



THERMAL DATA

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THERMAL RESISTANCE DATA

Package Type	Package Dimensions (mm)	Q _{JA} (oC/W)	Materials			Paddle Size (mil)	Die Size (mil)	Package Thickness	Board Type	Board Thermal Vias
			Lead Frame	Mold Compound	Die Attach					
MLP (Micro Leadframe Package) - QUAD										
08LD MLPQ	3.0 x 3.0	36.5	CDA194	7730LF	QMI-519	75 x 75	65 x 65	0.9	4 layers	4
12LD MLPQ	3.0 x 3.0	57.3	CDA194	7730LF	QMI-519	55 x 55	45 x 45	0.9	4 layers	1
12LD MLPQ	3.0 x 3.0	35.2	CDA194	7730LF	QMI-519	67 x 67	57 x 57	0.9	4 layers	4
16LD MLPQ	3.0 x 3.0	35.3	CDA194	7730LF	QMI-519	67 x 67	57 x 57	0.9	4 layers	4
16LD MLPQ	3.0 x 3.0	33.3	CDA194	7730LF	QMI-519	75 x 75	65 x 65	0.9	4 layers	4
16LD MLPQ	3.5 x 3.5	32.3	CDA194	7730LF	QMI-519	91 x 91	81 x 81	0.9	4 layers	4
16LD MLPQ	4.0 x 3.5	32.8	CDA194	7730LF	QMI-519	110 x 91	100 x 81	0.9	4 layers	4
20LD MLPQ	4.5 x 3.5	28.7	CDA194	7730LF	QMI-519	130 x 91	120 x 81	0.9	4 layers	6
12LD MLPQ	4.0 x 4.0	32.0	CDA194	7730LF	QMI-519	95 x 95	85 x 85	0.9	4 layers	4
16LD MLPQ	4.0 x 4.0	31.1	CDA194	7730LF	QMI-519	95 x 95	85 x 85	0.9	4 layers	4
16LD MLPQ	4.0 x 4.0	24.6	CDA194	7730LF	QMI-519	114 x 114	104 x 104	0.9	4 layers	9
20LD MLPQ	4.0 x 4.0	30.8	CDA194	7730LF	QMI-519	95 x 95	85 x 85	0.9	4 layers	4
20LD MLPQ	4.0 x 4.0	24.6	CDA194	7730LF	QMI-519	114 x 114	104 x 104	0.9	4 layers	9
24LD MLPQ	4.0 x 4.0	30.5	CDA194	7730LF	QMI-519	95 x 95	85 x 85	0.9	4 layers	4
24LD MLPQ	4.0 x 4.0	29.4	CDA194	7730LF	QMI-519	106 x 106	96 x 96	0.9	4 layers	4
24LD MLPQ	5.0 x 4.0	26.9	CDA194	7730LF	QMI-519	134 x 95	124 x 85	0.9	4 layers	6
14LD MLPQ	5.0 x 5.0	23.2	CDA194	7730LF	QMI-519	109 x 181	99 x 171	0.9	4 layers	8
20LD MLPQ	5.0 x 5.0	22.8	CDA194	7730LF	QMI-519	134 x 134	124 x 124	0.9	4 layers	9
28LD MLPQ	5.0 x 5.0	22.3	CDA194	7730LF	QMI-519	134 x 134	124 x 124	0.9	4 layers	9
32LD MLPQ	5.0 x 5.0	22.4	CDA194	7730LF	QMI-519	134 x 134	124 x 124	0.9	4 layers	9
32LD MLPQ	5.0 x 5.0	21.6	CDA194	7730LF	QMI-519	146 x 146	136 x 136	0.9	4 layers	9
38LD MLPQ	5.0 x 7.0	19.3	CDA194	7730LF	QMI-519	134 x 213	124 x 203	0.9	4 layers	5
32LD MLPQ	6.0 x 5.0	21.3	CDA194	7730LF	QMI-519	173 x 134	163 x 124	0.9	4 layers	2
28LD MLPQ	6.0 x 6.0	21.5	CDA194	7730LF	QMI-519	156 x 156	146 x 146	0.9	4 layers	9
36LD MLPQ	6.0 x 6.0	18.0	CDA194	7730LF	QMI-519	173 x 173	163 x 163	0.9	4 layers	16
40LD MLPQ	6.0 x 6.0	18.1	CDA194	7730LF	QMI-519	173 x 173	163 x 163	0.9	4 layers	16
38LD MLPQ	7.0 x 5.0	19.3	CDA194	7730LF	QMI-519	134 x 213	124 x 203	0.9	4 layers	15
32LD MLPQ	7.0 x 7.0	15.5	CDA194	7730LF	QMI-519	213 x 213	203 x 203	0.9	4 layers	25
44LD MLPQ	7.0 x 7.0	15.3	CDA194	7730LF	QMI-519	213 x 213	203 x 203	0.9	4 layers	25
48LD MLPQ	7.0 x 7.0	15.5	CDA194	7730LF	QMI-519	213 x 213	203 x 203	0.9	4 layers	25
56LD MLPQ	8.0 x 8.0	17.9	CDA194	7730LF	QMI-519	187 x 215	177 x 205	0.9	4 layers	20
56LD MLPQ	8.0 x 8.0	14.5	CDA194	7730LF	QMI-519	252 x 252	242 x 242	0.9	4 layers	25
64LD MLPQ	9.0 x 9.0	12.8	CDA194	7730LF	QMI-519	291 x 291	281 x 281	0.9	4 layers	36
MLP (Micro Leadframe Package) - DUAL										
08LD MLPD	3.0 x 3.0	36.3	CDA194	7730LF	QMI-519	79 x 69	69 x 59	0.9	4 layers	4
08LD MLPD	3.0 x 3.0	47.9	CDA194	7730LF	QMI-519	103 x 63	93 x 53	0.9	4 layers	2
08LD MLPD	3.0 x 3.0	36.7	CDA194	7730LF	QMI-519	104 x 75	94 x 65	0.9	4 layers	4
10LD MLPD	3.0 x 3.0	40.5	CDA194	7730LF	QMI-519	99 x 63	89 x 53	0.9	4 layers	2
10LD MLPD	3.0 x 3.0	33.0	CDA194	7730LF	QMI-519	104 x 75	94 x 65	0.9	4 layers	4
12LD MLPD	4.0 x 3.0	30.2	CDA194	7730LF	QMI-519	138 x 75	128 x 65	0.9	4 layers	6
08LD MLPD	5.0 x 6.0	23.3	CDA194	7730LF	QMI-519	135 x 175	125 x 165	0.9	4 layers	12
08LD MLPD	5.0 x 6.0	22.6	CDA194	7730LF	QMI-519	151 x 175	141 x 165	0.9	4 layers	12
08LD MLPD	5.0 x 6.0	23.4	CDA194	7730LF	QMI-519	175 x 136	165 x 126	0.9	4 layers	12
08LD MLPD	5.0 x 6.0	22.2	CDA194	7730LF	QMI-519	175 x 152	165 x 142	0.9	4 layers	12

THERMAL RESISTANCE DATA

Package Type	Package Dimensions (mm)	θ_{JA} (°C/W)	Materials			Paddle Size (mil)	Die Size (mil)	Package Thickness	Board Type	Board Thermal Vias
			Lead Frame	Mold Compound	Die Attach					
MLP (Micro Leadframe Package) - MICRO										
05LD MLPM	2.0 x 1.0	119.3	CDA194	MP8000CSM-F1	SNB	25 x 21	15 x 11	0.9	4 layers	1
03LD MLPM	2.0 x 2.0	78.0	CDA194	MP8000CSM-F1	SNB	43 x 60	33 x 50	0.9	4 layers	1
05LD MLPM	2.0 x 2.0	75.6	CDA194	MP8000CSM-F1	SNB	60 x 32	50 x 22	0.9	4 layers	1
06LD MLPM	2.0 x 2.0	78.6	CDA194	MP8000CSM-F1	SNB	45 x 32	35 x 22	0.9	4 layers	1
08LD MLPM	2.0 x 2.0	80.7	CDA194	MP8000CSM-F1	SNB	30 x 55	20 x 45	0.9	4 layers	1
05LD MLPM	3.0 x 2.0	65.1	CDA194	MP8000CSM-F1	SNB	56 x 56	46 x 46	0.9	4 layers	1
06LD MLPM	3.0 x 2.0	66.7	CDA194	MP8000CSM-F1	SNB	56 x 41	46 x 31	0.9	4 layers	1
08LD MLPM	3.0 x 2.0	49.8	CDA194	MP8000CSM-F1	SNB	43 x 44	33 x 34	0.9	4 layers	2
08LD MLPM	3.0 x 2.0	50.8	CDA194	MP8000CSM-F1	SNB	62 x 75	52 x 65	0.9	4 layers	2
06LD MLPM	3.0 x 3.0	67.8	CDA194	MP8000CSM-F1	SNB	50 x 66	40 x 56	0.9	4 layers	2
06LD MLPM	3.0 x 3.0	48.9	CDA194	MP8000CSM-F1	SNB	67 x 99	57 x 89	0.9	4 layers	2
06LD MLPM	3.0 x 3.0	51.0	CDA194	MP8000CSM-F1	SNB	80 x 56	70 x 46	0.9	4 layers	2
08LD MLPM	3.0 x 3.0	48.3	CDA194	MP8000CSM-F1	SNB	67 x 99	57 x 89	0.9	4 layers	2
10LD MLPM	3.0 x 3.0	48.3	CDA194	MP8000CSM-F1	SNB	67 x 99	57 x 89	0.9	4 layers	2
NOTES										
θ_{JA}		Junction to ambient thermal resistance in JEDEC still air chamber								
Thermal Test Board		JESD51-5 (packages w/direct thermal attachment mechanisms)								

THERMAL RESISTANCE DATA

Package Type	Q _{JA} (oC/W)	Q _{JC} (oC/W)	Materials			Paddle Size (mil)	Die Size (mil)	Package Dimensions (mm)	Package Thickness	Board Type
			Lead Frame	Mold Compound	Die Attach					
SSBGA (Small Scale BGA)										
64 IO (3W)	33.6		NA	7730L	QMI 516	203 x 203	197 x 197	10 x 10 x 1.4		4 layers
121 IO	32.5		NA	SMTB-IN	8360	NA	305 x 307	10 x 10 x 1.4		4 layers
SOT (Small Outline Package)										
04LD SOT143	426.2	148.558	Alloy 42	MP8000	LMISR4	45 x 39	37 x 31	2.9 x 1.3	1.1	4 layers
05LD SOT23	191.0		CDA194	MP8000C	LMISNB	63 x 45	53 x 38	2.9 x 1.65	1.1	4 layers
SOT223	62.3		Tamac 11	ARA2175	LMISR4	110 x 100	60 x 60	6.5 x 3.5	1.6	4 layers
TSOT (Thin Shrink Small Outline Package - Shrink SOT)										
05LD TSOT	207.4		CDA194	MP8000C	LMISNB	48 x 63	38 x 53	2.9 x 1.6	0.9	4 layers
06LD TSOT COL	134.0		CDA194	MP8000C	8006	NA	88 x 30	2.9 x 1.6	0.9	4 layers
08LD TSOT	190.3		CDA194	MP8000C	LMISNB	86 x 28	76 x 18	2.9 x 1.6	0.9	4 layers
TO-92										
03LD TO92	131.9		CDA194	1100	LMISR4	100 x 140	60 x 60	4.6 x 4.7	3.6	4 layers
TO-220										
03LD TO220	29.4		Tamac 11	MP180S	LMISR4	180 x 240	100 x 100	10.2 x 8.86	4.45	4 layers
05LD TO220	29.3		Tamac 11	MP180S	LMISR4	180 x 240	100 x 100	10.2 x 8.86	4.45	4 layers
05LD TO220	29.0	2.030	Tamac 11	MP8000	LMISR4	180 x 240	72 x 158	10.2 x 8.86	4.45	4 layers
05LD TO220	27.8	0.790	Tamac 11	MP8000	95Pb2Sn2.5Ag	180 x 240	72 x 158	10.2 x 8.86	4.45	4 layers
07LD TO220	29.1		Tamac 11	MP180S	LMISR4	180 x 240	100 x 100	10.2 x 8.86	4.45	4 layers
DDPAK										
03LD DDPK	31.4		Tamac 11	MP180S	LMISR4	180 x 240	100 x 100	10.2 x 8.4	4.45	4 layers
05LD DDPK	31.2		Tamac 11	MP180S	LMISR4	180 x 240	100 x 100	10.2 x 8.4	4.45	4 layers
07LD DDPK	30.2		Tamac 11	MP180S	LMISR4	180 x 240	100 x 100	10.2 x 8.4	4.45	4 layers
SPAK										
05LD SPAK	38.0		CDA194	KMC289	95Pb5Sn	256 x 231	52 x 53	9.4 x 8.0	1.9	4 layers
SOIC (Small Outline Integrated Circuit) Wide Body 0.300"										
16LD SOICW	69.1		CDA194	6600HR	LMISR4	165 x 205	155 x 195	10.21 x 7.5	2.34	4 layers
20LD SOICW	65.8		CDA194	6600HR	LMISR4	165 x 205	155 x 195	12.75 x 7.5	2.34	4 layers
28LD SOICW	53.7	12.717	CDA194	6600HR	LMISR4	200 x 300	153 x 221	17.83 x 7.5	2.34	4 layers
28LD SOICW	58.6		CDA194	6600HR	LMISR4	165 x 205	155 x 195	17.83 x 7.5	2.34	4 layers
28LD SOICW (FUSED)	46.1		CDA194	6300H	LMISR4	140 x 180	100 x 100	17.83 x 7.5	2.34	4 layers
SOIC (Small Outline Integrated Circuit) Narrow Body 0.150"										
08LD SOICN	128.4		CDA194	6600RA	LMISR4	95 x 140	85 x 130	4.9 x 3.9	1.6	4 layers
08LD SOICN (4LD FUSED)	96.8		CDA194	6600RA	LMISR4	105 x 166	90 x 150	4.9 x 3.9	1.5	4 layers
08LD SOICN (4LD FUSED)	96.1		CDA194	6600RA	2600BT	105 x 166	90 x 150	4.9 x 3.9	1.5	4 layers
16LD SOICN	82.2		CDA194	6600RA	LMISR4	90 x 150	80 x 140	9.9 x 3.9	1.6	4 layers

THERMAL RESISTANCE DATA

Package Type	Q _{JA} (°C/W)	Q _{JC} (°C/W)	Materials			Paddle Size (mil)	Die Size (mil)	Package Dimensions (mm)	Package Thickness	Board Type
			Lead Frame	Mold Compound	Die Attach					
QSOP (Quarter Size Outline Package) Wide Body 0.300"										
36LD QSOP	54.0		CDA194	6600HR	LMISR4	180 x 240	170 x 230	15.3 x 7.5	2.34	4 layers
36LD QSOP (FUSED)	53.9		CDA194	6300H	LMISR4	180 x 240	100 x 100	15.3 x 7.5	2.34	4 layers
44LD QSOP	50.0		CDA194	6300H	LMISR4	190 x 260	100 x 100	17.83 x 7.5	2.34	4 layers
QSOP (Quarter Size Outline Package) Narrow Body 0.150"										
16LD QSOP	103.7		CDA194	6600RA	LMISR4	96 x 130	86 x 120	4.89 x 3.9	1.37	4 layers
16LD QSOP	112.4		CDA194	6300H	LMISR4	96 x 130	60 x 60	4.89 x 3.9	1.37	4 layers
20LD QSOP	90.5		CDA194	6300H	LMISR4	96 x 140	60 x 60	8.65 x 3.9	1.37	4 layers
24LD QSOP	88.0		CDA194	6300H	LMISR4	96 x 140	60 x 60	8.65 x 3.9	1.37	4 layers
28LD QSOP	79.3		CDA194	6300H	LMISR4	90 x 150	60 x 60	9.89 x 3.9	1.37	4 layers
SSOP (Shrink Small Outline Package) 5.3mm										
20LD SSOP	83.0		CDA194	6600HR	LMISR4	154 x 212	144 x 202	7.2 x 5.3	1.73	4 layers
28LD SSOP	67.1		CDA194	6710S	LMISR4	154 x 200	100 x 100	10.2 x 5.3	1.73	4 layers
28LD SSOP	66.6		CDA194	6600HR	LMISR4	154 x 291	144 x 281	10.2 x 5.3	1.73	4 layers
28LD SSOP (FUSED)	61.8		CDA194	6710S	LMISR4	154 x 200	100 x 100	10.2 x 5.3	1.73	4 layers
MSOP (Mini Small Outline Package) 3.0mm										
08LD MSOP	216.3		CDA194	6600RA	LMISR4	68 x 94	58 x 84	3.0 x 3.0	0.86	4 layers

THERMAL RESISTANCE DATA

Package Type	Q _{JA} (oC/W)	Q _{JC} (oC/W)	Materials			Paddle Size (mil)	Die Size (mil)	Package Dimensions (mm)	Package Thickness	Board Type
			Lead Frame	Mold Compound	Die Attach					
TSSOP (Thin Shrink Small Outline Package) 4.4mm										
08LD TSSOP	233.9		C7025	7351LS	LMISR4	87 x 126	77 x 116	3.0 x 4.4	0.9	4 layers
14LD TSSOP	100.4		C7025	7320CR	LMISR4	118 x 122	60 x 60	5.0 x 4.4	0.9	4 layers
20LD TSSOP	110.7		C7025	7351LS	LMISR4	118 x 165	108 x 155	6.5 x 4.4	0.9	4 layers
24LD TSSOP	83.8		C7025	7320CR	LMISR4	118 x 217	100 x 100	7.8 x 4.4	0.9	4 layers
24LD TSSOP (FUSED)	64.7		C7025	7320CR	LMISR4	112 x 213	100 x 100	7.8 x 4.4	0.9	4 layers
28LD TSSOP	83.6		C7025	7351LS	LMISR4	118 x 283	108 x 273	9.7 x 4.4	0.9	4 layers
38LD TSSOP	77.1	12.160	C7025	7351LS	LMISR4	118 x 217	100 x 100	9.7 x 4.4	0.9	4 layers
38LD TSSOP	73.3	9.950	C7025	7351LS	LMISR4	118 x 217	105 x 166	9.7 x 4.4	0.9	4 layers
TSSOP (Thin Shrink Small Outline Package) 6.1mm										
48LD TSSOP	82.9		C7025	7351LS	LMISR4	118 x 197	108 x 187	12.5 x 6.1	0.9	4 layers
MQFP (Metric Quad Flat Pack)										
44LD MQFP	51.4		KLF125	6650RL	LMISR4	300 x 300	290 x 290	10 x 10	2.0	4 layers
52LD MQFP	51.3	11.200	C7025	6650	LMISR4	260 x 260	250 x 250	10 x 10	2.0	4 layers
52LD MQFP	51.3	11.957	C7025	6650	LMISR4	280 x 280	270 x 270	10 x 10	2.0	4 layers
64LD MQFP	44.9		EFTEC 64T	6300H	LMISR4	256 x 256	200 x 200	14 x 14	2.0	4 layers
64LD MQFP	47.0		KLF125	6300HG	LMISR4	236 x 236	200 x 200	14 x 20	2.7	4 layers
80LD MQFP	44.0		C7025	6300HG	LMISR4	252 x 252	200 x 200	14 x 20	2.7	4 layers
100LD MQFP	48.2		KLF125	6300HG	LMISR4	236 x 236	200 x 200	14 x 20	2.7	4 layers
120LD MQFP	34.5		C7025	6710HL	LMISR4	325 x 325	200 x 200	28 x 28	3.4	4 layers
128LD MQFP	31.2		C7025	6710HL	LMISR4	394 x 394	200 x 200	28 x 28	2.7	4 layers
160LD MQFP	29.7		EFTEC 64T	6710HL	LMISR4	394 x 394	300 x 300	28 x 28	3.4	4 layers
208LD MQFP	33.0		EFTEC 64T	6710HL	LMISR4	394 x 394	200 x 200	28 x 28	3.4	4 layers
LQFP (Low Profile Quad Flat Pack) 1.4mm										
32LD LQFP	59.5		C7025	7320AR	LMISR4	196 x 196	100 x 100	7 x 7	1.4	4 layers
44LD LQFP	53.2		C7025	7320AR	LMISR4	205 x 205	100 x 100	10 x 10	1.4	4 layers
48LD LQFP	73.0		C7025	7351LS	LMISR4	200 x 200	190 x 190	7 x 7	1.4	4 layers
64LD LQFP	46.3		C7025	7320AR	LMISR4	260 x 260	200 x 200	10 x 10	1.4	4 layers
80LD LQFP	36.8		C7025	7320AR	LMISR4	315 x 315	200 x 200	14 x 14	1.4	4 layers
100LD LQFP	45.7		EFTEC 64T	7351LS	LMISR4	360 x 360	350 x 350	14 x 14	1.4	4 layers
120LD LQFP	41.9		C7025	7320AR	LMISR4	335 x 335	200 x 200	14 x 14	1.4	4 layers
144LD LQFP	28.9		C7025	7320AR	LMISR4	335 x 335	200 x 200	20 x 20	1.4	4 layers
176LD LQFP	38.4		C7025	7320AR	LMISR4	335 x 335	200 x 200	24 x 24	1.4	4 layers
TQFP (Thin Quad Flat Pack) 1.0mm										
32LD TQFP	88.2		C7025	7351LS	LMISR4	133 x 133	123 x 123	5 x 5	1.0	4 layers
32LD TQFP	86.0		C7025	7320CR	LMISR4	196 x 196	100 x 100	7 x 7	1.0	4 layers
48LD TQFP	56.5		C7025	7320CR	LMISR4	200 x 200	60 x 60	7 x 7	1.0	4 layers
64LD TQFP	59.1		C7025	7351LS	LMISR4	260 x 260	250 x 250	10 x 10	1.0	4 layers
80LD TQFP	69.4		C7025	7320CR	LMISR4	210 x 210	200 x 200	12 x 12	1.0	4 layers
PDIP (Plastic Dual-In-Line Package)										
08LD PDIP	84.6		CDA194	6300H	LMISR4	100 x 110	60 x 100	9.525 x 6.35	3.30	4 layers
14LD PDIP	69.8		CDA194	6300H	LMISR4	110 x 140	100 x 100	19.05 x 6.35	3.30	4 layers
16LD PDIP	69.9		CDA194	6300H	LMISR4	110 x 140	100 x 100	19.05 x 6.35	3.30	4 layers

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Package Type	θ_{JA} ($^{\circ}C/W$)	θ_{JC} ($^{\circ}C/W$)	Materials			Paddle Size (mil)	Die Size (mil)	Package Dimensions (mm)	Package Thickness	Board Type
			Lead Frame	Mold Compound	Die Attach					
PLCC (Plastic Leaded Chip Carrier)										
28LD PLCC	50.4		OLIN 151	6300H	LMISR4	200 x 200	100 x 100	11.5 x 11.5	3.88	4 layers
32LD PLCC	52.4		OLIN 151	6300H	LMISR4	200 x 200	100 x 100	11.35 x 13.9	2.67	4 layers
44LD PLCC	36.3		OLIN 151	6600HR	LMISR4	350 x 350	340 x 340	16.6 x 16.6	3.88	4 layers
84LD PLCC	27.1		OLIN 151	6300H	LMISR4	360 x 360	200 x 200	29.4 x 29.4	4.13	4 layers

NOTES

θ_{JA} Junction to ambient thermal resistance in JEDEC still air chamber
 Thermal Test Board JESD51-7 (leaded surface mount packages)
 JESD51-9 (area array surface mount packages)