Gore-Shield®

SMT EMI GASKETS

Unique Surface-Mountable Solution

Technical Summary

GORE-SHIELD® SMT EMI Gaskets are electrically conductive EMI gasket building blocks. They are comprised of a conformable electrically conductive gasket material bonded to a thin, solderable metal support layer via an electrically conductive adhesive. The gasket material consists of a polytetrafluroethylene (PTFE) matrix loaded with highly conductive nickel-based particles. The parts are precision cut to standard lengths and widths and packaged in standard EIA tape-and-reel format for automated PCB placement using existing surface mount equipment. They are soldered to the PCB via standard reflow processes along with the other board components.

By piecing together a series of blocks of identical or varying lengths on the PCB ground trace, a simple and efficient EMI seal can be formed between the PCB and corresponding shield housing. This enables users to create a low cost, custom EMI gasket at the board level without special tooling or custom installation equipment.

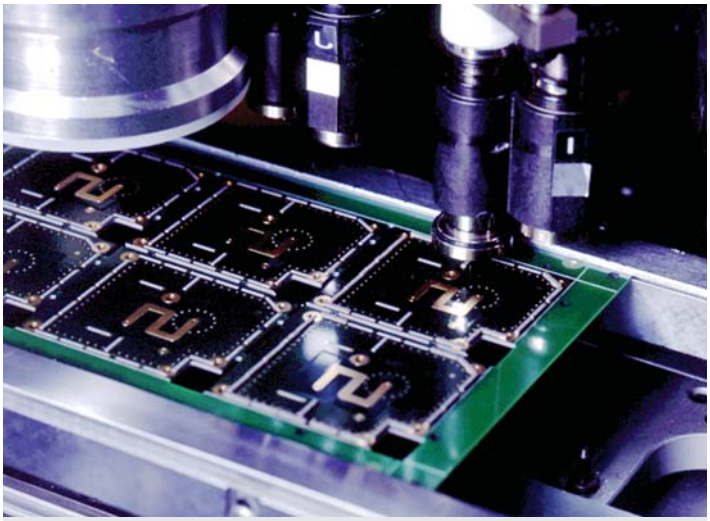
GORE-SHIELD® SMT EMI Gasket building blocks have been developed to help suppress unwanted electromagnetic radio frequency interference in both portable and non-portable electronic devices where inter-cavity shielding is critical.

Design Data

EMI gasket performance is crucial for many designs. The key factors to look for in a gasket include how it performs after Accelerated Life Testing (ALT) and how it performs after opening and closing of the gasketed seal (some gaskets only work once). It is important to note that measuring a low DC resistance value for an EMI gasket will not guarantee a high RF shielding value. This is because several other factors have to be taken into account when designing for a good EMI shield. Factors such as controlled gasket thickness/flatness, gasket conformability, contact area, conductive particle distribution, mechanical properties of the enclosure, etc., all play an integral role in good EMI performance.

Designing GORE-SHIELD® SMT EMT Gaskets for the PCB shield is very simple. Gore application engineers can quickly advise how to lay out the gasket design to optimize the number of GORE-SHIELD® SMT EMI Gasket pads required.

Please contact Gore for additional information.



Benefits

- Low cost EMI gasket solution
- High shielding effectiveness
- 8-10 parts / second assembly time
- Quick design cycles
- Flexible design allowing cost reduction
- Available in standard EIA tape-and-reel packages
- No curing required
- Standard part sizes
- Repairable
- Flame retardant
- Simplified supply chain
- Standard PCB component
- Consistent, repeatable installation
- Compatible with standard and lead-free solder reflow
- Survives multiple reflow operations

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GORE-SHIELD® SMT EMI Gasket Standard Parts

Nominal properties (mm unless otherwise specified)

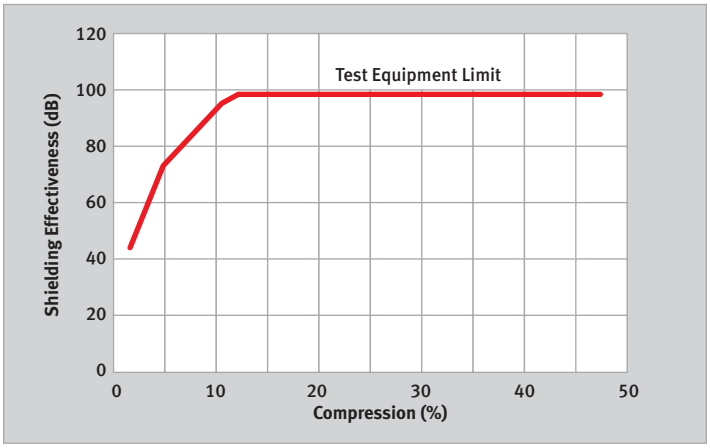
GORE Part Number 25SMT-3645-	Length	Width	Thick.	Carrier Tape Width x Pitch	Parts per Reel	Resist. at RCS (mOhm)
9	5.50	1.25	0.65	12x4	15,000	2.0
10	8.00	1.25	0.65	16x4	15,000	2.0
13	5.50	1.25	0.45	12x4	15,000	2.0
14	8.00	1.25	0.45	16x4	15,000	2.0
17	5.50	1.10	0.65	12x4	15,000	2.0
18	8.00	1.10	0.65	16x4	15,000	2.0
21	5.50	1.10	0.45	12x4	15,000	2.0
22	8.00	1.10	0.45	16x4	15,000	2.0
25	12.00	2.00	0.65	24x4	15,000	2.0
26	8.00	2.00	0.65	16x4	15,000	2.0
27	5.50	2.00	0.65	12x4	15,000	2.0
33	3.20	1.10	0.65	12x4	15,000	3.0
34	5.50	0.90	0.45	12x4	15,000	2.0
35	8.00	0.90	0.45	16x4	15,000	2.0
40	5.50	1.25	0.80	12x4	10,000	2.0
41	3.20	1.25	0.80	12x4	10,000	4.0
43	3.20	3.20	1.30	12x8	5,000	3.0
44	8.00	2.00	1.30	16x4	7,500	2.0
46	3.20	3.20	2.00	12x8	2,500	2.0
47	8.00	2.25	2.00	16x4	5,000	2.0

Applicable Standards

The following specifications and standards have been used.

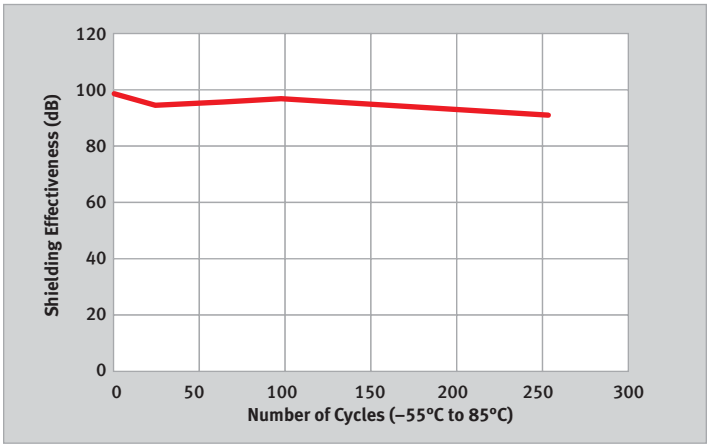
ASTM F36-88	Compressibility of Gasket Material
ARP 1705 (modified)	Shielding Effectiveness Technique for Measurement of EMI Gasket Materials
MIL-G-83528	Shielding Effectiveness Measurement of EMI Gasket Material

GS5200-Shielding Effectiveness vs. % Compression



Performed in accordance with ARP 1705 (modified as a transfer impedance test).

Shielding Effectiveness Through Accelerated Life Testing (ALT)



Tested in accordance with ARP 1705 mod at 1 GHz.

RoHS Status

RoHS Material*	Pass/Fail
Lead (Pb) Content	Pass
Cadmium (Cd) Content	Pass
Hexavalent Chromium (Cr6) Content	Pass
Mercury (Hg) Content	Pass
Bromine Compounds	Pass

*W. L. Gore & Associates declares that we do not intentionally add substances listed in Directive 2002/95/EU to GORE-SHIELD® SMT EMI Gaskets. Independent lab tests have been performed and results are available upon request.

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