



Mini-Systems, Inc. - Electronic Package Division

Mini-Systems, Inc. offers a wide range of microelectronic package solutions in many sizes and configurations for virtually any application. We pride ourselves on delivering the highest quality products at a competitive price and on time. Our 20+ years of packaging experience allows us to understand your requirements quickly and accurately.

The versatility of our package technology is vital to our customers. It allows them to customize existing packages to accurately match their desired results. Most modifications to existing designs have little or no impact to the package cost. The following details the materials currently utilized in our manufacturing processes...

- **ASTM-F15-Alloy (KOVAR):** This material is used for the package sealing rim, lead frames, I/O pins, package bodies, and for the package bases. It is comprised of 29% Nickel, 17% Cobalt, 53% Iron, and 1% of trace elements.
- **Insulating material:** The primary insulating material used in our packages is a Corning #7052 glass or equivalent (5.1 D.C.). We also utilize Corning #7070 glass or equivalent (4.1 D.C.) for R.F. and microwave applications. Our Alumina/Glass Sidewall Flatpacks utilize a mixture of Corning #7052 glass and Alumina (6.1 D.C.) which produces packages with greater strength and improved thermal properties. Our newest product line, Ceramic Surface Mounts, utilize 96% Alumina(9.4 D.C.) as the insulating material.
- **Thermal Management:** An increasing demand for thermal management solutions has enabled MSI to creatively engineer solutions for our customers. We are currently offering Silvar K (110 w/m(K), Molybdenum (140 w/m(K), Silvar (153 w/m(K), Aluminum Nitride (170 w/m(K), AlSiC (180 w/m(K), Molybdenum Copper (184 w/m(K), Tungsten Copper (230 w/m(K), and Beryllium Oxide (250 w/m(K). These materials can be either mounted into existing packages as a pedestal or attached to the package as its base.
- **Plating:** The plating finish on all of our packages can be custom to your application. We do recommend a standard plating of 50u" min. Electrolytic Gold per MIL-G-45204 over 50u" Electrolytic Nickel per QQ-N-290. These thickness' will ensure that all the quality requirements relating to the plating finish are met and exceeded. Some applications do not require gold plating on the package body or sealing rim. In these applications you may utilize a selective plating method where the gold is only applied to the package leads or I/O is to help reduce package cost.

MSI also offers surface mount lead forming and cutting on most of our packages. We have many tools currently available and we will be happy to make custom tooling wherever necessary. As always MSI will make every effort to keep any NRE cost associated to your custom requirements to a minimum. In addition to our forming and cutting capabilities, MSI has the ability to ground the sealing rim of our Alumina/Glass sidewall Flatpacks to the package base plane for enhanced electrical performance. This is facilitated with the use of grounding straps. Please inquire with our Sales department for packages currently tooled with this option. MSI also has a complete line of lids to match the packages we manufacture.

We are always working on new package solutions to better serve our customers. If you cannot find a package to suit your specific requirement please feel free to contact us. Mini-Systems, Inc. welcomes all opportunities to quote your specific requirements.



Quality Assurance

Mini-Systems Package Division is Quality system is structured to Mil-I-45208, with full lot traceability for five years from date of manufacture. The Quality Assurance Department at Mini-Systems is involved at every step along the production process, from design to final approval of units for shipment. Listed below are the specifications and requirements for both acceptance and qualification testing procedures.

Acceptance Testing

Standard Acceptance Testing is performed (per Mil-Std-105) by attributes, non accumulative and classified per lot as described below. Additional testing to individual requirements is optional and priced accordingly.

<u>Dimensional</u>	-	Sample size = 10 (o) (Blue Print Dimensional)	<u>Visual</u>	-	1.0 AQL Normal Level II Mil-Std-883, Method 2009 Jedec Std. 9A
<u>Hermeticity</u>	-	Sample size = 13 (o) Mil-Std-883, Method 1014 Test Condition A4	<u>Adhesion</u>	-	Sample size = 2 (o) Mil-G-45204
<u>Lead Integrity</u>	-	15 Leads, 3 pcs. min. Mil-Std-883, Method 1003	<u>Solderability</u>	-	Sample size = 3 (o)
<u>Plating</u>	-	Sample size = 5 (o) QQ-N-290, Mil-G-45204 X Ray Fluorescence			

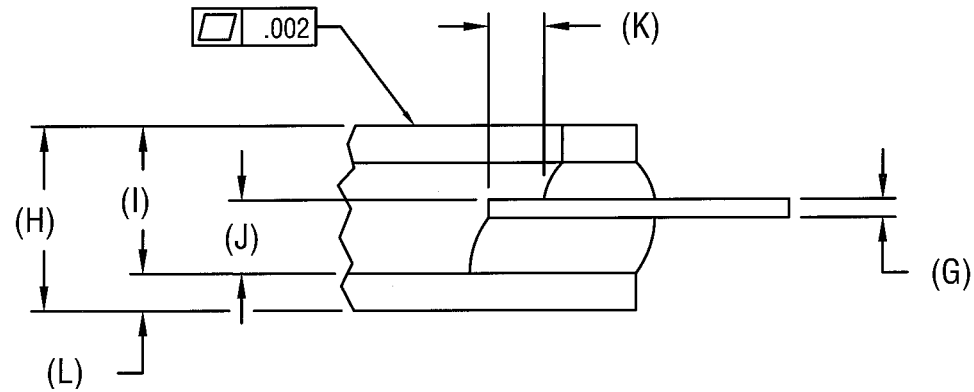
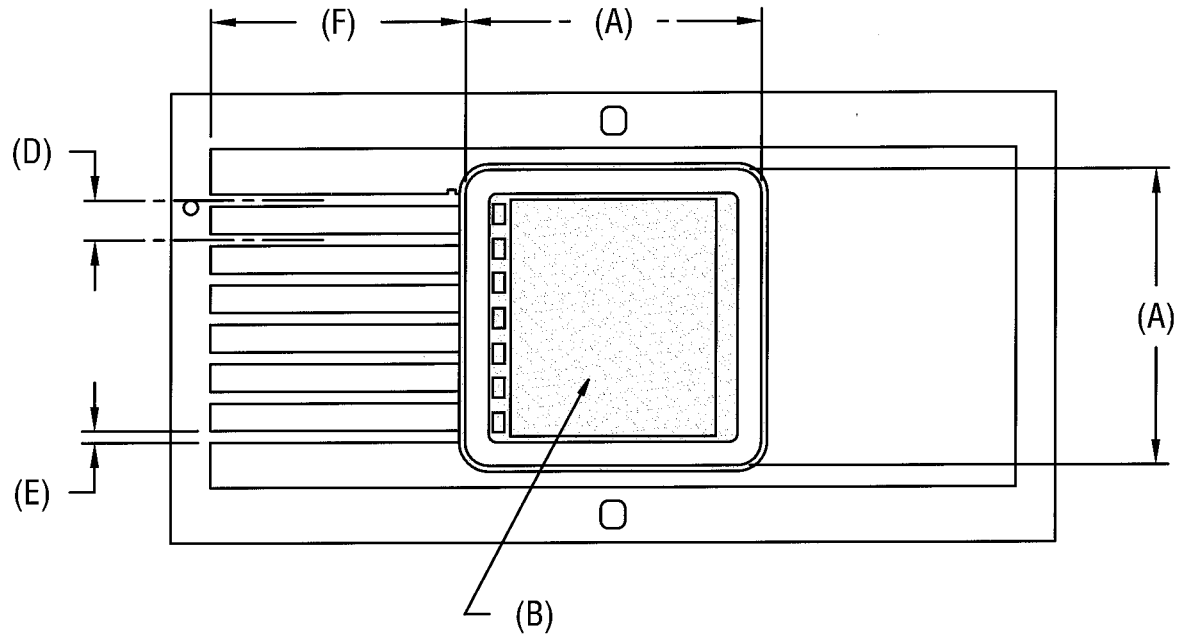
Evaluation Requirement

Evaluation Requirements are performed as required by the customer. Recommended tests are noted below.

Test	Mil-Std	Method	Quantity Accept / Reject
Sub Group 1			
Physical Dimensions	883	2016	3 (o)
Sub Group 2			
Solderability	883	2003	3 (o)
Sub Group 3			
Thermal Shock	883	1011	3 (o)
High Temperature Bake	883	1008	3 (o)
Lead Integrity	883	2004	3 (o)
Seal	883	1014	3 (o)
Sub Group 4			
Metal Package Isolation	883	1003	3 (o)
Sub Group 5			
Moisture Resistance	883	1004	5 (o)
Sub Group 6			
Salt Atmosphere	883	1009	5 (o)

Reference Mil-PRF-38534, Table VI

I-SIDED ALUMINA / GLASS SIDEWALL PACKAGE



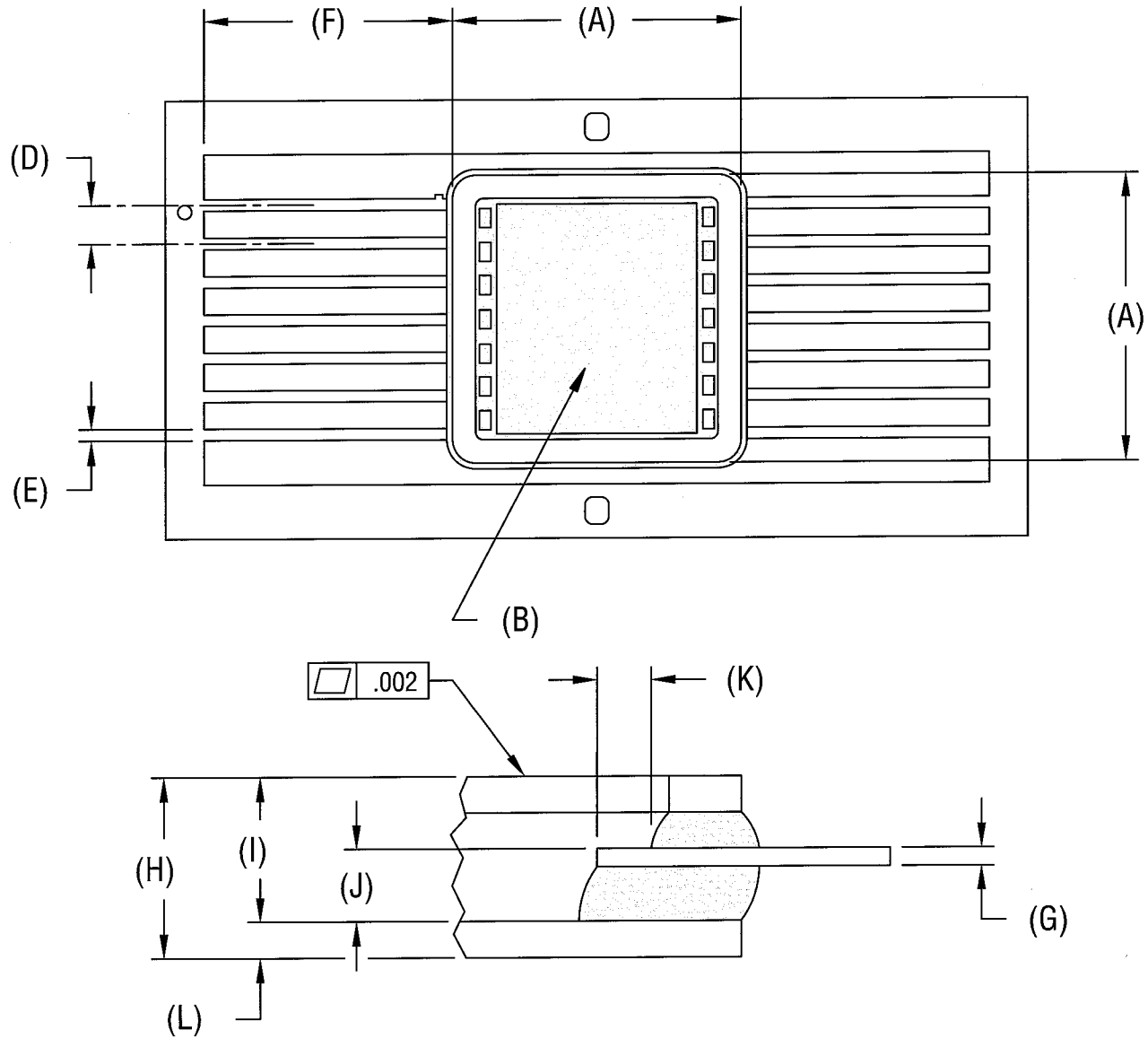


I-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
10A2M	.125	.125	.055	.070	2	.100	.012	.250	.005	.055	.035	.016	.008	.010	KOVAR
5A3M	.125	.125	.055	.070	3	.050	.012	.250	.005	.055	.035	.016	.008	.010	KOVAR
5C3M	.166	.166	.070	.100	3	.050	.015	.250	.005	.057	.032	.020	.010	.010	KOVAR
10F8C-1S	.250	.752	.125	.520	8	.100	.020	.335	.010	.105	.070	.040	.010	.015	CERAMIC
10F8M-1S	.250	.752	.125	.520	8	.100	.020	.335	.010	.105	.070	.040	.010	.015	KOVAR
5HL5M	.285	.285	.200	.230	5	.050	.015	.345	.005	.075	.045	.020	.020	.010	KOVAR
25K8CM	.266	.375	.215	.294	8	.025	.010	.245	.005	.053	.033	.015	.010	.010	MET. CERAMIC
5L7C-1S	.375	.375	.250	.280	7	.050	.015	.300	.005	.100	.070	.047	.010	.010	CERAMIC
5L7M-1S	.375	.375	.250	.280	7	.050	.015	.300	.005	.100	.070	.047	.010	.010	KOVAR
5U10C-S	.625	.625	.470	.500	10	.050	.015	.750	.010	.085	.050	.030	.010	.015	CERAMIC
5U10C-1S	.625	.625	.470	.500	10	.050	.015	.750	.010	.125	.095	.060	.010	.015	CERAMIC
5U10M-S	.625	.625	.470	.500	10	.050	.015	.750	.010	.085	.050	.030	.010	.015	KOVAR
5U10M-1S	.625	.625	.470	.500	10	.050	.015	.750	.010	.125	.095	.060	.010	.015	KOVAR

2-SIDED ALUMINA / GLASS SIDEWALL PACKAGE



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
5A4M	.125	.125	.040	.070	4	.100	.012	.250	.005	.055	.035	.016	.008	.010	KOVAR
5A6C	.125	.125	.040	.070	6	.050	.012	.250	.005	.055	.035	.016	.008	.010	CERAMIC
5A6CM	.125	.125	.040	.070	6	.050	.012	.250	.005	.055	.035	.016	.008	.010	MET. CERAMIC
5A6CM-4	.125	.125	.040	.070	6	.050	.012	.250	.005	.055	.035	.016	.010	.010	MET. CERAMIC
5A6M	.125	.125	.040	.070	6	.050	.012	.250	.005	.055	.035	.016	.008	.010	KOVAR
7HB4M	.165	.250	.110	.130	4	.070	.012	.200	.005	.100	.070	.025	.015	.010	KOVAR
7HB4MG4	.165	.250	.110	.130	4	.070	.012	.200	.005	.100	.070	.025	.015	.010	KOVAR
5B10CM	.165	.265	.065	.165	10	.050	.012	.300	.005	.045	.026	.012	.008	.010	MET. CERAMIC
5B10CM-2	.165	.265	.065	.165	10	.050	.012	.300	.005	.045	.026	.012	.008	.010	MET. CERAMIC
5B10M	.165	.265	.065	.165	10	.050	.012	.300	.005	.045	.026	.012	.008	.010	KOVAR
5B14C	.165	.265	.065	.165	14	.050	.011	.300	.005	.045	.026	.012	.008	.010	CERAMIC
5B14CM-2	.165	.265	.065	.165	14	.050	.011	.300	.005	.045	.026	.012	.008	.010	MET. CERAMIC
5B14M	.165	.265	.065	.165	14	.050	.011	.300	.005	.045	.026	.012	.008	.010	KOVAR
5BG14C	.165	.265	.065	.165	14	.050	.011	.300	.005	.035	.016	.012	.008	.010	CERAMIC
5B4C	.165	.265	.065	.165	4	.050	.012	.300	.005	.045	.026	.012	.010	.010	CERAMIC
5B4M	.165	.265	.065	.165	4	.050	.012	.300	.005	.045	.026	.012	.010	.010	KOVAR
10B5C	.165	.265	.065	.165	5	.100	.012	.300	.005	.045	.026	.012	.008	.010	CERAMIC
10B5M	.165	.265	.065	.165	5	.100	.012	.300	.005	.045	.026	.012	.008	.010	KOVAR
5B6C	.165	.265	.065	.165	6	.050/.100	.012	.300	.005	.045	.026	.012	.008	.010	CERAMIC
5B6CM	.165	.265	.065	.165	6	.050/.100	.012	.300	.005	.045	.026	.012	.008	.010	MET. CERAMIC
5B6M	.165	.265	.065	.165	6	.050/.100	.012	.300	.005	.045	.026	.012	.008	.010	KOVAR
5B10C	.165	.265	.065	.175	10	.050	.012	.300	.005	.045	.026	.012	.008	.010	CERAMIC
5B10C-1	.165	.265	.065	.175	10	.050	.012	.300	.005	.065	.045	.022	.008	.010	CERAMIC
5BU16M	.165	.470	.060	.364	16	.050	.011	.300	.005	.045	.026	.015	.010	.010	KOVAR
5C8M-6	.166	.166	.060	.090	8	.050	.015	.250	.005	.057	.032	.020	.008	.010	KOVAR
15C4M	.166	.166	.070	.090	4	.150	.015	.250	.005	.057	.032	.020	.008	.010	KOVAR



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG															
MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
15CG4B	.166	.166	.070	.090	4	.150	.015	.250	.005	.057	.032	.020	.008	.010	BeO
15CG4C	.166	.166	.070	.090	4	.150	.015	.250	.005	.057	.032	.020	.008	.010	CERAMIC
15CG4M	.166	.166	.070	.090	4	.150	.015	.250	.005	.057	.032	.020	.008	.010	KOVAR
5C8M-4	.166	.166	.070	.090	8	.050	.015	.250	.005	.057	.032	.020	.008	.010	KOVAR
5C8M-5	.166	.166	.070	.090	8	.050	.015	.250	.005	.062	.037	.025	.008	.010	KOVAR
3C10C	.166	.166	.070	.100	10	.030	.012	.250	.005	.057	.032	.020	.008	.010	CERAMIC
3C10CM	.166	.166	.070	.100	10	.030	.012	.250	.005	.057	.032	.020	.008	.010	MET. CERAMIC
3C10M	.166	.166	.070	.100	10	.030	.012	.250	.005	.057	.032	.020	.008	.010	KOVAR
3C10M-G2	.166	.166	.070	.100	10	.030	.012	.250	.005	.057	.032	.020	.008	.010	KOVAR
3C12M	.166	.166	.070	.100	12	.030	.012	.250	.005	.057	.032	.020	.008	.010	KOVAR
3C12CM	.166	.166	.070	.100	12	.030	.012	.250	.005	.057	.032	.020	.008	.010	MET. CERAMIC
3C12M	.166	.166	.070	.100	12	.030	.012	.250	.005	.057	.032	.020	.008	.010	KOVAR
5C12C	.166	.166	.070	.100	12	.050	.015	.300	.005	.057	.032	.020	.008	.010	CERAMIC
5C12CM	.166	.166	.070	.100	12	.050	.015	.300	.005	.057	.032	.020	.008	.010	MET. CERAMIC
5C12M	.166	.166	.070	.100	12	.050	.015	.300	.005	.057	.032	.020	.008	.010	KOVAR
5C8C	.166	.166	.070	.100	8	.050	.015	.250	.005	.057	.032	.020	.010	.010	CERAMIC
5CG8C	.166	.166	.070	.100	8	.050	.015	.250	.005	.047	.022	.020	.008	.010	CERAMIC
5C8CM	.166	.166	.070	.100	8	.050	.015	.250	.005	.057	.032	.020	.008	.010	MET. CERAMIC
5C8CM-2	.166	.166	.070	.100	8	.050	.015	.250	.005	.057	.032	.020	.008	.010	MET. CERAMIC
5C8M	.166	.166	.070	.100	8	.050	.015	.250	.005	.057	.032	.020	.010	.010	KOVAR
5C8M-3	.166	.166	.070	.100	8	.050	.015	.250	.005	.067	.032	.020	.008	.020	KOVAR
5C8M-G2	.166	.166	.070	.100	8	.050	.015	.250	.005	.057	.032	.020	.008	.010	KOVAR
5C8M-8	.166	.166	.070	.105	8	.050	.015	.250	.005	.057	.032	.020	.010	.010	KOVAR
5C8M-12	.166	.166	.080	.095	8	.050	.015	.250	.005	.057	.032	.020	.008	.010	KOVAR
5C8CM-1	.166	.166	.080	.100	8	.050	.015	.250	.005	.057	.032	.020	.010	.010	MET. CERAMIC
5C8M-5G2	.166	.166	.080	.100	8	.050	.015	.250	.005	.062	.037	.025	.008	.010	KOVAR

2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
68EF16M	.210	.625	.080	.530	16	.068	.022	-	.010	.065	.040	.020	.015	.015	KOVAR
3D12C	.215	.215	.090	.110	12	.030	.012	.285	.005	.075	.045	.025	.015	.020	CERAMIC
5DE14C	.240	.330	.085	.145	14	.050	.017	.350	.005	.085	.047	.022	.010	.025	CERAMIC
5DE14CM	.240	.330	.085	.145	14	.050	.017	.350	.005	.085	.025	.022	.015	.025	MET. CERAMIC
5H6GB	.250	.250	-	-	6	.050/.100	.018	.350	.005	.050	.010	.030	.025	.025	GLASS
5H14C-12	.250	.250	.090	.090	14	.050	.017	.300	.005	.047	.029	.015	.010	.010	CERAMIC
5H14CM-14	.250	.250	.090	.090	14	.050	.017	.300	.005	.047	.029	.015	.010	.010	MET. CERAMIC
5H14CM-18	.250	.250	.090	.090	14	.050	.017	.300	.005	.065	.040	.015	.010	.010	MET. CERAMIC
5H14CM-20	.250	.250	.090	.090	14	.050	.017	.300	.005	.065	.040	.015	.010	.010	MET. CERAMIC
5H14M-12	.250	.250	.090	.090	14	.050	.017	.300	.005	.047	.029	.015	.010	.010	KOVAR
5H14M-13	.250	.250	.090	.090	14	.050	.017	.300	.005	.047	.025	.015	.025	.010	KOVAR
5H10M-1G2	.250	.250	.130	.130	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	KOVAR
5H10C-1	.250	.250	.130	.170	10	.050	.015	.250	.005	.100	.070	.045	.010	.010	CERAMIC
5H10CM-1	.250	.250	.130	.170	10	.050	.015	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
5H10M-1	.250	.250	.130	.170	10	.050	.015	.250	.005	.100	.070	.045	.010	.010	KOVAR
4H12M-G4	.250	.250	.130	.170	12	.040	.015	.250	.005	.070	.050	.020	.015	.010	KOVAR
5H14C-1	.250	.250	.130	.170	14	.050	.015	.250	.005	.100	.070	.045	.010	.010	CERAMIC
5H14CM-1	.250	.250	.130	.170	14	.050	.015	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
5H14CM-6	.250	.250	.130	.170	14	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H14CM-10	.250	.250	.130	.170	14	.050	.015	.350	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H14M-1	.250	.250	.130	.170	14	.050	.015	.250	.005	.100	.070	.045	.010	.010	KOVAR
3H16C-1	.250	.250	.130	.170	16	.030	.012	.250	.005	.100	.070	.045	.010	.010	CERAMIC
3H16CM-1	.250	.250	.130	.170	16	.030	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
3H16M-1	.250	.250	.130	.170	16	.030	.012	.250	.005	.100	.070	.045	.010	.010	KOVAR
10HG4G	.250	.250	.130	.170	4	.100	.015	.250	.005	.065	.040	.020	.010	.010	KOVAR
5H10M-4	.250	.250	.135	.165	10	.050	.015	.140	.005	.060	.040	.020	.006	.010	KOVAR



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
5H9C	.250	.250	.135	.175	9	.050	.015	.430	.005	.055	.034	.015	.010	.010	CERAMIC
5H10C-6	.250	.250	.140	.140	10	.050	.017	.275	.005	.047	.029	.015	.010	.010	CERAMIC
5H10C-10	.250	.250	.140	.140	10	.050	.017	.275	.005	.065	.045	.025	.010	.010	CERAMIC
5H10CM-14	.250	.250	.140	.140	10	.050	.017	.275	.005	.047	.029	.015	.010	.010	MET. CERAMIC
5H10CM-16	.250	.250	.140	.140	10	.050	.017	.275	.005	.065	.040	.025	.010	.010	MET. CERAMIC
5H10M-6	.250	.250	.140	.140	10	.050	.017	.275	.005	.047	.029	.015	.010	.010	KOVAR
5H10M-10	.250	.250	.140	.140	10	.050	.017	.275	.005	.065	.045	.025	.010	.010	KOVAR
5H10M-11	.250	.250	.140	.140	10	.050	.017	.275	.005	.065	.045	.025	.010	.005	KOVAR
5H10M-12	.250	.250	.140	.140	10	.050	.017	.275	.005	.065	.045	.025	.010	.005	KOVAR
5H10M-13	.250	.250	.140	.140	10	.050	.017	.275	.005	.065	.045	.025	.010	.005	KOVAR
5H10M-14	.250	.250	.140	.140	10	.050	.017	.300	.005	.065	.045	.025	.010	.010	KOVAR
5H14C-8	.250	.250	.140	.140	14	.050	.017	.300	.005	.047	.029	.015	.010	.010	CERAMIC
5H14C-10	.250	.250	.140	.140	14	.050	.017	.300	.005	.065	.045	.025	.010	.010	CERAMIC
5H14CM-8	.250	.250	.140	.140	14	.050	.017	.300	.005	.047	.029	.015	.010	.010	MET. CERAMIC
5H14CM-12	.250	.250	.140	.140	14	.050	.017	.300	.005	.065	.045	.025	.010	.010	MET. CERAMIC
5H14CM-22	.250	.250	.140	.140	14	.050	.017	.300	.005	.065	.045	.025	.010	.010	MET. CERAMIC
5H14CM-24	.250	.250	.140	.140	14	.050	.017	.300	.005	.065	.045	.025	.010	.010	MET. CERAMIC
5H14M-8	.250	.250	.140	.140	14	.050	.017	.300	.005	.047	.029	.015	.010	.010	KOVAR
5H14M-10	.250	.250	.140	.140	14	.050	.017	.300	.005	.065	.045	.025	.010	.010	KOVAR
5H14M-14	.250	.250	.140	.140	14	.050	.014	.310	.005	.055	.038	.025	.010	.010	KOVAR
3H20C	.250	.250	.140	.140	20	.030	.012	.250	.005	.050	.032	.017	.015	.010	CERAMIC
3H20C-2	.250	.250	.140	.140	20	.030	.012	.250	.005	.065	.045	.025	.010	.010	CERAMIC
5H4C-2	.250	.250	.140	.160	4	.050	.015	.370	.005	.055	.035	.015	.015	.010	CERAMIC
5H10M-3	.250	.250	.140	.175	10	.050	.015	.250	.005	.100	.070	.045	.010	.010	KOVAR
5H10M-15	.250	.250	.150	.170	10	.050	.015	.250	.005	.070	.050	.030	.010	.010	W/Cu
5H10C-2	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
5H10C-5	.250	.250	.150	.180	10	.050	.015	.300	.005	.047	.029	.015	.010	.010	CERAMIC
5H10C-4	.250	.250	.150	.180	10	.050	.015	.300	.005	.060	.040	.020	.010	.010	CERAMIC
5H10C-3	.250	.250	.150	.180	10	.050	.015	.300	.005	.100	.070	.045	.010	.010	CERAMIC
5H10C-8	.250	.250	.150	.180	10	.050	.015	.300	.005	.060	.040	.020	.010	.010	CERAMIC
5H10C-9	.250	.250	.150	.180	10	.050	.015	.250	.005	.067	.047	.020	.010	.010	CERAMIC
5H10CM-2	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.011	MET. CERAMIC
5H10CM-4	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H10CM-6	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H10CM-8	.250	.250	.150	.180	10	.050	.015		.005	.060	.040	.020	.010	.011	MET. CERAMIC
5H10CM-10	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H10CM-12	.250	.250	.150	.180	10	.050	.015	.300	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H10CM-20	.250	.250	.150	.180	10	.050	.015	.250	.005	.065	.040	.020	.010	.010	MET. CERAMIC
5H10M-2	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	KOVAR
5H10M-2G2	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	KOVAR
5H10SR-2G2	.250	.250	.150	.180	10	.050	.015	.250	.005	.060	.040	.020	.010	.010	KOVAR
5H12CM-2	.250	.250	.150	.180	12	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H12CM-4	.250	.250	.150	.180	12	.050	.015	.350	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H14C-2	.250	.250	.150	.180	14	.050	.015	.250	.005	.060	.040	.020	.010	.010	CERAMIC
5H14C-6	.250	.250	.150	.180	14	.050	.015	.350	.005	.060	.040	.020	.010	.010	CERAMIC
5H14C-14	.250	.250	.150	.180	14	.050	.015	.350	.005	.060	.040	.020	.010	.010	CERAMIC
5H14CM-2	.250	.250	.150	.180	14	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H14CM-3	.250	.250	.150	.180	14	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H14CM-4	.250	.250	.150	.180	14	.050	.015	.250	.005	.060	.040	.020	.010	.015	MET. CERAMIC
5H14CM-5	.250	.250	.150	.180	14	.050	.015	.350	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H14M-2	.250	.250	.150	.180	14	.050	.015	.250	.005	.060	.040	.020	.010	.010	KOVAR
5H14M-6	.250	.250	.150	.180	14	.050	.015	.350	.005	.060	.040	.020	.010	.010	KOVAR



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
5HG14C	.250	.250	.150	.180	14	.050	.015	.250	.005	.060	.040	.020	.010	.010	CERAMIC
3H16C	.250	.250	.150	.180	16	.030	.012	.250	.005	.060	.040	.020	.010	.010	CERAMIC
3H16C-2	.250	.250	.150	.180	16	.030	.012	.250	.005	.060	.040	.020	.010		CERAMIC
3H16CM	.250	.250	.150	.180	16	.030	.012	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
3H16M	.250	.250	.150	.180	16	.030	.012	.250	.005	.060	.040	.020	.010	.010	KOVAR
5H9CM	.250	.250	.150	.180	9	.050	.015	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5H9CM-2	.250	.250	.150	.180	9	.050	.015	.250	.005	.055	.040	.018	.010	.010	MET. CERAMIC
5J14C-6	.250	.375	.120	.220	14	.050	.015	.250	.005	.073	.045	.020	.010	.010	CERAMIC
5J14CM-6	.250	.375	.120	.220	14	.050	.015	.250	.005	.073	.045	.020	.010	.010	MET. CERAMIC
5J14M-6	.250	.375	.120	.220	14	.050	.015	.250	.005	.073	.045	.020	.010	.010	KOVAR
5J16C-4	.250	.375	.120	.220	16	.050	.015	.250	.005	.073	.045	.020	.010	.010	CERAMIC
5J16CM-4	.250	.375	.120	.220	16	.050	.015	.250	.005	.073	.045	.020	.010	.010	MET. CERAMIC
5J16M-4	.250	.375	.120	.220	16	.050	.015	.250	.005	.073	.045	.020	.010	.010	KOVAR
5J24C	.250	.375	.120	.235	24	.050	.017	.350	.005	.055	.034	.018	.010	.010	CERAMIC
5J24CM	.250	.375	.120	.235	24	.050	.017	.350	.005	.055	.034	.018	.010	.010	MET. CERAMIC
5J24M	.250	.375	.120	.235	24	.050	.017	.350	.005	.055	.034	.018	.010	.010	KOVAR
5J24M-2	.250	.375	.120	.235	24	.050	.017	.350	.005	.055	.034	.018	.010	.010	KOVAR
5J14C-4	.250	.375	.120	.290	14	.050	.017	.300	.005	.060	.040	.025	.010	.010	CERAMIC
5J14CM-4	.250	.375	.120	.290	14	.050	.017	.300	.005	.060	.040	.025	.010	.010	MET. CERAMIC
5J14M-4	.250	.375	.120	.290	14	.050	.017	.300	.005	.060	.040	.025	.010	.010	KOVAR
5J14M-8	.250	.375	.120	.290	14	.050	.017	.300	.005	.060	.040	.025	.020	.010	KOVAR
5J14C-1	.250	.375	.125	.285	14	.050	.017	.300	.005	.100	.070	.045	.010	.010	CERAMIC
5J14CM-1	.250	.375	.125	.285	14	.050	.017	.300	.005	.100	.070	.045	.010	.010	MET. CERAMIC
5J14M-1	.250	.375	.125	.285	14	.050	.017	.300	.005	.100	.070	.045	.010	.010	KOVAR
5J16C-1	.250	.375	.125	.285	16	.050	.017	.350	.005	.100	.070	.045	.010	.010	CERAMIC
5J16CM-1	.250	.375	.125	.285	16	.050	.017	.350	.005	.100	.070	.045	.010	.010	MET. CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
5J16M-1	.250	.375	.125	.285	16	.050	.017	.350	.005	.100	.070	.045	.010	.010	KOVAR
3J24C-1	.250	.375	.125	.285	24	.030	.012	.250	.005	.100	.070	.045	.010	.010	CERAMIC
3J24CM-1	.250	.375	.125	.285	24	.030	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
3J24M-1	.250	.375	.125	.285	24	.030	.012	.250	.005	.100	.070	.045	.010	.010	KOVAR
10J8M-1G4	.250	.375	.125	.300	8	.100	.017	.200	.005	.100	.070	.020	.015	.010	KOVAR
5J24C-2	.250	.375	.130	.250	24	.050	.017	.350	.005	.060	.032	.025	.010	.010	CERAMIC
5J14C	.250	.375	.135	.290	14	.050	.017	.300	.005	.060	.040	.023	.010	.010	CERAMIC
5J14C-2	.250	.375	.135	.290	14	.050	.017	.368	.005	.060	.040	.023	.010	.010	CERAMIC
5J14CM	.250	.375	.135	.290	14	.050	.017	.300	.005	.060	.040	.023	.010	.010	MET. CERAMIC
5J14CM-2	.250	.375	.135	.290	14	.050	.017	.368	.005	.060	.040	.023	.010	.010	MET. CERAMIC
5J14M	.250	.375	.135	.290	14	.050	.017	.300	.005	.060	.040	.023	.010	.010	KOVAR
5J14M-2	.250	.375	.135	.290	14	.050	.017	.368	.005	.060	.040	.023	.010	.010	KOVAR
5J16C	.250	.375	.135	.290	16	.050	.017	.300	.005	.060	.040	.023	.010	.010	CERAMIC
5J16CM	.250	.375	.135	.290	16	.050	.017	.350	.005	.060	.040	.023	.010	.010	MET. CERAMIC
5J16M	.250	.375	.135	.290	16	.050	.017	.350	.005	.060	.040	.023	.010	.010	KOVAR
5J16M-6	.250	.375	.135	.290	16	.050	.017	.350	.005	.060	.040	.023	.010	.010	KOVAR
3J24C	.250	.375	.135	.290	24	.030	.012	.250	.005	.060	.040	.023	.010	.010	CERAMIC
3J24CM	.250	.375	.135	.290	24	.030	.012	.250	.005	.060	.040	.023	.010	.010	MET. CERAMIC
3J24M	.250	.375	.135	.290	24	.030	.012	.250	.005	.060	.040	.023	.010	.010	KOVAR
3J16C-1	.250	.375	.145	.240	16	.030	.012	.250	.005	.100	.070	.050	.010	.010	CERAMIC
3J16CM-1	.250	.375	.145	.240	16	.030	.012	.250	.005	.100	.070	.050	.010	.010	MET. CERAMIC
3J16M-1	.250	.375	.145	.240	16	.030	.012	.250	.005	.100	.070	.050	.010	.010	KOVAR
3J16C	.250	.375	.160	.255	16	.030	.012	.250	.005	.060	.040	.020	.010	.010	CERAMIC
3J16CM	.250	.375	.160	.255	16	.030	.012	.250	.005	.060	.040	.020	.010	.010	MET. CERAMIC
3J16M	.250	.375	.160	.255	16	.030	.012	.250	.005	.060	.040	.020	.010	.010	KOVAR



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
3E32GC	.250	.420	.160	.350	32	.030	.015	.500	.005	.065	.030	.025/.040	-	.010	CERAMIC
1010C	.250	.500	.150	.430	10	.100	.030	.150	.005	.065	.040	.025	.010	.010	CERAMIC
5120C-1	.250	.500	.150	.430	20	.050	.015	.250	.005	.060	.040	.025	.010	.010	CERAMIC
5120C	.250	.500	.150	.430	20	.050	.015	.250	.005	.065	.040	.025	.010	.010	CERAMIC
5120CM	.250	.500	.150	.430	20	.050	.015	.250	.005	.065	.040	.025	.010	.010	MET. CERAMIC
5120M	.250	.500	.150	.430	20	.050	.015	.250	.005	.065	.040	.025	.010	.010	KOVAR
5120M-1	.250	.500	.160	.440	20	.050	.015	.250	.005	.065	.040	.025	.010	.010	KOVAR
10FG4C-1	.250	.752	.125	.500	4	.100	.020	.335	.005	.070	.055	.040	.010	.015	CERAMIC
10F14C-1	.250	.752	.125	.520	14	.100	.020	.335	.010	.105	.070	.040	.010	.015	CERAMIC
10F14M-1	.250	.752	.125	.520	14	.100	.020	.335	.010	.105	.070	.040	.010	.015	KOVAR
10F16C-1	.250	.752	.125	.520	16	.100	.020	.335	.010	.105	.070	.040	.010	.015	CERAMIC
10F16M-1	.250	.752	.125	.520	16	.100	.020	.335	.010	.105	.070	.040	.010	.015	KOVAR
5F28C-1	.250	.752	.125	.520	28	.050	.015	.335	.005	.105	.070	.040	.010	.015	CERAMIC
5F28M-1	.250	.752	.125	.520	28	.050	.015	.335	.005	.105	.070	.040	.010	.015	KOVAR
10F16M-3	.250	.752	.135	.540	16	.100	.020	.335	.010	.105	.070	.040	.010	.015	KOVAR
5HK14C	.256	.375	.160	.300	14	.050	.015	.250	.005	.075	.045	.025	.010	.010	CERAMIC
5JK16C	.260	.374	.105	.145	16	.050	.017	.350	.005	.085	.047	.022	.010	.025	CERAMIC
5JK16CM	.260	.374	.105	.145	16	.050	.017	.350	.005	.085	.047	.022	.010	.025	MET. CERAMIC
5K16CM-1	.266	.375	.155	.270	16	.050	.015	.360	.005	.060	.040	.020	.010	.010	MET. CERAMIC
5K10C	.266	.375	.155	.280	10	.050	.015	.360	.005	.065	.040	.020	.010	.010	CERAMIC
5K10M	.266	.375	.155	.280	10	.050	.015	.360	.005	.065	.040	.020	.010	.010	KOVAR
5K14C	.266	.375	.155	.280	14	.050	.015	.360	.005	.065	.040	.020	.010	.010	CERAMIC
5K14M	.266	.375	.155	.280	14	.050	.015	.360	.005	.065	.040	.020	.010	.010	KOVAR
5K14M-2	.266	.375	.155	.280	14	.050	.015	.430	.005	.065	.040	.020	.010	.010	KOVAR
5K14M-4	.266	.375	.155	.280	14	.050	.015	.430	.005	.065	.040	.020	.010	.010	KOVAR
5K16C	.266	.375	.155	.280	16	.050	.015	.360	.005	.060	.040	.020	.010	.010	CERAMIC

2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
5K16M	.266	.375	.155	.280	16	.050	.015	.360	.005	.065	.040	.020	.010	.010	KOVAR
5K14M-1	.266	.375	.170	.280	14	.050	.015	.360	.005	.065	.040	.020	.010	.010	KOVAR
5K10C-2	.266	.375	.190	.245	10	.050	.015	.245	.005	.065	.038	.022	.010	.010	CERAMIC
5K10CM-2	.266	.375	.190	.245	10	.050	.015	.245	.005	.065	.040	.022	.010	.010	MET. CERAMIC
5K10CM-4	.266	.375	.190	.245	10	.050	.015	.245	.005	.065	.040	.022	.010	.010	MET. CERAMIC
5K10M-2	.266	.375	.190	.245	10	.050	.015	.245	.005	.065	.038	.022	.010	.010	KOVAR
5KG10M	.266	.375	.190	.245	10	.050	.015	.245	.005	.065	.040	.022	.010	.010	KOVAR
5K10M-3	.266	.375	.200	.255	10	.050	.015	.500	.005	.090	.065	.043	.010	.010	KOVAR
4N36M	.350	.840	.200	.740	36	.040	.015	.250	.005	.060	.036	.015	.015	.010	KOVAR
5M34C	.360	.500	.175	.235	34	.050	.017	.250	.005	.075	.045	.030	.010	.015	CERAMIC
5M34CM	.360	.500	.175	.235	34	.050	.017	.250	.005	.075	.045	.030	.010	.015	MET. CERAMIC
5M34M	.360	.500	.175	.235	34	.050	.017	.250	.005	.075	.045	.030	.010	.015	KOVAR
5G24C-1	.360	.730	.240	.640	24	.050	.015	.332	.005	.105	.075	.035	.015	.015	CERAMIC
4L10SR	.375	.375	-	-	10	.040/.080	.015	.300	.005	.085	.055	.030	.040	.010	KOVAR
5L14C-1	.375	.375	.250	.280	14	.050	.015	.300	.005	.100	.070	.047	.010	.010	CERAMIC
5L14CM-1	.375	.375	.250	.280	14	.050	.015	.300	.005	.100	.070	.047	.010	.010	MET. CERAMIC
5L14M-1	.375	.375	.250	.280	14	.050	.015	.300	.005	.100	.070	.047	.010	.010	KOVAR
5L16C-1	.375	.375	.250	.280	16	.050	.015	.250	.005	.100	.070	.047	.010	.010	CERAMIC
5L16M-1	.375	.375	.250	.280	16	.050	.015	.250	.005	.100	.070	.047	.010	.010	KOVAR
5L16NB-1	.375	.375	.250	.280	16	.050	.015	.250	.005	.070	.047	.047	.010	-	-
3L24C-1	.375	.375	.250	.280	24	.030	.012	.250	.005	.100	.070	.047	.010	.010	CERAMIC
3L24M-1	.375	.375	.250	.280	24	.030	.012	.250	.005	.100	.070	.047	.010	.010	KOVAR
5L12C	.375	.375	.260	.290	12	.050	.015	.250	.005	.060	.040	.020	.010	.010	CERAMIC
5L14BM	.375	.375	.260	.290	14	.050	.015	.300	.005	.082	.040	.025	.010	.030	BeO
5L14C	.375	.375	.260	.290	14	.050	.015	.300	.005	.060	.040	.020	.010	.010	CERAMIC
5L14C-2	.375	.375	.260	.290	14	.050	.015	.300	.005	.078	.060	.020	.010	.010	CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
5L14M	.375	.375	.260	.290	14	.050	.015	.300	.005	.060	.040	.020	.010	.010	KOVAR
5L14M-2	.375	.375	.260	.290	14	.050	.015	.300	.005	.078	.060	.020	.010	.010	KOVAR
5L16BM	.375	.375	.260	.290	16	.050	.015	.250	.005	.082	.040	.025	.010	.030	BeO
5L16C	.375	.375	.260	.290	16	.050	.015	.250	.005	.060	.040	.020	.010	.010	CERAMIC
5L16M	.375	.375	.260	.290	16	.050	.015	.250	.005	.060	.040	.020	.010	.010	KOVAR
3L24C	.375	.375	.260	.290	24	.030	.012	.250	.005	.060	.040	.020	.010	.010	CERAMIC
3L24M	.375	.375	.260	.290	24	.030	.012	.250	.005	.060	.040	.020	.010	.010	KOVAR
3L24M-3	.375	.375	.260	.290	24	.030	.012	.250	.005	.075	.055	.020	.010	.010	KOVAR
5L14M-3	.375	.375	.260	.300	14	.050	.015	.300	.005	.087	.060	.040	.010	.010	KOVAR
5LN18C	.375	.375	.265	.265	18	.050	.015	.315	.005	.067	.045	.025	.010	.010	CERAMIC
5LN18C-1	.375	.375	.265	.265	18	.050	.015	.315	.005	.090	.060	.037	.010	.010	CERAMIC
5LN18CM	.375	.375	.265	.265	18	.050	.015	.315	.005	.067	.045	.025	.010	.010	MET. CERAMIC
5LN18CM-1	.375	.375	.265	.265	18	.050	.015	.315	.005	.090	.060	.037	.010	.010	MET. CERAMIC
5LN18CM-2	.375	.375	.265	.265	18	.050	.015	.315	.005	.077	.045	.025	.010	.010	MET. CERAMIC
5LN18M	.375	.375	.265	.265	18	.050	.015	.315	.005	.067	.045	.025	.010	.010	KOVAR
5LN18M-1	.375	.375	.265	.265	18	.050	.015	.315	.005	.090	.060	.037	.010	.010	KOVAR
5LN20C	.375	.375	.265	.265	20	.050	.015	.300	.005	.067	.045	.025	.010	.010	CERAMIC
5LN20C-1	.375	.375	.265	.265	20	.050	.015	.300	.005	.090	.060	.037	.010	.010	CERAMIC
5LN20CM	.375	.375	.265	.265	20	.050	.015	.300	.005	.067	.045	.025	.010	.010	MET. CERAMIC
5LN20CM-1	.375	.375	.265	.265	20	.050	.015	.300	.005	.090	.060	.037	.010	.010	MET. CERAMIC
5LN20M	.375	.375	.265	.265	20	.050	.015	.300	.005	.067	.045	.025	.010	.010	KOVAR
5LN20M-1	.375	.375	.265	.265	20	.050	.015	.300	.005	.090	.060	.037	.010	.010	KOVAR
5LN22C	.375	.375	.265	.265	22	.050	.015	.315	.005	.067	.045	.025	.010	.010	CERAMIC
5LN22C-1	.375	.375	.265	.265	22	.050	.015	.315	.005	.090	.060	.037	.010	.010	CERAMIC
5LN22CM	.375	.375	.265	.265	22	.050	.015	.315	.005	.067	.045	.025	.010	.010	MET. CERAMIC
5LN22CM-1	.375	.375	.265	.265	22	.050	.015	.315	.005	.090	.060	.037	.010	.010	MET. CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
5LN22M	.375	.375	.265	.265	22	.050	.015	.315	.005	.067	.045	.025	.010	.010	KOVAR
5LN22M-1	.375	.375	.265	.265	22	.050	.015	.315	.005	.090	.060	.037	.010	.010	KOVAR
5LN24C	.375	.375	.265	.265	24	.050	.015	.300	.005	.067	.045	.025	.010	.010	CERAMIC
5LN24C-1	.375	.375	.265	.265	24	.050	.015	.300	.005	.090	.060	.037	.010	.010	CERAMIC
5LN24CM	.375	.375	.265	.265	24	.050	.015	.300	.005	.067	.045	.025	.010	.010	MET. CERAMIC
5LN24CM-1	.375	.375	.265	.265	24	.050	.015	.300	.005	.090	.060	.037	.010	.010	MET. CERAMIC
5LN24CM-2	.375	.375	.265	.265	24	.050	.015	.300	.005	.090	.060	.037	.010	.010	MET. CERAMIC
5LN24M	.375	.375	.265	.265	24	.050	.015	.300	.005	.067	.045	.025	.010	.010	KOVAR
5LN24M-1	.375	.375	.265	.265	24	.050	.015	.300	.005	.090	.060	.037	.010	.010	KOVAR
5LN28C	.375	.375	.265	.265	28	.050	.015	.300	.005	.067	.045	.025	.010	.010	CERAMIC
5LN28C-1	.375	.375	.265	.265	28	.050	.015	.300	.005	.090	.060	.037	.010	.010	CERAMIC
5LN28CM	.375	.375	.265	.265	28	.050	.015	.300	.005	.067	.045	.025	.010	.010	MET. CERAMIC
5LN28CM-1	.375	.375	.265	.265	28	.050	.015	.300	.005	.090	.060	.037	.010	.010	MET. CERAMIC
5LN28M	.375	.375	.265	.265	28	.050	.015	.300	.005	.067	.045	.025	.010	.010	KOVAR
5LN28M-1	.375	.375	.265	.265	28	.050	.015	.300	.005	.090	.060	.037	.010	.010	KOVAR
5LNG28M	.375	.375	.265	.265	28	.050	.015	.300	.005	.070	.045	.025	.010	.010	KOVAR
5LN14C	.375	.375	.265	.290	14	.050	.015	.312	.005	.067	.045	.025	.010	.010	CERAMIC
5LN14CM	.375	.375	.265	.290	14	.050	.015	.312	.005	.067	.045	.025	.010	.010	MET. CERAMIC
5LN14CM-2	.375	.375	.265	.290	14	.050	.015	.312	.005	.082	.060	.025	.010	.010	MET. CERAMIC
5LN14M	.375	.375	.265	.290	14	.050	.015	.312	.005	.067	.045	.025	.010	.010	KOVAR
35R40C	.375	.625	.210	.290	40	.035	.012	.250	.005	.090	.060	.035	.015	.015	CERAMIC
35R40M	.375	.625	.210	.290	40	.035	.012	.250	.005	.090	.060	.035	.015	.015	KOVAR
3R48C	.375	.625	.210	.290	48	.030	.012	.250	.005	.090	.060	.035	.010	.015	CERAMIC
3R48M	.375	.625	.210	.290	48	.030	.012	.250	.005	.090	.060	.035	.015	.015	KOVAR
3R48M-2	.375	.625	.210	.290	48	.030	.012	.250	.005	.090	.060	.035	.015	.010	KOVAR
25R64C-1	.375	.625	.210	.470	64	.025	.012	.265	.005	.090	.060	.035	.015	.015	CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
25R64M-1	.375	.625	.210	.470	64	.025	.012	.265	.005	.090	.060	.035	.015	.015	KOVAR
5R16C-3	.375	.625	.240	.530	16	.050	.015	.250	.005	.125	.085	.050	.010	.015	CERAMIC
5R16M-3	.375	.625	.240	.530	16	.050	.016	.250	.005	.125	.085	.050	.010	.015	KOVAR
5R20C	.375	.625	.240	.530	20	.050	.016	.250	.005	.075	.040	.025	.010	.015	CERAMIC
5R20C-1	.375	.625	.240	.530	20	.050	.016	.250	.005	.125	.085	.050	.010	.015	CERAMIC
5R20CM	.375	.625	.240	.530	20	.050	.016	.250	.005	.075	.040	.025	.010	.015	MET. CERAMIC
5R20CM-2	.375	.625	.240	.530	20	.050	.016	.400	.005	.070	.040	.025	.010	.015	MET. CERAMIC
5R20M	.375	.625	.240	.530	20	.050	.016	.250	.005	.075	.040	.025	.010	.015	KOVAR
5R20M-1	.375	.625	.240	.530	20	.050	.016	.250	.005	.125	.085	.050	.010	.015	KOVAR
5R20M-3	.375	.625	.240	.530	20	.050	.017	.295	.005	.085	.060	.030	.010	.015	KOVAR
5R20M-4	.375	.625	.240	.530	20	.050	.017	.295	.005	.085	.060	.030	.010	.015	KOVAR
5R20SR	.375	.625	.240	.530	20	.050	.016	.250	.005	.075	.040	.025	.010	.015	KOVAR
5R22C	.375	.625	.240	.530	22	.050	.016	.250	.005	.075	.040	.025	.010	.015	CERAMIC
5R22C-1	.375	.625	.240	.530	22	.050	.016	.250	.005	.125	.085	.050	.010	.015	CERAMIC
5R22C-2	.375	.625	.240	.530	22	.050	.016	.550	.005	.075	.040	.025	.010	.015	CERAMIC
5R22M	.375	.625	.240	.530	22	.050	.016	.250	.005	.075	.040	.025	.010	.015	KOVAR
5R22M-1	.375	.625	.240	.530	22	.050	.016	.250	.005	.125	.085	.050	.010	.015	KOVAR
5R22M-2	.375	.625	.240	.530	22	.050	.016	.550	.005	.075	.040	.025	.010	.015	KOVAR
5R22M-3	.375	.625	.240	.530	22	.050	.016	.550	.005	.125	.085	.050	.010	.015	KOVAR
5R22NB	.375	.625	.240	.530	22	.050	.016	.250	.005	.060	-	.025	.010	-	-
5R24C	.375	.625	.240	.530	24	.050	.016	.250	.005	.075	.040	.025	.010	.015	CERAMIC
5R24C-1	.375	.625	.240	.530	24	.050	.016	.250	.005	.125	.085	.050	.010	.015	CERAMIC
5R24C-2	.375	.625	.240	.530	24	.050	.016	.250	.005	.075	.040	.025	.010	.015	CERAMIC
5R24M	.375	.625	.240	.530	24	.050	.016	.250	.005	.075	.040	.025	.010	.015	KOVAR
5R24M-1	.375	.625	.240	.530	24	.050	.016	.250	.005	.125	.085	.050	.010	.015	KOVAR
3R44C-1	.375	.625	.240	.530	44	.030	.012	.250	.005	.125	.085	.050	.010	.015	CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
3R44M-1	.375	.625	.240	.530	44	.030	.012	.250	.005	.125	.085	.050	.010	.015	KOVAR
3RG44C-1	.375	.625	.240	.530	44	.030	.012	.250	.005	.125	.085	.050	.010	.015	CERAMIC
3RG44NB-1	.375	.625	.240	.530	44	.030	.012	.250	.005	.095	.070	.050	.010	-	-
5R20C-2	.375	.625	.240	.542	20	.050	.016	.400	.005	.100	.075	.025	.010	.015	CERAMIC
10R8C	.375	.625	.280	.480	8	.100	.015	.250	.005	.080	.054	.032	.010	.015	CERAMIC
10R8M	.375	.625	.280	.480	8	.100	.015	.250	.005	.080	.054	.032	.010	.015	KOVAR
5R16C-1	.375	.625	.285	.485	16	.050	.015	.250	.005	.125	.085	.050	.010	.015	CERAMIC
5R16M-1	.375	.625	.285	.485	16	.050	.015	.250	.005	.125	.085	.050	.010	.015	KOVAR
3R24C-1	.375	.625	.285	.485	24	.030	.012	.250	.005	.125	.085	.050	.010	.015	CERAMIC
3R24M-1	.375	.625	.285	.485	24	.030	.012	.250	.005	.125	.085	.050	.010	.015	KOVAR
5P14C-1	.400	.400	.280	.310	14	.050	.015	.312	.005	.080	.055	.027	.010	.015	CERAMIC
5P14M-1	.400	.400	.280	.310	14	.050	.015	.312	.005	.080	.055	.027	.010	.010	KOVAR
5P14M-2	.400	.400	.305	.325	14	.050	.015	.312	.005		.070	.024	.010	.010	KOVAR
5RS20C	.430	.430	.265	.265	20	.050	.015	.285	.005	.072	.045	.025	.010	.015	CERAMIC
5RS20CM-1	.430	.430	.265	.265	20	.050	.015	.285	.005	.082	.045	.025	.010	.025	MET. CERAMIC
5RS20M	.430	.430	.265	.265	20	.050	.015	.285	.005	.072	.045	.025	.010	.015	KOVAR
5RS22C	.430	.430	.265	.265	22	.050	.015	.285	.005	.072	.045	.025	.010	.015	CERAMIC
5RS22CM-1	.430	.430	.265	.265	22	.050	.015	.285	.005	.082	.045	.025	.010	.025	MET. CERAMIC
5RS22M	.430	.430	.265	.265	22	.050	.015	.285	.005	.072	.045	.025	.010	.015	KOVAR
5RS28C	.430	.430	.265	.265	28	.050	.015	.285	.005	.072	.045	.025	.010	.015	CERAMIC
5RS28CM-2	.430	.430	.265	.265	28	.050	.015	.285	.005	.082	.045	.025	.010	.025	MET. CERAMIC
5RS28M	.430	.430	.265	.265	28	.050	.015	.285	.005	.072	.045	.025	.010	.015	KOVAR
25SN64C	.493	.955	.315	.712	64	.0256	.010	.400	.005	.070	.045	.020	.026	.010	CERAMIC
25SN64C-1	.493	.955	.315	.712	64	.0256	.010	.400	.005	.100	.080	.060	.026	.010	CERAMIC
25SN64C-3	.493	.955	.315	.712	64	.0256	.010	.400	.005	.115	.090	.040	.030	.010	CERAMIC
25SN64C-4	.493	.955	.315	.712	64	.0256	.010	.400	.005	.125	.100	.040	.030	.010	CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

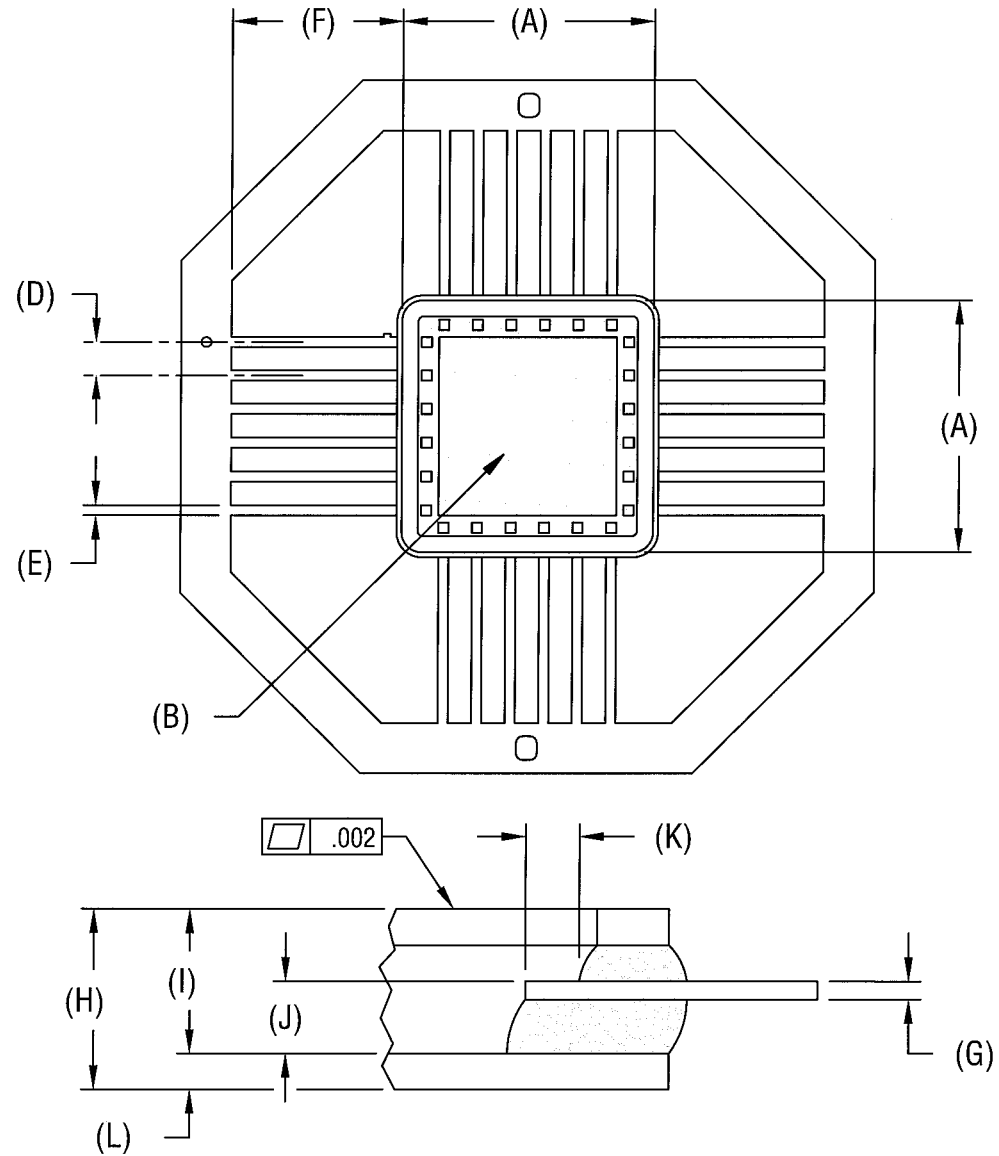
MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
2SW92C	.534	.996	.354	.620	92	.01968/.035	.010/.020	.200	.005	.070	.045	.020	.010	.010	CERAMIC
2SW96C	.534	.996	.354	.620	96	.020	.010	.200	.005	.070	.045	.020	.026	.010	CERAMIC
25SW64C	.534	.996	.354	.748	64	.0256	.010	.200	.005	.070	.045	.020	.026	.010	CERAMIC
10U12C	.625	.625	.470	.500	12	.100	.015	.500	.010	.085	.050	.030	.010	.015	CERAMIC
10U12C-1	.625	.625	.470	.500	12	.100	.015	.500	.010	.125	.095	.060	.010	.015	CERAMIC
10U12C-2	.625	.625	.470	.500	12	.100	.015	.550	.010	.103	.071	.040	.010	.020	CERAMIC
10U12C-3	.625	.625	.470	.500	12	.100	.015	.500	.010	.110	.090	.040	.010	.015	CERAMIC
10U12C-6	.625	.625	.470	.500	12	.100	.015	.500	.010	.100	.075	.035	.010	.015	CERAMIC
10U12M	.625	.625	.470	.500	12	.100	.015	.500	.010	.085	.050	.030	.010	.015	KOVAR
10U12M-1	.625	.625	.470	.500	12	.100	.015	.500	.010	.125	.095	.060	.010	.015	KOVAR
10U12M-2	.625	.625	.470	.500	12	.100	.015	.500	.010	.130	.060	.040	.010	.050	KOVAR
5U20C	.625	.625	.470	.500	20	.050	.015	.750	.010	.085	.050	.030	.010	.015	CERAMIC
5U20C-1	.625	.625	.470	.500	20	.050	.016	.750	.010	.125	.095	.060	.010	.015	CERAMIC
5U20CM	.625	.625	.470	.500	20	.050	.015	.550	.010	.103	.071	.040	.010	.020	MET. CERAMIC
5U20M	.625	.625	.470	.500	20	.050	.015	.750	.010	.085	.050	.030	.010	.015	KOVAR
5U20M-1	.625	.625	.470	.500	20	.050	.016	.750	.010	.125	.095	.060	.010	.015	KOVAR
10U6C-1	.625	.625	.470	.500	6	.100	.015	.750	.010	.125	.095	.060	.010	.020	CERAMIC
10U12C-4	.625	.625	.470	.530	12	.100	.015	.500	.010	.110	.080	.040	.010	.015	CERAMIC
25Z64M	.675	1.150	.500	1.00	64	.025	.010	.500	.010	.345	.320	.125	.040	.015	KOVAR
25Z64M-2	.675	1.150	.500	1.00	64	.025	.010	.550	.010	.200	.175	.070	.040	.015	KOVAR
10X16C	.873	.940	.740	.740	16	.100	.015	.700	.010	.235	.145	.09	.025	.040	CERAMIC
5X30M-1	.873	.940	.745	.745	30	.050	.015	.750	.010	.158	.110	.035	.015	.020	KOVAR
5X30M-2	.873	.940	.745	.745	30	.050	.015	.750	.010	.110	.075	.035	.015	.020	KOVAR
5X30C-1	.873	.940	.745	.745	30	.050	.015	.750	.010	.158	.110	.035	.015	.020	CERAMIC
5X30C-2	.873	.940	.745	.745	30	.050	.015	.750	.010	.110	.075	.035	.015	.020	CERAMIC
5X30C-3	.873	.940	.755	.755	30	.050	.015	.750	.010	.158	.110	.035	.015	.020	CERAMIC



2-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG															
MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
5W30C-1	.940	1.000	.790	.790	30	.050	.018	.750	.010	.135	.105	.070	.010	.010	CERAMIC
5W30C-3	.940	1.000	.790	.790	30	.050	.018	.750	.010	.115	.075	.045	.010	.010	CERAMIC
5W30M-1	.940	1.000	.790	.790	30	.050	.018	.750	.010	.145	.105	.060	.010	.020	KOVAR
5W30M-3	.940	1.000	.790	.790	30	.050	.018	.750	.010	.115	.075	.045	.010	.020	KOVAR
5W30M-6	.940	1.000	.790	.790	30	.050	.018	.750	.010	.115	.075	.045	.010	.020	KOVAR
5W30M-5	.940	1.000	.810	.810	30	.050	.018	.750	.010	.145	.105	.060	.010	.020	KOVAR
5LZ42MG1	1.250	1.250	1.000	1.000	42	.050	.020	.500	.007	.157	.105	.030	.030	.020	KOVAR

4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES



4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG															
MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
3D16BM-2	.215	.215	.100	.100	16	.030	.012	.250	.005	.067	.025	.016	.010	.030	BeO
3D16C	.215	.215	.100	.100	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	CERAMIC
3D16C-1	.215	.215	.100	.100	16	.030	.012	.250	.005	.071	.044	.032	.010	.010	CERAMIC
3D16M	.215	.215	.100	.100	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3D16M-1	.215	.215	.100	.100	16	.030	.012	.250	.005	.071	.044	.032	.010	.010	KOVAR
3D16M-2	.215	.215	.100	.100	16	.030	.012	.250	.005	.047	.030	.016	.010	.010	KOVAR
3D16M-4	.215	.215	.100	.100	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3D16M-3	.215	.215	.120	.120	16	.030	.012	.250	.005	.060	.040	.025	.010	.010	KOVAR
3D16M-5	.215	.215	.120	.120	16	.030	.012	.250	.005	.052	.025	.016	.010	.010	KOVAR
3D16M-6	.215	.215	.120	.120	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3D16M-6G2	.215	.215	.120	.120	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3D16M-7	.215	.215	.120	.120	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3D16M-8	.215	.215	.120	.120	16	.030	.012	.250	.005	.052	.025	.016	.010	.010	KOVAR
3D16M-10	.215	.215	.120	.120	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3D16M-11	.215	.215	.120	.120	16	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
4H12M-1G4	.250	.250	.130	.130	12	.040	.015	.250	.005	.070	.050	.020	.015	.010	KOVAR
3H24CM	.250	.250	.130	.130	24	.030	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
3H24M	.250	.250	.130	.130	24	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3H28C	.250	.250	.130	.130	28	.030	.012	.250	.005	.047	.025	.016	.010	.010	CERAMIC
3H28C-1	.250	.250	.130	.130	28	.030	.012	.250	.005	.100	.070	.045	.010	.010	CERAMIC
3H28CM	.250	.250	.130	.130	28	.030	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
3H28CM-1	.250	.250	.130	.130	28	.030	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
3H28CM-2	.250	.250	.130	.130	28	.030	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
3H28CM-3	.250	.250	.130	.130	28	.030	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
3H28M	.250	.250	.130	.130	28	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3H32C	.250	.250	.130	.130	32	.030	.012	.250	.005	.047	.025	.016	.010	.010	CERAMIC



4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG															
MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
3H32C-1	.250	.250	.130	.130	32	.030	.012	.250	.005	.100	.070	.045	.010	.010	CERAMIC
3H32CM	.250	.250	.130	.130	32	.030	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
3H32CM-1	.250	.250	.130	.130	32	.030	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
3H32CM-2	.250	.250	.130	.130	32	.030	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
3H32CM-3	.250	.250	.130	.130	32	.030	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
3H32M	.250	.250	.130	.130	32	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
3H32M-1	.250	.250	.130	.130	32	.030	.012	.250	.005	.100	.070	.045	.010	.010	KOVAR
3H32M-2	.250	.250	.130	.130	32	.030	.012	.250	.005	.047	.030	.016	.010	.010	KOVAR
3H32M-4	.250	.250	.130	.130	32	.030	.012	.250	.005	.065	.045	.025	.010	.010	KOVAR
3H32M-5	.250	.250	.130	.130	32	.030	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
25H32C	.250	.250	.130	.130	32	.025	.012	.250	.005	.047	.025	.016	.010	.010	CERAMIC
25H32C-1	.250	.250	.130	.130	32	.025	.012	.250	.005	.100	.070	.045	.010	.010	CERAMIC
25H32CM	.250	.250	.130	.130	32	.025	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
25H32CM-1	.250	.250	.130	.130	32	.025	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
25H32CM-2	.250	.250	.130	.130	32	.025	.012	.250	.005	.047	.025	.016	.010	.010	MET. CERAMIC
25H32CM-3	.250	.250	.130	.130	32	.025	.012	.250	.005	.100	.070	.045	.010	.010	MET. CERAMIC
25H32M	.250	.250	.130	.130	32	.025	.012	.250	.005	.047	.025	.016	.010	.010	KOVAR
25H32M-1	.250	.250	.130	.130	32	.025	.012	.250	.005	.100	.070	.045	.010	.010	KOVAR
3H32M-6	.250	.250	.140	.140	32	.050/.030	.012	.270	.005	.065	.045	.025	.010	.010	KOVAR
3H116M	.265	.265	.150	.150	16	.030	.012	.250	.005	.072	.045	.030	.010	.010	KOVAR
3H124M	.265	.265	.150	.150	24	.030	.012	.250	.005	.072	.045	.030	.010	.010	KOVAR
3HL28M-G4	.285	.285	.150	.150	28	.030	.015	.150	.005	.070	.050	.020	.015	.010	KOVAR
7HL12M	.285	.285	.165	.165	12	.070	.015	.150	.005	.067	.045	.020	.015	.010	KOVAR
5HL14M	.285	.285	.190	.190	14	.050	.015	.150	.005	.067	.045	.015	.010	.010	KOVAR
25HL28M	.285	.285	.190	.190	28	.025/.050	.010	.195	.005	.082	.055	.030	.010	.010	KOVAR
5LT20M	.325	.535	.220	.430	20	.050	.015	.250	.005	.085	.060	.020	.010	.010	KOVAR

4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
5M34M-3	.360	.500	.175	.235	34	.050	.017	.258	.005	.075	.045	.030	.010	.015	KOVAR
3LN32M-1G4	.375	.375	.200	.200	32	.030	.015	.250	.005	.070	.050	.020	.015	.010	KOVAR
3LN32M-G4	.375	.375	.250	.250	32	.030	.015	.250	.005	.070	.050	.020	.015	.010	KOVAR
25LN40M-1	.375	.375	.250	.250	40	.025	.012	.220	.005	.090	.060	.037	.010	.010	KOVAR
25LN40CM	.375	.375	.250	.250	40	.025	.012	.250	.005	.090	.060	.037	.010	.010	MET. CERAMIC
25LN48CM	.375	.375	.250	.250	48	.025	.012	.250	.005	.090	.060	.037	.010	.010	MET. CERAMIC
4LN36M-4	.375	.375	.255	.255	36	.040	.020	.400	.005	.090	.060	.037	.015	.010	KOVAR
4LN36M	.375	.375	.265	.265	36	.040	.020	.400	.005	.067	.045	.025	.010	.010	KOVAR
4LN36C	.375	.375	.265	.265	36	.040	.020	.400	.005	.067	.045	.025	.010	.010	CERAMIC
4LN36C-1	.375	.375	.265	.265	36	.040	.020	.400	.005	.090	.060	.037	.010	.010	CERAMIC
4LN36CM	.375	.375	.265	.265	36	.040	.020	.400	.005	.067	.045	.025	.010	.010	MET. CERAMIC
4LN36CM-1	.375	.375	.265	.265	36	.040	.020	.400	.005	.090	.060	.037	.010	.010	MET. CERAMIC
4LN36M-3	.375	.375	.265	.265	36	.040	.020	.400	.005	.090	.060	.037	.010	.010	KOVAR
4LN36M-5	.375	.375	.265	.265	36	.040	.020	.400	.005	.095	.060	.037	.010	.020	KOVAR
5LN24M-2	.375	.375	.265	.265	24	.050	.015	.300	.005	.090	.060	.037	.010	.010	KOVAR
5LN24C-2	.375	.375	.265	.265	24	.050	.015	.300	.005	.090	.060	.037	.010	.010	CERAMIC
4LN28CM	.375	.375	.265	.265	28	.040	.020	.400	.005	.067	.045	.025	.010	.010	MET. CERAMIC
3LN32C	.375	.375	.265	.265	32	.030	.012	.250	.005	.067	.045	.025	.010	.010	CERAMIC
3LN32C-1	.375	.375	.265	.265	32	.030	.012	.250	.005	.090	.060	.037	.010	.010	CERAMIC
3LN32CM	.375	.375	.265	.265	32	.030	.012	.250	.005	.067	.045	.025	.010	.010	MET. CERAMIC
3LN32CM-1	.375	.375	.265	.265	32	.030	.012	.250	.005	.090	.060	.037	.010	.010	MET. CERAMIC
3LN32CM-2	.375	.375	.265	.265	32	.030	.012	.250	.005	.067	.045	.025	.010	.010	MET. CERAMIC
3LN32CM-4	.375	.375	.265	.265	32	.030	.012	.250	.005	.082	.045	.025	.010	.010	MET. CERAMIC
3LN32M	.375	.375	.265	.265	32	.030	.012	.250	.005	.067	.045	.025	.010	.010	KOVAR
3LN32M-1	.375	.375	.265	.265	32	.030	.012	.250	.005	.090	.060	.037	.010	.010	KOVAR
3LN32M-2	.375	.375	.265	.265	32	.030	.012	.250	.005	.067	.045	.025	.010	.010	KOVAR



4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
25LN48M	.375	.375	.265	.265	48	.025	.012	.400	.005	.067	.045	.025	.010	.010	KOVAR
25LN48M-2	.375	.375	.265	.265	48	.025	.012	.400	.005	.077	.045	.025	.010	.020	KOVAR
25LN48M-1	.375	.375	.265	.265	48	.025	.012	.400	.005	.087	.055	.025	.010	.020	KOVAR
4LN36M-1	.375	.375	.270	.270	36	.040	.020	.400	.005	.090	.060	.037	.010	.010	KOVAR
5R30CM	.375	.625	.235	.485	30	.050	.015	.500	.005	.125	.085	.050	.010	.010	MET. CERAMIC
5R30CM-1	.375	.625	.235	.485	30	.050	.015	.500	.005	.125	.085	.050	.010	.010	MET. CERAMIC
35LS32CM	.378	.438	.238	.272	32	.035/.050	.010/.020	.100	.005	.085	.052	.020	.020	.020	MET. CERAMIC
35LS32M	.378	.438	.238	.272	32	.035/.050	.010/.020	.100	.005	.085	.052	.020	.020	.020	KOVAR
5P20M	.400	.400	.290	.290	20	.050	.015	.275	.005	.085	.060	.020	.010	.010	KOVAR
25P64M	.400	.400	.290	.290	64	.025	.010	.300	.005	.085	.060	.020	.010	.010	KOVAR
3RS32C	.430	.430	.265	.265	32	.030	.012	.240	.005	.082	.045	.025	.010	.025	CERAMIC
3RS32C-2	.430	.430	.265	.265	32	.030	.012	.240	.005	.072	.045	.025	.010	.015	CERAMIC
3RS32CM-1	.430	.430	.265	.265	32	.030	.012	.240	.005	.082	.045	.025	.010	.025	MET. CERAMIC
3RS32M	.430	.430	.265	.265	32	.030	.012	.240	.005	.082	.045	.025	.010	.025	KOVAR
5S28C-1	.440	.440	.250	.250	28	.050	.018	.325	.005	.110	.082	.050	.010	.010	CERAMIC
5S28M-1	.440	.440	.250	.250	28	.050	.018	.325	.005	.110	.082	.050	.010	.010	KOVAR
5S28M-G8	.440	.440	.250	.250	28	.050	.018	.325	.005	.125	.100	.040	.010	.010	KOVAR
10SN10C	.493	.955	.315	.712	10	.100/.200	.015	.200	.005	.070	.045	.020	.026	.010	CERAMIC
3TG64G	.545	.545	.270	.270	64	.030	.012	.250	.005	.110	.050	.030	.015	-	GLASS
35T60C	.545	.545	.330	.330	60	.035	.015	.250	.005	.065	.040	.022	.020	.010	CERAMIC
35T60CM	.545	.545	.330	.330	60	.035	.015	.250	.005	.065	.040	.022	.020	.015	MET. CERAMIC
35T60M	.545	.545	.330	.330	60	.035	.015	.250	.005	.065	.040	.022	.020	.015	KOVAR
3T64B-1	.545	.545	.330	.330	64	.030	.012	.250	.005	.125	.085	.050	.015	.015	BeO
3T64BM-1	.545	.545	.330	.330	64	.030	.012	.250	.005	.125	.085	.050	.015	.015	MET. BeO
3T64C	.545	.545	.330	.330	64	.030	.012	.250	.005	.065	.040	.022	.015	.015	CERAMIC
3T64C-1	.545	.545	.330	.330	64	.030	.012	.250	.005	.125	.085	.050	.015	.015	CERAMIC

4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO. LEADS	LEAD SPACING	LEAD WIDTH	MIN. LEAD LENGTH	LEAD THK.	MAX. O/A HGT.	MIN. INT. HGT.	LEAD HGT.	MIN. BOND PAD	BASE THK.	BASE MAT'L.
	W	L	W	L											
3T64CM	.545	.545	.330	.330	64	.030	.012	.250	.005	.065	.040	.022	.015	.015	MET. CERAMIC
3T64CM-1	.545	.545	.330	.330	64	.030	.012	.250	.005	.125	.085	.050	.015	.015	MET. CERAMIC
3T64M	.545	.545	.330	.330	64	.030	.012	.250	.005	.065	.040	.022	.015	.015	KOVAR
3T64M-1	.545	.545	.330	.330	64	.030	.012	.250	.005	.125	.085	.050	.015	.015	KOVAR
3T64M-3	.545	.545	.330	.330	64	.030	.012	.515	.005	.125	.085	.050	.015	.015	KOVAR
4T48CM	.545	.545	.350	.350	48	.040	.015	.610	.005	.085	.060	.022	.020	.015	MET. CERAMIC
3T56M-G	.545	.545	.375	.375	56	.030	.012	.250	.005	.065	.040	.022	.015	.015	KOVAR
4U64M-6	.625	.625	.200	.200	64	.040	.012	.250	.005	.085	.055	.026	.015	.015	KOVAR
4U64C	.625	.625	.300	.300	64	.040	.012	.250	.005	.085	.055	.026	.015	.015	CERAMIC
4U64C-2	.625	.625	.300	.300	64	.040	.012	.250	.007	.085	.055	.026	.015	.015	CERAMIC
4U64C-4	.625	.625	.300	.300	64	.040	.012	.250	.005	.085	.055	.026	.015	.015	CERAMIC
4U64CM	.625	.625	.300	.300	64	.040	.012	.250	.007	.085	.055	.026	.015	.015	MET. CERAMIC
4U64CM-2	.625	.625	.300	.300	64	.040	.012	.250	.005	.085	.055	.026	.015	.015	MET. CERAMIC
4U64M	.625	.625	.300	.300	64	.040	.012	.250	.005	.085	.055	.026	.015	.015	KOVAR
4U64M-2	.625	.625	.300	.300	64	.040	.012	.250	.007	.085	.055	.026	.015	.015	KOVAR
3U84C	.625	.625	.340	.340	84	.030	.012	.250	.005	.085	.055	.026	.015	.015	CERAMIC
3U84CM	.625	.625	.340	.340	84	.030	.012	.250	.005	.085	.055	.026	.015	.015	MET. CERAMIC
3U84CM-1	.625	.625	.340	.340	84	.030	.012	.250	.005	.085	.055	.026	.015	.015	MET. CERAMIC
3U84M	.625	.625	.340	.340	84	.030	.012	.250	.005	.085	.055	.026	.015	.015	KOVAR
4U64BM	.625	.625	.350	.350	64	.040	.012	.250	.005	.085	.055	.026	.015	.015	BeO
3U84M-10	.625	.625	.400	.400	84	.030	.012	.250	.005	.085	.055	.026	.015	.015	KOVAR
25U48M-1G10	.625	.625	.460	.460	48	.025	.012	.350	.005	.110	.080	.035	.020	.020	W/Cu
25U50M-G10	.625	.625	.460	.460	50	.025	.012	.350	.005	.110	.080	.035	.020	.020	W/Cu
25U64CM-1	.625	.625	.470	.470	64	.025	.012	.500	.005	.135	.090	.050	.010	.025	MET. CERAMIC
25U64CM-2	.625	.625	.470	.470	64	.025	.012	.500	.005	.125	.090	.050	.010	.015	MET. CERAMIC
25U64M-2	.625	.625	.470	.470	64	.025	.012	.500	.005	.125	.090	.050	.010	.015	KOVAR

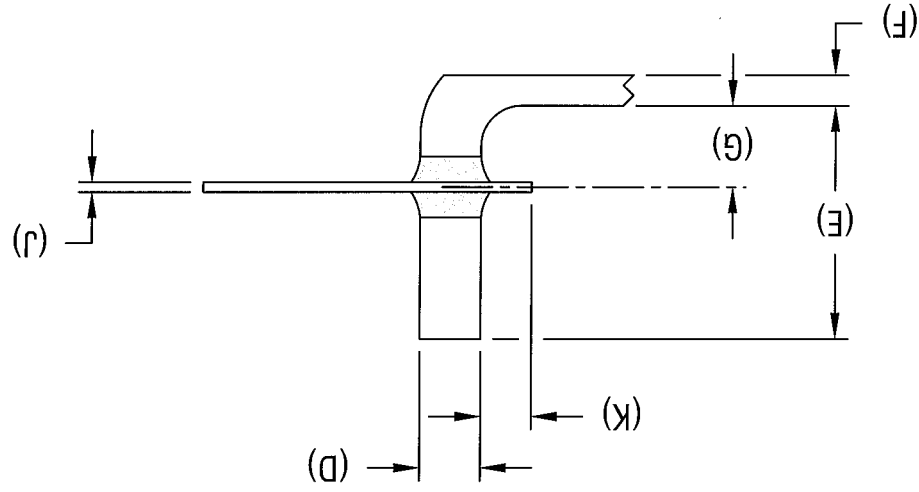
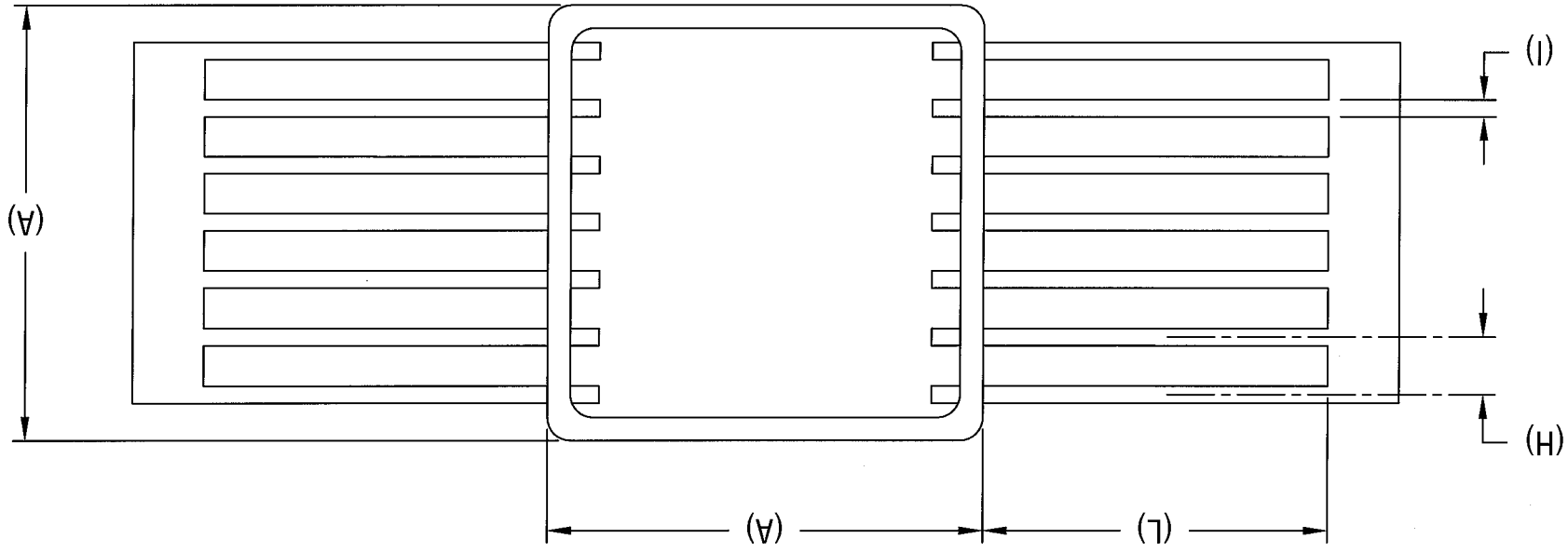


4-SIDED ALUMINA / GLASS SIDEWALL PACKAGES

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	PKG. SIZE		GLASS FREE		NO.	LEAD	LEAD	MIN. LEAD	LEAD	MAX. O/A	MIN. INT.	LEAD	MIN.	BASE	BASE
	W	L	W	L	LEADS	SPACING	WIDTH	LENGTH	THK.	HGT.	HGT.	HGT.	BOND PAD	THK.	MAT'L.
25U72M	.625	.625	.490	.490	72	.025	.012	.300	.005	.125	.090	.055	.010	.015	KOVAR
25W148C	.940	1.000	.450	.450	148	.025	.012	.250	.005	.075	.045	.020	.010	.020	CERAMIC
25W148C-1	.940	1.000	.450	.450	148	.025	.012	.250	.005	.155	.115	.085	.010	.020	CERAMIC
25W148M	.940	1.000	.450	.450	148	.025	.012	.250	.005	.075	.045	.020	.010	.020	KOVAR
25W148M-1	.940	1.000	.450	.450	148	.025	.012	.250	.005	.155	.115	.085	.010	.020	KOVAR
25W148M-2	.940	1.000	.750	.800	148	.025	.012	.730	.006	.145	.105	.065	.010	.020	KOVAR
25W148M-3	.940	1.000	.750	.800	148	.025	.012	.250	.007	.155	.115	.085	.010	.020	KOVAR
25W148M-4	.940	1.000	.750	.800	148	.025	.012	.730	.006	.165	.125	.065	.010	.020	KOVAR
25W148M-8	.940	1.000	.750	.800	148	.025	.012	.250	.007	.145	.105	.065	.010	.020	KOVAR
25W148SR	.940	1.000	.750	.800	148	.025	.012	.250	.007	.145	.105	.065	.010	.020	KOVAR
25W94M-G12	.940	1.000	.750	.800	94	.025	.012	.250	.005	.110	.080	.035	.020	.020	W/Cu
25W96M-G10	.940	1.000	.750	.800	96	.025	.012	.250	.005	.110	.080	.035	.020	.020	W/Cu
25W98M-G8	.940	1.000	.750	.800	98	.025	.012	.250	.005	.110	.080	.035	.020	.020	MOLY
25LZ160M	1.250	1.250	1.000	1.000	160	.025	.010	.500	.005	.165	.125	.030	.030	.020	KOVAR
5LZ84M-1	1.250	1.250	1.000	1.000	84	.050	.020	.500	.007	.165	.125	.030	.030	.020	KOVAR
5LZ84MG1	1.250	1.250	1.000	1.000	84	.050	.020	.500	.007	.157	.105	.030	.030	.020	KOVAR

2-SIDED METAL FLATPACKS





2-SIDED METAL FLATPACKS

MSI ELECTRONIC CATALOG

MSI	PART	PKG. SIZE		TOTAL # LEADS	# GROUND LEADS	WALL THK.	INTERNAL HGT.	BASE THK.	LEAD HGT.	LEAD SPACING	LEAD WIDTH	LEAD THK.	LEAD LENGTH		MIN. EXTERNAL LEAD LENGTH
		(A)	(B)										(J)	(K)	
(L)		(A)	(B)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	
	F430-1	.305	.440	14	0	.040	.110	.010	.035	.050	.015	.005	.025	.500	
	F38-1	.380	.380	14	0	.020	.077	.010	.030	.050	.015	.005	.025	.500	
	F5138-1	.385	.510	8	4	.040	.115	.010	.047	.100/.150	.018	DIA.	.035	.300	
	F5138-2	.385	.510	8	4	.040	.120	.010	.052	.100/.150	.015	DIA.	.045	.320	
	F479-1	.470	.795	12	0	.040	.160	.020	.055	.100	.015	.010	.030	.500	
	F479-2	.470	.795	12	0	.040	.130	.020	.050	.100	.015	.010	.030	.630	
	F949-1	.490	.998	4	0	.040	.100	.040	.035	.150	.015	.010	.050	.500	
	F949-2	.490	.998	4	0	.040	.180	.040	.035	.150	.015	.010	.050	.500	
	F949-3	.490	.998	4	0	.040	.180	.040	.035	.150	.015	.010	.030	.500	
	F50-1	.500	.500	16	0	.040	.095	.010	.030	.050	.015	.010	.025	.500	
	F62-11	.625	.625	4	0	.040	.125	.040	.060	.100	.016	.010	.050	.500	
	F62-1	.625	.625	10	0	.040	.125	.040	.060	.100	.016	.010	.050	.500	
	F62-2	.625	.625	10	0	.040	.130	.020	.060	.100	.015	.010	.035	.500	
	F62-7	.625	.625	10	7	.040	.120	.015	.041	.100	.015	.010	.035	.500	
	F62-8	.625	.625	10	7	.040	.120	.015	.041	.100	.015	.010	.035	.425	
	F62-12	.625	.625	10	0	.040	.115	.010	.060	.100	.015	.010	.025	.500	
	F62-13	.625	.625	10	0	.040	.130	.020	.060	.100	.015	.010	.035	.200	
	F62-3	.625	.625	18	0	.040	.105	.020	.045	.050	.015	.010	.035	.500	
	F62-15	.625	.625	18	0	.040	.120	.020	.057	.050	.015	.010	.035	.500	
	F62-4	.625	.625	20	0	.040	.110	.020	.034	.050	.015	.010	.025	.750	
	F62-5	.625	.625	20	11	.040	.110	.020	.034	.050	.015	.010	.025	.300	
	F62-9	.625	.625	20	11	.040	.110	.020	.034	.050	.015	.010	.025	.300	
	F62-6	.625	.625	22	0	.040	.105	.020	.050	.050	.015	.010	.025	.500	
	F62-14	.625	.625	22	0	.040	.120	.020	.057	.050	.015	.010	.025	.500	
	F63-1	.635	.635	20	0	.035	.100	.020	.052	.050	.015	.010	.035	.500	
	F105-4	.650	1.055	4	0	.070	.115	.020	.045	.450	.011	DIA.	.025	.500	

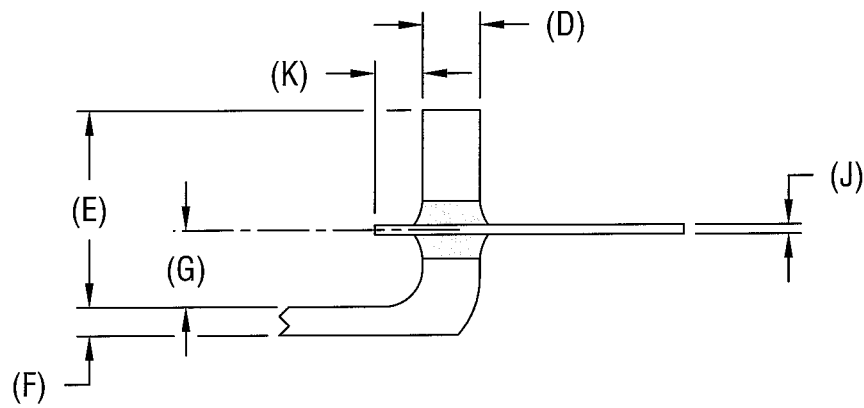
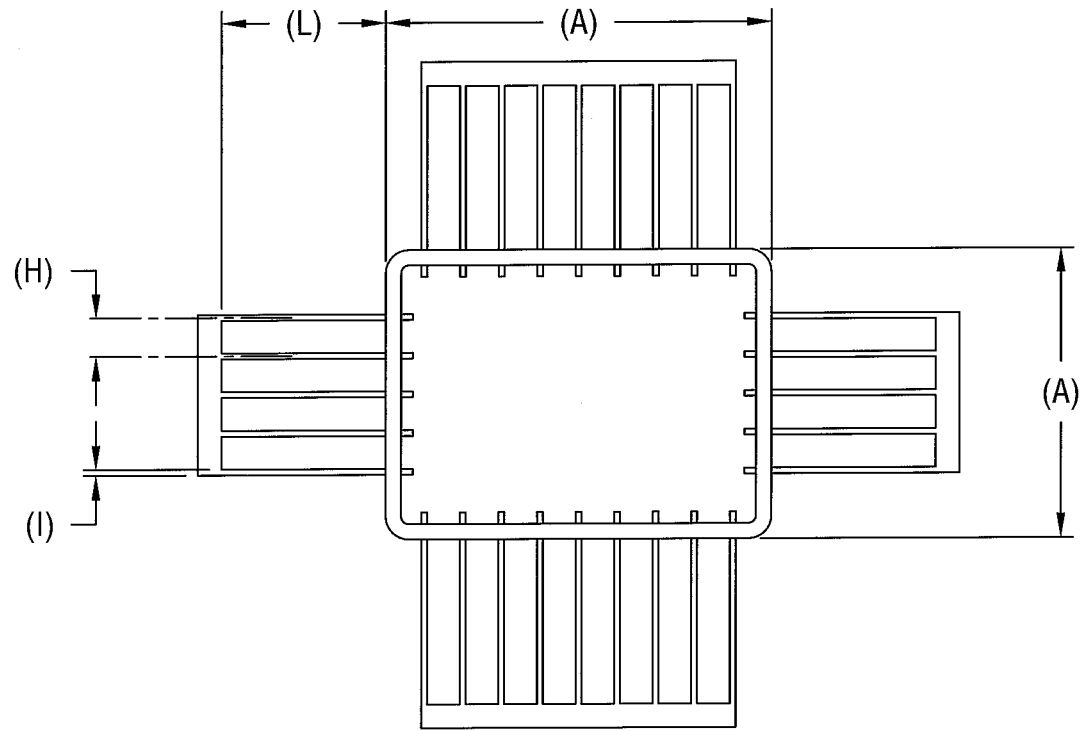


2-SIDED METAL FLATPACKS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	PKG. SIZE		TOTAL # LEADS	# GROUND LEADS	WALL THK.	INTERNAL HGT.	BASE THK.	LEAD HGT.	LEAD SPACING	LEAD WIDTH	LEAD THK.	LEAD LENGTH	
	W	L										INTERNAL	EXTERNAL
												(K)	(L)
F10565-1	.650	1.055	20	0	.040	.120	.020	.035	.050	.015	.010	.035	.500
F10565-2	.650	1.055	20	0	.040	.120	.020	.040	.050	.015	.010	.035	.500
F10565-3	.650	1.055	36	0	.040	.160	.040	.045	.050	.015	.010	.050	.500
F11366-1	.660	1.130	34	0	.040	.110	.020	.037	.050/.100	.010	.010	.035	.600
F7575-3	.750	.750	12	0	.040	.160	.040	.060	.050	.015	.010	.030	.500
F7575-1	.750	.750	18	0	.040	.115	.020	.060	.050	.015	.010	.050	.500
F7575-5	.750	.750	18	1	.040	.115	.020	.060	.050	.015	.010	.030	.500
F7575-2	.750	.750	22	0	.040	.085	.020	.060	.050	.015	.010	.050	.500
F7575-4	.750	.750	26	0	.040	.110	.020	.050	.050	.015	.010	.050	.500
F7575-6	.750	.750	6	0	.040	.115	.020	.045	.100	.015	.010	.025	.500
F10075-4	.750	1.000	32	0	.040	.130	.015	.050	.050	.015	.010	.030	.770
F9999-2	.995	.995	11	0	.040	.115	.020	.045	.100/.150	.011	DIA.	.025	.500
F9999-1	.995	.995	30	0	.040	.115	.020	.060	.050	.015	.010	.030	.500
F11818-5	1.180	1.180	10	0	.040	.115	.040	.045	.100	.015	.010	.030	.500
F125125-1	1.250	1.250	14	0	.040	.150	.040	.060	.050	.015	.010	.100	.500
F237237-4	2.375	2.375	133	0	.040	.125	.040	.052	.050	.015	.010	.035	.500

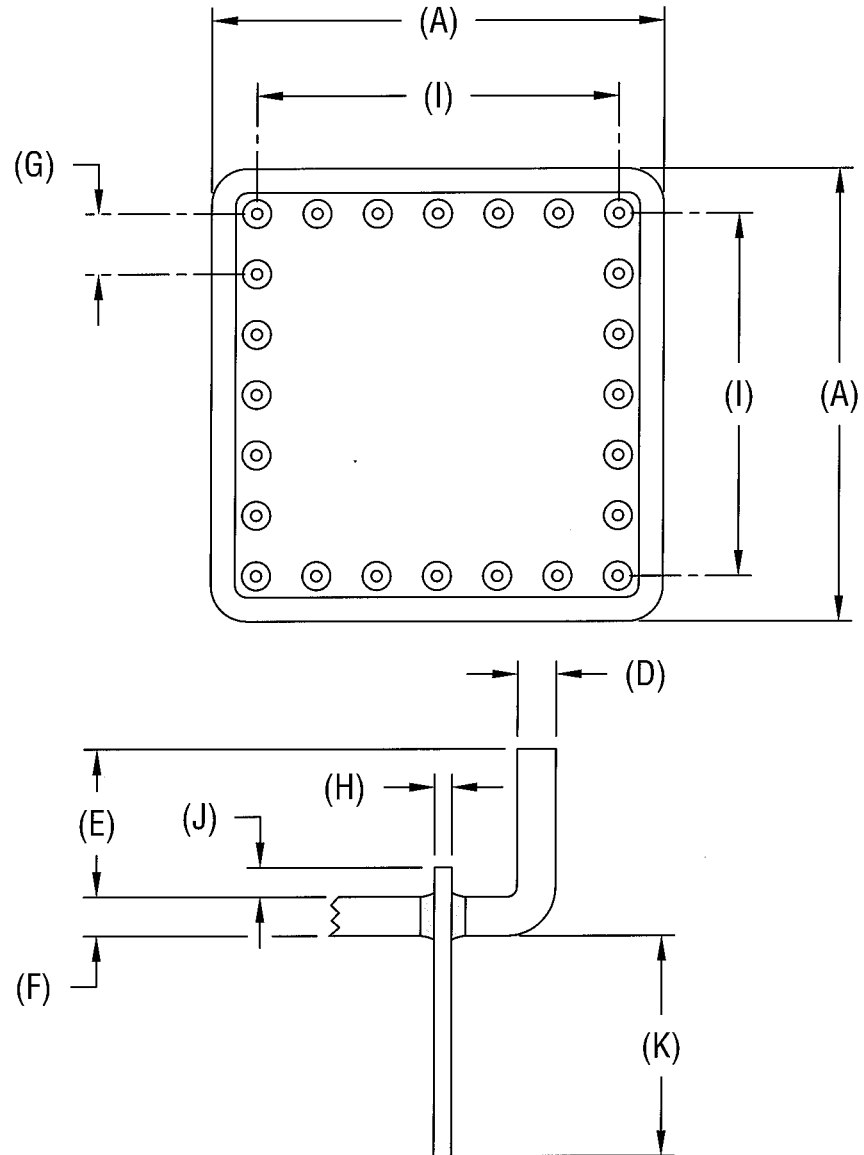
4-SIDED METAL FLATPACKS



4-SIDED METAL FLATPACKS

MSI ELECTRONIC CATALOG													
MSI PART NUMBER	(A)		(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
	PKG. SIZE		TOTAL # LEADS	# GROUND LEADS	WALL THK.	INTERNAL HGT.	BASE THK.	LEAD HGT.	LEAD SPACING	LEAD WIDTH	LEAD THK.	INTERNAL LEAD LENGTH	MIN. EXTERNAL LEAD LENGTH
	W	L											
F8848-1	.480	.880	5	0	.040	.140	.015	.070	.100	.015	.010	.125/.090	.400
F5050-2	.500	.500	12	4	.040	.110	.020	.034	.100	.015	.010	.030	.500
F7550-1	.500	.750	16	4	.040	.110	.020	.034	.100	.015	.010	.030	.500
F6262-19	.625	.625	4	1	.040	.140	.020	.045	.100	.015	.010	.025	.500
F6262-10	.625	.625	34	25	.040	.110	.020	.035	.050	.015	.010	.025	.300
F10075-1	.750	1.000	28	0	.040	.160	.020	.050	.100	.015	.010	.030	.500
F10075-2	.750	1.000	28	0	.040	.130	.020	.055	.100	.015	.010	.030	.500
F10075-3	.750	1.000	28	10	.040	.130	.020	.050	.100	.015	.010	.030	.500
F13679-1	.790	1.360	20	0	.040	.175	.020	.045	.200/.300	.015	.010	.030	.100
F118118-1	1.180	1.180	36	0	.040	.200	.020	.055	.100	.015	.010	.035	.500
F118118-2	1.180	1.180	68	0	.040	.130	.020	.040	.050	.015	.010	.035	.425
F118118-3	1.180	1.180	68	0	.040	.130	.015	.035	.050	.015	.010	.035	.425
F118118-4	1.180	1.180	68	0	.040	.130	.015	.035	.050	.015	.010	.037	.200
F118118-7	1.180	1.180	68	0	.040	.130	.015	.035	.050	.015	.010	.037	.200
F118118-6	1.180	1.180	72	0	.040	.105	.020	.037	.050	.015	.010	.035	.500
F125125-2	1.250	1.250	68	0	.040	.130	.020	.052	.050	.015	.010	.035	.500
F237237-4	2.375	2.375	133	0	.040	.125	.040	.052	.050	.015	.010	.035	.500
F237237-2	2.375	2.375	176	0	.040	.125	.040	.052	.050	.015	.010	.035	.500
F237237-3	2.375	2.375	176	0	.040	.300	.040	.235	.050	.015	.010	.025	.750

METAL PLUG-IN PACKAGE





PLUG-INS

MSI ELECTRONIC CATALOG

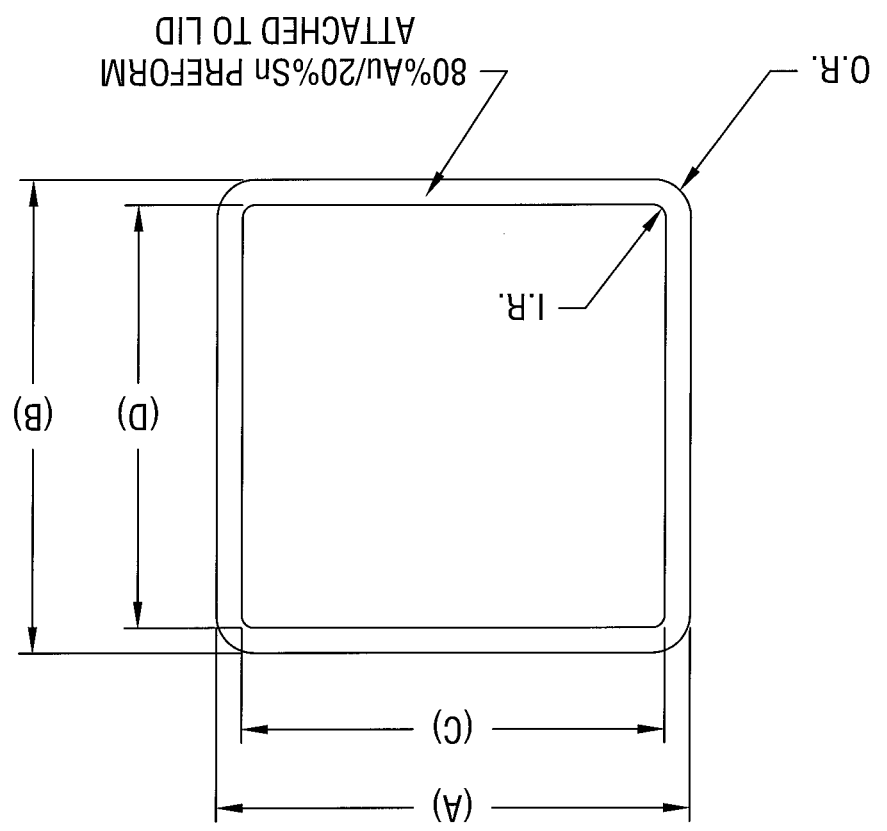
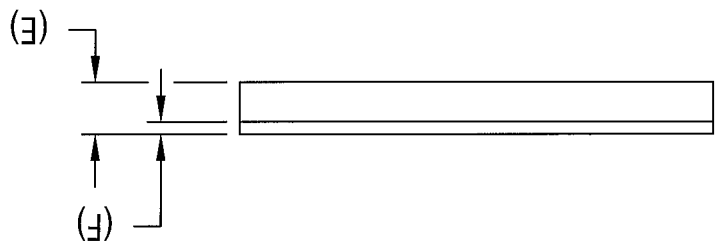
MSI PART NUMBER	(A)		(B)	(C)	(D)	(E)	(F)	(H)	(G)	(I)		(J)	(K)
	PKG. SIZE		TOTAL # LEADS	# GROUND LEADS	WALL THK.	INTERNAL HGT.	BASE THK.	LEAD DIA.	LEAD SPACING	BASIC		POST HEIGHT	EXTERNAL LEAD LENGTH
	W	L								W	L		
P7947-1	.470	.795	14	0	.040	.095	.040	.018	.100	.300	.600	.050	.240
P7947-2	.470	.795	14	0	.040	.180	.040	.018	.100	.300	.600	.130	.105
P7947-4	.470	.795	14	1	.040	.190	.040	.018	.100	.300	.600	.130	.105
P7949-1	.495	.795	14	0	.040	.095	.040	.018	.100	.300	.600	.025	.130
P6262-1-155	.625	.625	10	0	.040	.100	.040	.018	.100	.400	.400	.035	.155
P6262-1-205	.625	.625	10	0	.040	.100	.040	.018	.100	.400	.400	.035	.205
P7575-1	.750	.750	14	0	.040	.160	.040	.018	.100	.600	.600	.035	.155
P7575-2	.750	.750	14	0	.040	.125	.040	.018	.100	.600	.600	.030	.255
P20975-1	.750	2.095	40	0	.040	.200	.040	.018	.100	.600	1.900	.045	.210
P20975-2	.750	2.095	40	0	.040	.100	.040	.018	.100	.600	1.900	.060	.210
P12777-1	.770	1.270	24	0	.040	.160	.040	.018	.100	.600	1.100	.025	.250
P12777-2	.770	1.270	24	0	.040	.110	.040	.018	.100	.600	1.100	.025	.250
P12777-3	.770	1.270	24	0	.040	.120	.040	.018	.100	.600	1.100	.025	.250
P12777-4	.770	1.270	24	0	.040	.120	.040	.018	.100	.600	1.100	.040	.240
P12777-5	.770	1.270	24	3	.040	.120	.040	.018	.100	.600	1.100	.050	.250
P16977-2	.770	1.690	32	0	.040	.125	.040	.018	.100	.600	1.500	.020	.250
P16977-1	.770	1.690	42	0	.040	.125	.040	.018	.100	.600	1.500	.020	.250
P18977-1	.775	1.895	36	0	.040	.115	.040	.018	.100	.600	1.700	.035	.280
P28777-1	.775	2.875	56	0	.040	.160	.040	.018	.100	.600	2.700	.030	.255
P9580-1	.800	.950	16	0	.040	.150	.040	.018	.100	.600	.700	.030	.200
P9585-1	.855	.950	16	0	.040	.125	.040	.018	.100	.700	.700	.025	.240
P9999-2	.995	.995	18	0	.040	.160	.040	.018	.100	.800	.800	.050	.200
P9999-6	.995	.995	18	0	.040	.160	.040	.018	.100	.800	.800	.035	.250
P9999-5	.995	.995	18	13	.040	.135	.040	.018	.100	.800	.800	.050	.185
P9999-1	.995	.995	32	0	.040	.160	.040	.018	.100	.800	.800	.050	.200
P9999-3	.995	.995	32	0	.040	.175	.040	.018	.100	.800	.800	.030	.100



PLUG-INS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)		(B)	(C)	(D)	(E)	(F)	(H)	(G)	(I)		(J)	(K)
	PKG. SIZE		TOTAL #	# GROUND	WALL	INTERNAL	BASE	LEAD	LEAD	BASIC		POST	EXTERNAL
	W	L	LEADS	LEADS	THK.	HGT.	THK.	DIA.	SPACING	W	L	HEIGHT	LEAD LENGTH
P9999-4	.995	.995	32	0	.040	.140	.040	.018	.100	.800	.800	.035	.100
P150100-1	1.000	1.500	28	0	.040	.355	.040	.018/.025	.100	.800	1.300	.140	.250
P150100-2	1.000	1.500	28	0	.040	.265	.040	.018	.100	.800	1.300	.140	.250
P150100-3	1.000	1.500	28	0	.040	.195	.040	.018	.100	.800	1.300	.140	.250
P150100-4	1.000	1.500	28	0	.040	.355	.040	.018	.100	.800	1.300	.140	.250
P150100-5	1.000	1.500	28	0	.040	.195	.040	.018	.100	.800	1.300	.140	.250
P137107-1	1.070	1.375	24	0	.040	.140	.040	.018	.100	.900	1.100	.050	.125
P173107-1	1.070	1.730	32	1	.040	.140	.040	.018	.100	.900	1.500	.050	.185
P174114-1	1.140	1.740	32	0	.040	.155	.040	.018	.100	.900	1.500	.035	.175
P174114-2	1.140	1.740	8	0	.040	.100	.040	.018	.100	.900	1.500	.035	.175
P214114-1	1.140	2.140	40	0	.040	.200	.040	.018	.100	.900	1.900	.045	.210
P125125-1	1.250	1.250	24	0	.040	.125	.040	.018	.100	1.100	1.100	.050	.250
P125125-2	1.250	1.250	24	0	.040	.120	.040	.018	.100	1.100	1.100	.030	.250
P125125-7	1.250	1.250	24	0	.040	.140	.040	.018	.100	1.100	1.100	.035	.190
P125125-3	1.250	1.250	44	0	.040	.160	.040	.018	.100	1.100	1.100	.050	.250
P125125-4	1.250	1.250	44	0	.040	.125	.040	.018	.100	1.100	1.100	.050	.250
P125125-5	1.250	1.250	44	0	.040	.250	.040	.018	.100	1.100	1.100	.030	.250
P125125-6	1.250	1.250	44	0	.040	.140	.040	.018	.100	1.100	1.100	.035	.190
P230140-1	1.400	2.300	62	0	.040	.130	.040	.030	.100	1.100	2.000	.050	.205
P238158-2	1.580	2.380	46	0	.040	.160	.040	.018	.100	1.300	2.200	.035	.250
P238158-3	1.580	2.380	46	0	.040	.160	.040	.018	.100	1.300	2.200	.135	.250
P238158-4	1.580	2.380	46	0	.040	.160	.040	.018	.100	1.300	2.200	.200	.250
P238158-1	1.580	2.380	90	0	.040	.160	.040	.018	.100	1.100/ 1.300	2.100/ 2.200	.035	.250
P284170-1	1.700	2.845	28	0	.050	.145	.050	.018	.200	1.500	2.600	.030	.140
P284170-2	1.700	2.845	28	0	.050	.145	.050	.018	.200	1.500	2.600	.030	.140
P220220-1	2.200	2.200	42	0	.040	.140	.040	.018	.100	1.400	1.500	.050	.185



COMBINATION LID



COMBINATION LIDS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	OUTSIDE DIM.		INSIDE DIM.		LID THK.	SOLDER THK.	L.R.	O.R.
	(A)	(B)	(C)	(D)				
LSA-5A	.115	.115	.077	.077	.010	.0015	.008	.020
LSA-5	.125	.125	.087	.087	.010	.0015	.008	.020
LSHB-5A	.155	.240	.111	.196	.010	.0015	.020	.010
LSB-5A	.155	.255	.115	.215	.010	.0015	.006	.010
LSBU-5	.155	.460	.105	.410	.015	.0015	.010	.017
LSC-5A	.160	.160	.110	.110	.010	.0015	.005	.020
LSC-5	.166	.166	.126	.126	.010	.0015	.008	.020
LSD-5	.205	.205	.168	.168	.010	.0015	.008	.020
LSHS-5A	.230	.440	.186	.396	.010	.0015	.020	.017
LSH-5B	.240	.240	.190	.190	.010	.0021	.005	.015
LSH-5A	.240	.240	.200	.200	.010	.0018	.010	.010
LSJ-5A	.240	.365	.180	.305	.010	.0015	.020	.030
LSJ-5	.240	.490	.200	.450	.010	.0015	.020	.030
LSF-5A	.240	.742	.183	.642	.010	.00175	.015	.025
LSHK-5A	.246	.365	.196	.315	.010	.0015	.020	.017
LSJ-5	.250	.375	.190	.315	.010	.0015	.020	.030
LSF-5	.250	.752	.193	.652	.010	.00175	.015	.025
LSHI-5A	.255	.255	.217	.217	.010	.0018	.006	.020
LSK-5A	.256	.365	.206	.315	.010	.0021	.020	.019
LSK-H	.256	.365	.206	.315	.010	.0021	.020	.019
LSK-5	.266	.375	.217	.326	.010	.0015	.020	.019
LSHL-5	.280	.280	.235	.235	.010	.0015	.012	.020
LSLT-5	.320	.530	.250	.460	.010	.0015	.020	.017
LST-5C	.350	.350	.300	.300	.010	.0015	.020	.030
LSM-5	.350	.490	.250	.390	.010	.002	.007	.030

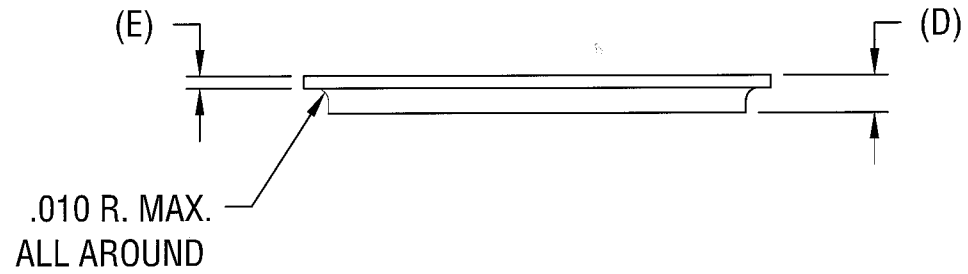
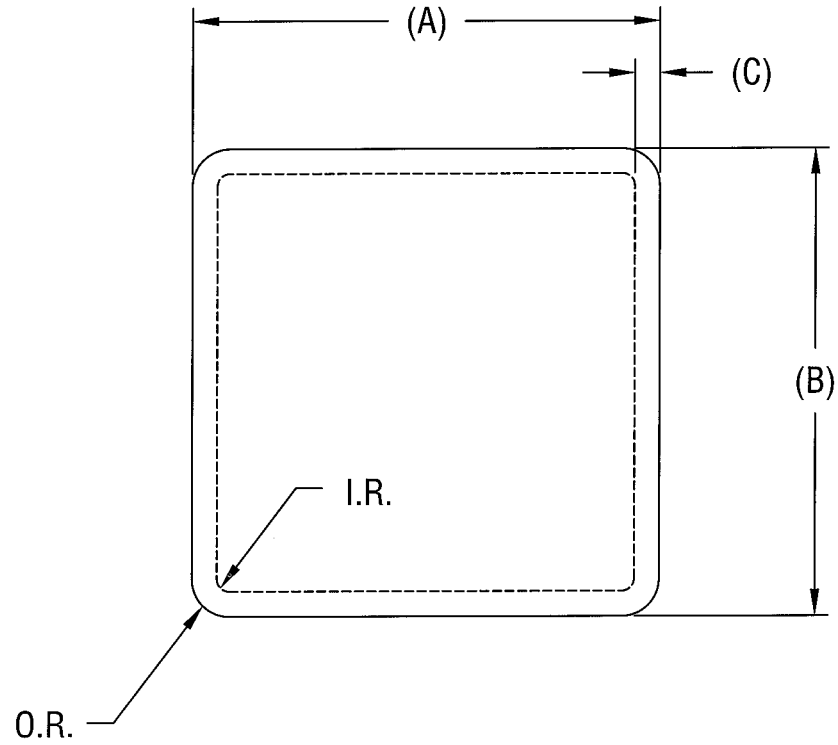


COMBINATION LIDS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	OUTSIDE DIM.		INSIDE DIM.		L	W	L.R.	O.R.
	(A)	(B)	(C)	(D)				
LSC-5	.350	.270	.640	.010	.00175	.015	.025	
LSE-5B	.365	.320	.320	.010	.0015	.020	.030	
LSR-5A	.365	.615	.315	.010	.002	.007	.030	
LSR-5	.375	.625	.315	.010	.002	.007	.030	
LSR-H	.375	.625	.315	.010	.0025	.007	.030	
LSP-5	.390	.390	.325	.010	.0021	.020	.030	
LSRS-5	.420	.420	.350	.010	.0015	.020	.030	
LSS-5	.431	.380	.380	.010	.0015	.020	.030	
LSSN-5A	.483	.945	.405	.015	.0015	.020	.020	
LSSN-5B	.483	.945	.405	.010	.0015	.020	.020	
LSQ-5	.500	.625	.400	.010	.002	.007	.030	
LSSW-5A	.524	.986	.444	.015	.0015	.020	.017	
LST-5A	.540	.540	.460	.015	.0017	.020	.030	
LST-5	.545	.545	.445	.015	.0017	.020	.030	
LSU-5A	.615	.615	.535	.010	.0015	.015	.020	
LSU-5B	.615	.615	.535	.015	.0015	.020	.020	
LSX-5	.875	.943	.775	.010	.0025	.015	.005	
LSX-5B	.875	.943	.775	.015	.0025	.015	.005	
LSW-5A	.930	.990	.840	.900	.0021	.020	.020	
LSW-5	.940	1.000	.840	.900	.0017	.020	.020	

STEPPED LIDS





STEPPED LIDS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)	(B)	(C)	(D)	(E)	I.R.	O.R.
	OUTSIDE DIM.		WALL	LID	STEP		
	W	L	THK.	THK.	THK.		
SL-2521	.210	.250	.026	.010	.0035/.005	.030	SHARP
SL-24	.245	.245	.025	.015	.005	.010	.020
SL-24-1	.245	.245	.030	.010	.005	.010	.020
SL-2550	.245	.495	.023	.010	.0045/.0055	.015	.020
SL-4430	.300	.435	.050	.010	.004/.006	.035	.057
SL-3838	.375	.375	.030	.010	.0035/.0055	.035	.017
SL-6237	.375	.620	.050	.015	.004/.006	.020/.040	.055/.060
SL-6238	.385	.625	.050	.015	.004/.006	.020/.040	.055/.060
SL-4779	.465	.790	.050	.015	.004/.006	.030	.060
SL-7748	.480	.775	.062/.067	.010	.0043	.020	.010
SL-8250	.485	.815	.050	.010	.0045	.050	.060
SL-9949	.485	.993	.050	.015	.004/.006	.020/.040	.055/.060
SL-49-2	.490	.490	.040	.010	.004/.006	.020/.040	.055/.060
SL-7449-1	.490	.740	.040	.010	.004/.006	.020/.040	.055/.060
SL-7949	.490	.790	.050	.015	.004/.006	.020/.040	.055/.060
SL-8949	.490	.890	.050	.015	.004/.006	.020/.040	.055/.060
SL-10649	.493	1.065	.050	.015	.004/.006	.020/.040	.055/.060
SL-49	.495	.495	.0475	.010	.0035/.005	.040	.020/.025
SL-49-1	.495	.495	.050	.010	.004/.006	.020/.040	.055/.060
SL-7449	.495	.745	.050	.010	.004/.006	.020/.040	.055/.060
SL-9949-1	.495	.995	.075	.010	.0045	.025	.055
SL-6552	.510	.645	.030/.040	.010	.005	.031	SHARP
SL-10952	.525	1.095	.050	.015	.004/.006	.020/.040	.055/.060
SL-10854	.540	1.080	.050	.015	.005	.020	.060
SL-15956	.560	1.590	.050	.015	.004/.006	.020/.040	.055/.060
SL-62-1	.620	.620	.0425	.010	.0045	.025	.025



STEPPED LIDS

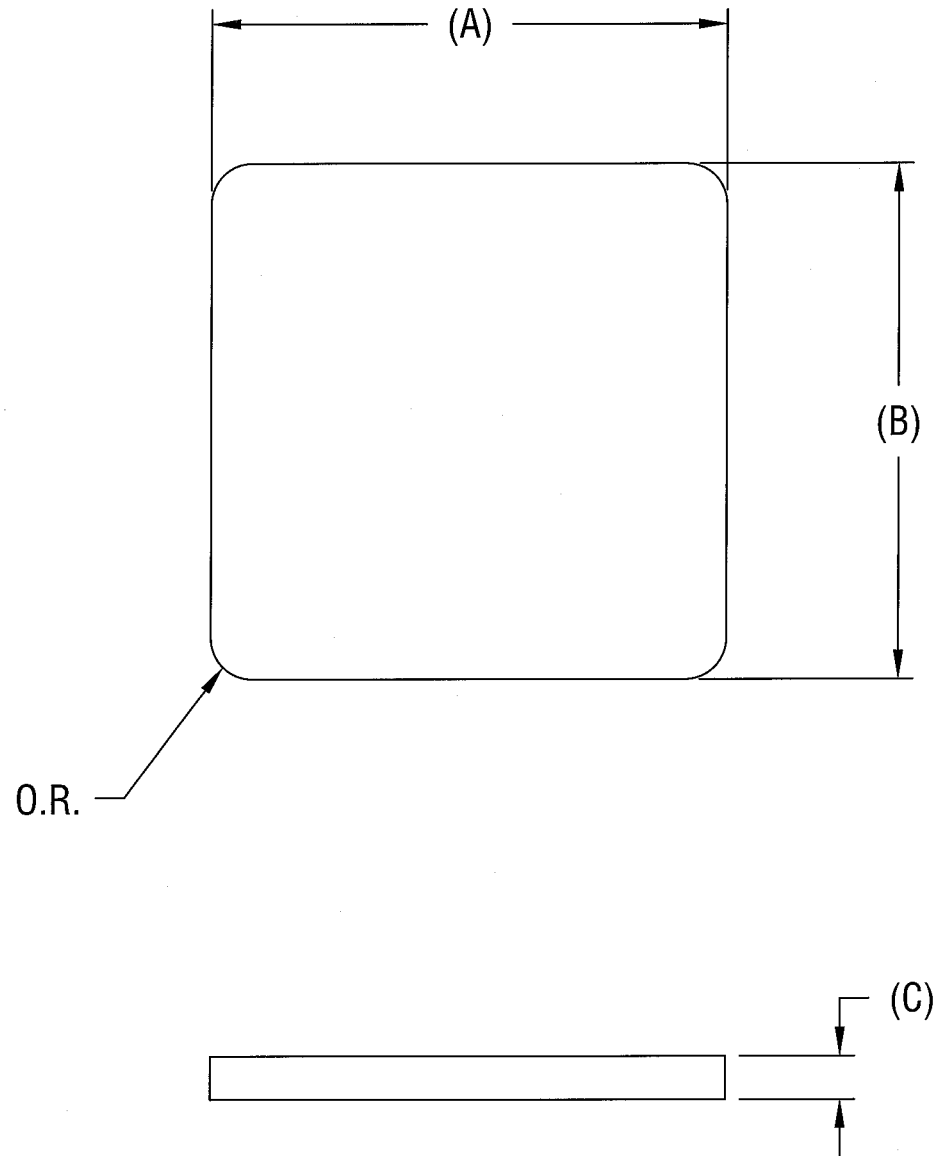
MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)	(B)	(C)	(D)	(E)	I.R.	O.R.
	OUTSIDE DIM.		WALL	LID	STEP		
	W	L	THK.	THK.	THK.		
SL-62	.620	.620	.050	.015	.004/.006	.020/.040	.055/.060
SL-1300625	.620	1.295	.0625	.010	.0035/.005	.072	.010
SL-10565	.645	1.050	.050	.015	.004/.006	.020/.040	.055/.060
SL-11467	.670	1.145	.070	.015	.004/.006	.020	.060
SL-11467-1	.670	1.145	.070	.015	.004/.006	.020	.060
SL-75	.745	.745	.050	.015	.004/.006	.020/.040	.055/.060
SL-10075	.745	.995	.050	.015	.004/.006	.020/.040	.055/.060
SL-76	.765	.765	.050	.015	.004/.006	.020/.040	.055/.060
SL-12777	.765	1.265	.050	.015	.004/.006	.020/.040	.055/.060
SL-16977	.765	1.685	.050	.015	.005	.030	.055
SL-18976	.765	1.890	.050	.015	.004/.006	.020/.040	.055/.060
SL-28777	.770	2.870	.050	.015	.005	.035	.086
SL-9478	.785	.940	.050	.015	.004/.006	.020/.040	.055/.060
SL-9386	.868	.935	.053	.020	.0035	.030	.010
SL-16488	.885	1.645	.050	.015	.004/.006	.020/.040	.055/.060
SL-11393	.931	1.135	.050	.015	.004/.006	.020/.040	.055/.060
SL-11293	.935	1.125	.050	.015	.004/.006	.020/.040	.055/.060
SL-99	.990	.990	.050	.015	.004/.006	.020/.040	.055/.060
SL-22999	.995	2.295	.050	.015	.004/.006	.020/.040	.055/.060
SL-136103	1.035	1.365	.050	.015	.004/.006	.020/.040	.055/.060
SL-146106	1.065	1.465	.050	.015	.004/.006	.020/.040	.055/.060
SL-109	1.095	1.095	.050	.015	.004/.006	.020/.040	.055/.060
SL-174114	1.135	1.735	.050	.015	.004/.006	.020/.040	.055/.060
SL-192113	1.135	1.925	.050	.015	.004/.006	.020/.040	.055/.060
SL-214114-1	1.135	2.135	.050	.015	.004/.006	.035	.060
SL-118-1	1.175	1.175	.050	.015	.004/.006	.020/.055	.060

STEPPED LIDS

MSI ELECTRONIC CATALOG							
MSI PART NUMBER	(A)	(B)	(C)	(D)	(E)	I.R.	O.R.
	OUTSIDE DIM.		WALL	LID	STEP		
	W	L	THK.	THK.	THK.		
SL-118	1.175	1.175	.055	.015	.004/.006	.035	.060
SL-175124	1.240	1.755	.050	.015	.004/.006	.020/.040	.055/.060
SL-125	1.245	1.245	.050	.015	.004/.006	.020/.040	.055/.060
SL-126	1.265	1.265	.050	.015	.004/.006	.020/.040	.055/.060
SL-136126	1.265	1.365	.050	.015	.004/.006	.020/.040	.055/.060
SL-230140	1.395	2.295	.057	.015	.0043	.045	.060
SL-141	1.415	1.415	.050	.015	.004/.006	.020/.040	.055/.060
SL-176146	1.465	1.765	.050	.015	.004/.006	.020/.040	.055/.060
SL-226146	1.465	2.265	.050	.015	.004/.006	.020/.040	.055/.060
SL-238158	1.575	2.375	.050	.015	.004/.006	.046	.086
SL-235176	1.765	2.355	.050	.015	.004/.006	.020/.040	.055/.060
SL-209186	1.865	2.095	.050	.015	.004/.006	.020/.040	.055/.060
SL-226196	1.965	2.265	.050	.015	.004/.006	.020/.040	.055/.060
SL-296196	1.965	2.965	.050	.015	.004/.006	.020/.040	.055/.060
SL-237	2.365	2.365	.050	.015	.004/.006	.020/.040	.055/.060

METAL LID



METAL LIDS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)	(B)	(C)	O.R.
	OUTSIDE DIM.		LID	
	W	L	THK.	
LA-5	.125	.125	.010	.020
L15915	.1475	1.590	.040	SHARP
LB-5B	.150	.300	.015	.010
LB-5A	.155	.255	.010	.010
LHB-5	.165	.250	.010	.010/.015
LC-5	.166	.166	.010	.020
LD-5	.215	.215	.010	.025
LH-5	.250	.250	.010	.020
LH-0-1	.250	.250	.010	.020
LJ-5	.250	.375	.010	.030
LF-5	.250	.752	.015	.020
LK-5	.266	.375	.010	.019
LN-5	.290	.290	.010	.030
LL-5	.375	.375	.010	.030
LL-0-1	.375	.375	.010	.030
L5138	.375	.500	.010	.005
LR-5	.375	.625	.015	.030
LP-5	.400	.400	.010	.030
LS-5-1	.431	.431	.010	.030
LS-5	.440	.440	.015	.030
LSN-5	.493	.955	.010	.020
LT-5	.544	.544	.015	.030
L5858	.584	.584	.014	.020
LU-5	.625	.625	.015	.015
L12676	.765	1.265	.010	.060
L9485	.850	.945	.010	.060



METAL LIDS

MSI ELECTRONIC CATALOG

MSI PART NUMBER	(A)	(B)	(C)	O.R.
	OUTSIDE DIM.		LID	
	W	L	THK.	
LX-5	.873	.940	.015	.010
LW-5A	.940	1.000	.010	.010
LW-5	.940	1.000	.020	.030