

THERMAL RESISTANCE TABLE

TYPE	PACKAGE CODE	STYLE LEAD COUNT	THETA JC °C/W	THETA JA °C/W	PIN COMMON TO SUBSTRATE — BOARD TYPE
Metal Can	K	TO-3 2L TO-3 4L	3 3	35 35	Case Case
Metal Can	H	TO-5 TO-39 TO-46 TO-52	40 15 80 N/A	150 150 440 360	— Pin 3* Pin 3* Pin 3*
CERDIP	J	J8 J14 J16 J18 J20 J24 J28	30 25 25 20 15 10 7	110 95 85 75 70 65 55	— — — — — — —
Side Brazed	D	D8 D14 D16 D18 D20	30 25 25 20 15	100 85 80 75 70	— — — — —
LCC	LS	LS8	4	125	—
	L	LCC 20L	40	100	—
Flat Pack Glass Sealed	W	W10 W14	40 40	170 160	— —
Flat Pack Bottom Brazed	WB	WB10 WB14	40 40	160 150	— —
Plastic TO	P	TO-3P 3L (TO-247)	1.5	45	Pin 2
Plastic TO	Z	TO-226 3L (TO-92)	—	160	Pin 1 or 2 (By Device)
Plastic TO	T	TO-220 3L TO-220 5L TO-220 7L	11 11 11	34 34 34	Pin 2 Pin 3 Pin 4
Plastic DD	M Q R	DD Pak 3L DD Pak 5L DD Pak 7L	11 11 11	34 34 34	Pin 2 Pin 3 Pin 4
Plastic PDIP 300mil	N8	N8 N8	45 50	100 150	Cu, 4 layer A42, 4 layer
Plastic PDIP 300mil	N	N14, Cu N16, Cu N18, Cu N20, Cu N24, Cu N28, Cu	33 34 29 28 27 30	70 70 65 62 60 59	4 Layer 4 Layer 4 Layer 4 Layer 4 Layer 4 Layer
Plastic SC70	SC6 SC8	SC6, 2 pin fused SC8, 3 pin fused	- -	270 270	Cu, Multilayer Cu, Multilayer
Plastic SOT/TSOT	S3 S5 S6 TS8	S3 S5 S6 TS8	100 50 51 47	202 215 192 195	A42, 4 layer, pin 2 Cu, 4 layer, Pin 2 Cu, 4 layer, Pin 2 Cu, 4 layer, Pin 2
Plastic SOT-223	ST	SOT-223	15	60 (est.)	Pin 2
Plastic SO 150mil	S8	S8 S8 S8, 1 pin fused S8, 2 pin fused S8, 3 pin fused S14 S14 S16, 4 pin fused S16 S16 S8E	39 42 38 37 35 37 - 22 30 - 5	120 190 95 90 85 88 160 65 80 150 33	Cu, 4 layer A42, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer A42, 4 layer Cu, 4 layer Cu, 4 layer A42, 4 layer Cu, 4 layer
Plastic SO 300mil	SW	SW16 SW18 SW20 SW24 SW28	30 27 25 23 20	80 70 60 60 55	4 layer 4 layer 4 layer 4 layer 4 layer
Plastic MSOP & Exposed MSOP	MS8 MS8E MS	MS8 MS8 MS8E MS10	40 45 5-10 45	163 273 35-40 160	Cu, 4 layer A42, 4 layer Cu, 4-layer Cu, 4-layer

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	MS	MS12 MS16 MS16(12)	21 21 21	135 120 135	Cu, 4 layer Cu, 4 layer Cu, 4 layer
	MSE	MSE10 MSE12 MSE16 MSE16(12)	5-10 5-10 5-10 5-10	35-40 35-40 35-40 35-40	Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer
Plastic SSOP 5.3mm	G	G16 G20 G24 G28 G36 G44	40 30 25 25 25 25	110 90 88 80 70 70	Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer
SSOP, Narrow 150mil	GN	GN16 GN16/ 4 pin fused GN20 GN24 GN28	40 37 30 30 25	110 90 90 85 80	Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer Cu, 4 layer
SSOP, Wide 300mil	GW	GW36 GW44	20 17	65 60	Cu, 4 layer Cu, 4 layer
Plastic TSSOP 4.4mm	F	F14 F20 F20, fused	17 20 18	100 90 80	Cu, 4 Layer Cu, 4 Layer Cu, 4 Layer
	FE	FE16 FE20 FE24 FE28 FE38 FE38(31)	10 10 10 5-10 5-10 5-10	38 38 33 30 28 28	Cu, 4 Layer Cu, 4 Layer Cu, 4 Layer Cu, 4 Layer Cu, 4 Layer Cu, 4 Layer
Plastic TSSOP 6.1mm	FW	FW48	—	82	Cu, 4 Layer
Plastic DFN (Exposed Pad)					
2 x 2	DC	DC3, DC4, DC6,DC8	16.7	80.6	4 Layer
	KC	KC8	17.2	88.5	4 Layer
2 x 3	DCB	DCB6, DCB8	9.6	64	4 Layer
3 x 2	DDB	DDB8, DDB10, DDB12	16.8	55	4 Layer
3 x 3	DD KD	DD8,DD8 DD10,DD12 DD12MA KD10	5.5	43	4 Layer
4 x 3	DE,UE	DE12, UE12	5.5	43	4 Layer
4 x 3	DE,KE	DE14, DE16, KE14	5.5	43	4 Layer
4 x 4	DF	DF12	3.7	42.6	4 Layer
5 x 3	DHC	DHC16	3.2	41.7	4 Layer
5 x 4	DHD	DHD16	4.3	41.7	4 Layer
5 x 5	DH	DH16	3.0	34	4 Layer
6 x 3	DIC	DIC22	4.3	31.8	4 Layer
6 x 4	DJD	DJD24	4.3	37	4 Layer
7 x 4	DKD	DKD32 DKD24	7.5	34	4 Layer
Plastic QFN (Exposed Pad)					
3 x 3	UD PD	UD16, UD20, PD16, PD20	7.5	68	4 Layer
3 x 2	UDB	UDB10	5.0	137	4 layer
3 x 4	UDC PDC	UDC20, UDC20MA, UDC24,PDC20	6.8	52	4 Layer
3 x 5	UDD	UDD24	5.0	46	4 Layer
4 x 4	UF PF	UF16,UF20 UF24,UF28 PF24,PF28	4.5	47	4 Layer

TYPE	PACKAGE CODE	STYLE LEAD COUNT	THETA JC °C/W	THETA JA °C/W	PIN COMMON TO SUBSTRATE — BOARD TYPE
4 x 5	UFD	UFD20,UFD24 ,UFD28	3.4	43	4 Layer
4 x 6	UFE	UFE26, UFE38	4	38	4 Layer
4 x 7	UFF	UFF34, UFF36, UFF44	2.6	36.4	4 Layer
4 x 9	UFH	UFH44	3	34	4 Layer
5 x 5	UH	UH20, UH24, UH32, UH40	7.3	44	4 Layer
5 x 6	UHE	UHE28, UHE36, UHE42	5.0	43	4 Layer
5 x 7	UHF	UHF38	2	34	4 Layer
5 x 8	UHG	UHG39/UHG52	3.8	36	4 Layer
5 x 9	UHH	UHH48, UHH56	2	31	4 Layer
6 x 6	UJ	UJ40	2	33	4 Layer
7 x 7	UK	UK44, UK48	3	34	4 Layer
7 x 8	UKG WKG	UKG52, WKG52	2	31	4 Layer
7 x 9	UKH WKH	UKH64, WKH56	2	29	4 Layer
9 x 9	UP WP	UP64, WP64	1	29	4 Layer
Plastic LQFP/ eLQFP	LX	LX48	-	53	4 Layer
			18.5	45	Split pad, 4 Layer
			-	57	DAF, 4 Layer
	LXE	LXE48	3	20	4 Layer
	LW	LW64	-	34	4 Layer
	LWE	LWE64	2.5	17	4 Layer

Consult individual data sheets for product-specific values or requirements.

- These values are offered for general reference use.
- High effective thermal conductivity board (JEDEC 4 layer) was used for the calculations.
- DFN and QFN package type dimensions are in millimeter.
- All QFN/QFN are Cu lead frames.
- The values for Plastic Packages are for copper material and non-fused type unless otherwise shown in STYLE LEAD COUNT column.
- Construction variations, such as die size, material, leads fused internally to Die Attach Pad, and PCB copper layout, significantly influence thermal performance.
- For 0 jc (Theta JC) calculation on e-pad packages, the heat sink applies to package bottom exposed pad only.
- Cu = Copper; A42 = Alloy 42.
* 3-Lead Versions, metal can.