresses noise from 500MHz to 3GHz.
- Silicone-free, no siloxane outgassing.
- Operating temperature: -40 ~ +110C
- Thermal conductivity: 0.8W/m·K
- Permeability @10MHz: 7

(The values below are not guaranteed.)

Test type	Unit	Standard	EMPV5-F
Thermal Conductivity	W/m·K	ISO22007-2 (Hot Disc method)	0.8
Color	—	—	Black
Thickness	mm	—	1.0 / 1.5 / 2.0
			2.5 / 3.0 / 3.5
Hardness	ASCER C	JIS K 7312	30
	Shore 00	ASTM D 2240	60
Volume Resistivity	$\Omega \cdot \text{cm}$	JIS K 6911 compliant	$1.0 \times 10^{11}$
Breakdown voltage	kV/mm	JIS C 2110-1 compliant	8.8
Withstanding voltage	kV/mm	JIS C 2110-1 compliant	5.0
Flammability	—	UL94	V-0 equivalent
Permeability (at 10MHz)	—	—	7
Operating temp	°C	—	-40 ~ 110
Available max. dimension <sup>※1)</sup>	mm	—	210×510

※1) For usable dimensions, custom cuts, and material yield, contact your local sales department.

