

RECOMMENDED PCB LAYOUT

SPECIFICATIONS:

MATERIAL:-
 INSULATOR: LCP E130i,
 UL94V-0
 COLOR: BLACK OR WHITE
 CONTACT: PHOSPHOR BRONZE
 FINISH:-
 1.3um TIN, 2.5um~4um NICKEL UNDERPLATE

NOTES: ALL DIMENSIONS AND NOTES
 MARKED * ARE CRITICAL AND
 MUST BE CHECKED IN ACCORDANCE
 WITH QUALITY DOC. Q1-02A

M/H	TYPE	G	H	PIN	A	B	C	D	PIN	A	B	C	D
2.0	01	1.2	1.50	10	2.0	7.0	4.0	4.5	62	15.0	20.0	17.0	17.5
2.5	X2	1.5	2.00	12	2.5	7.5	4.5	5.0	64	15.5	20.5	17.5	18.0
3.0	03	2.0	2.50	14	3.0	8.0	5.0	5.5	66	16.0	21.0	18.0	18.5
3.5	03	2.0	2.50	16	3.5	8.5	5.5	6.0	68	16.5	21.5	18.5	19.0
4.0	04	2.5	3.00	18	4.0	9.0	6.0	6.5	70	17.0	22.0	19.0	19.5
4.5	0C	3.0	3.50	20	4.5	9.5	6.5	7.0	72	17.5	22.5	19.5	20.0
5.0	05		4.00	22	5.0	10.0	7.0	7.5	74	18.0	23.0	20.0	20.5
6.0	06		5.00	24	5.5	10.5	7.5	8.0	76	18.5	23.5	20.5	21.0
7.0	07		6.00	26	6.0	11.0	8.0	8.5	78	19.0	24.0	21.0	21.5
8.0	08,28		7.00	28	6.5	11.5	8.5	9.0	80	19.5	24.5	21.5	22.0
9.0	09		8.00	30	7.0	12.0	9.0	9.5	82	20.0	25.0	22.0	22.5
10.0	0A		9.00	32	7.5	12.5	9.5	10.0	84	20.5	25.5	22.5	23.0
4.5	04	2.5	3.00	34	8.0	13.0	10.0	10.5	86	21.0	26.0	23.0	23.5
5.5	05		4.00	36	8.5	13.5	10.5	11.0	88	21.5	26.5	23.5	24.0
6.5	06		5.00	38	9.0	14.0	11.0	11.5	90	22.0	27.0	24.0	24.5
7.5	07		6.00	40	9.5	14.5	11.5	12.0	92	22.5	27.5	24.5	25.0
8.5	08,28		7.00	42	10.0	15.0	12.0	12.5	94	23.0	28.0	25.0	25.5
9.5	09		8.00	44	10.5	15.5	12.5	13.0	96	23.5	28.5	25.5	26.0
10.5	0A		9.00	46	11.0	16.0	13.0	13.5	98	24.0	29.0	26.0	26.5
12.0	06		5.00	48	11.5	16.5	13.5	14.0	100	24.5	29.5	26.5	27.0
13.0	07		6.00	50	12.0	17.0	14.0	14.5	110	27.0	32.0	29.0	29.5
14.0	08,28		7.00	52	12.5	17.5	14.5	15.0	120	29.5	34.5	31.5	32.0
15.0	09		8.00	54	13.0	18.0	15.0	15.5	130	32.0	37.0	34.0	34.5
16.0	0A		9.00	56	13.5	18.5	15.5	16.0	140	34.5	39.5	36.5	37.0
12.5	06		5.00	58	14.0	19.0	16.0	16.5	150	37.0	42.0	39.0	39.5
13.5	07		6.00	52	12.5	17.5	14.5	15.0	120	29.5	34.5	31.5	32.0
14.5	08,28		7.00	54	13.0	18.0	15.0	15.5	130	32.0	37.0	34.0	34.5
15.5	09		8.00	56	13.5	18.5	15.5	16.0	140	34.5	39.5	36.5	37.0
16.5	0A		9.00	58	14.0	19.0	16.0	16.5	150	37.0	42.0	39.0	39.5
16.5	0A		9.00	60	14.5	19.5	16.5	17.0	160	39.5	44.5	41.5	42.0

NOTES:

- CONTACT TECHNICAL SALES FOR ALTERNATIVE OPTION
- FOR MOULD AVAILABILITY, PLEASE REFER TO PG 2/3

Leo	14	01.04.16	A481
Leo	13	01.03.16	A477
MSP	12	18.11.14	12694
Allan	11	02.09.09	A232
Allan	10	21.08.09	A231
Allan	9	06.08.09	A227
Allan	8	31.07.08	A150

NAME	ISS.	DATE	C/NOTE
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APPROVED: B.Lim

CHECKED: D.P

DRAWN: Leo

CUSTOMER REF.:

ASSEMBLY DRG:

ORDER CODE

M402VF-3- XXX - XX NR

TOTAL NO. OF WAYS TYPE (REFER TO TABLE)

TOLERANCES
 X.X = ±0.25mm
 X.XX = ±0.13mm



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TOLERANCES
 X. = ±1mm
 X.X = ±0.25mm
 X.XX = ±0.10mm
 X.XXX = ±0.01mm
 ANGLES = ±5°
 UNLESS STATED

MATERIAL: SEE NOTES
 FINISH: SEE NOTES
 S/AREA: mm?

TITLE:
 M402 V SERIES 0.5 BOARD TO BOARD
 SMT V/T TYPE FEMALE

DRAWING NUMBER:
 M402VF-3- XXX - XX NR
 SHT 1 OF 3

TOTAL NO. OF WAYS \ TYPE	01	02	03	04	05	06	07	08	09	0A	0B
10	●	●	●	⊗	●	⊗	●	⊗	⊗	⊗	⊗
12	⊗	●	●	●	●	●	⊗	⊗	⊗	⊗	⊗
14	●	●	●	●	●	●	⊗	⊗	⊗	⊗	⊗
16	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
18	⊗	⊗	⊗	⊗	●	●	●	⊗	⊗	⊗	⊗
20	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
22	●	●	●	⊗	●	●	●	⊗	⊗	⊗	⊗
24	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
26	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
28	⊗	⊗	⊗	⊗	●	●	●	⊗	⊗	⊗	⊗
30	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
32	●	⊗	●	●	●	●	●	⊗	⊗	⊗	⊗
34	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
36	⊗	⊗	●	●	●	●	●	⊗	⊗	⊗	⊗
38	⊗	⊗	⊗	⊗	●	●	●	⊗	⊗	⊗	⊗
40	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
42	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

TOTAL NO. OF WAYS \ TYPE	01	02	03	04	05	06	07	08	09	0A	0B
44	●	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
46	⊗	⊗	●	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗
48	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
50	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
52	⊗	⊗	●	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗
54	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
56	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
58	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
60	●	●	●	●	●	●	●	⊗	⊗	⊗	⊗
62	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
64	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
66	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
68	⊗	⊗	⊗	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗
70	⊗	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
72	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
74	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
76	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

TOTAL NO. OF WAYS \ TYPE	01	02	03	04	05	06	07	08	09	0A	0B
78	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
80	●	●	●	●	●	⊗	⊗	⊗	⊗	⊗	⊗
82	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
84	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
86	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
88	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
90	⊗	⊗	⊗	⊗	⊗	●	⊗	⊗	⊗	⊗	⊗
92	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
94	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
96	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
98	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
100	⊗	⊗	⊗	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗
110	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
120	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
130	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
140	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
150	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
160	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

OBSOLETE
from
31-01-2019:
M402VF-3-038-05NR

- - MOULDS AVAILABLE
- - MOULDS UPON REQUEST. PLEASE REFER TECHNICAL SALES
- ✗ - OBSOLETE ITEMS

Leo	14	01.04.16	A481
Leo	13	01.03.16	A477
MSP	12	18.11.14	12694
Allan	11	02.09.09	A232
Allan	10	21.08.09	A231
Allan	9	06.08.09	A227
Allan	8	31.07.08	A150

NAME	ISS.	DATE	C/NOTE
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APPROVED: B.Lim

CHECKED: D.P

DRAWN: Leo

CUSTOMER REF.:

ASSEMBLY DRG:

NOTES: ALL DIMENSIONS AND NOTES MARKED ✗ ARE CRITICAL AND MUST BE CHECKED IN ACCORDANCE WITH QUALITY DOC. Q1-02A

ORDER CODE
M402VF-3- XXX - XX NR
TOTAL NO. OF WAYS TYPE
(REFER TO TABLE)



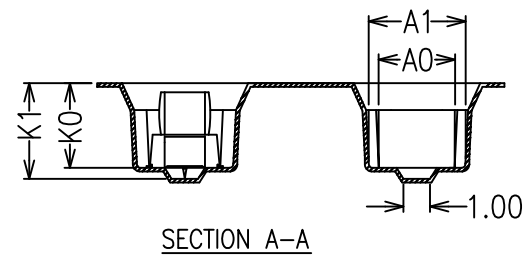
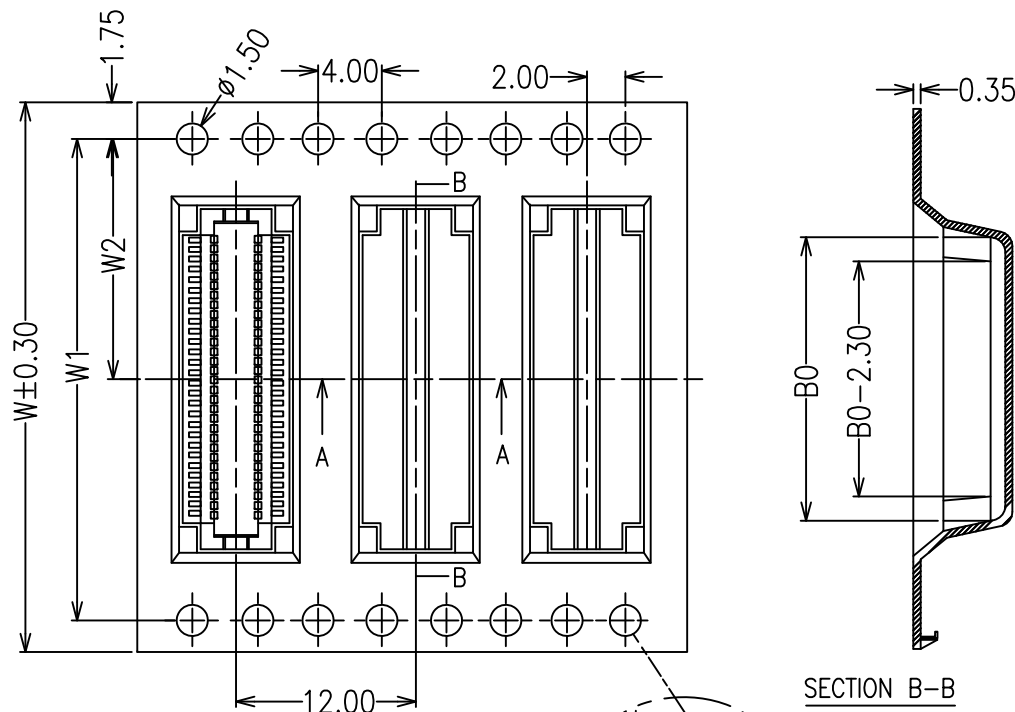
HARWIN USA TEL: 603 893 5376 FAX: 603 893 5396 mis@harwin.com	HARWIN Europe (UK) TEL: 023 9231 4545 FAX: 023 9231 4590 mis@harwin.co.uk	HARWIN Asia TEL: +65 6 779 4909 FAX: +65 6 779 3868 mis@harwin.com.sg
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TOLERANCES
X. = ±1mm
X.X = ±0.25mm
X.XX = ±0.10mm
X.XXX = ±0.01mm
ANGLES = ±5°
UNLESS STATED

MATERIAL: SEE NOTES
FINISH: SEE NOTES
S/AREA: mm?

TITLE: M402V SERIES 0.5 BOARD TO BOARD SMT V/T TYPE FEMALE
DRAWING NUMBER: M402VF-3- XXX - XX NR
SHT 2 **OF** 3



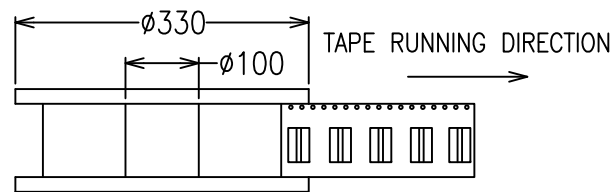
W	W1	W2
16	/	7.50
24	/	11.50
32	28.40	14.20
44	40.40	20.20
56	52.40	26.20
72	68.40	34.20

CKT	10	14	18	22	26	30	34	38	42	46
PIN	10 12	14 16	18 20	22 24	26 28	30 32	34 36	38 40	42 44	46 48
W	016	016	024	024	024	024	024	024	024	032
B0	7.90	8.90	9.90	10.90	11.90	12.90	13.90	14.90	15.90	16.90

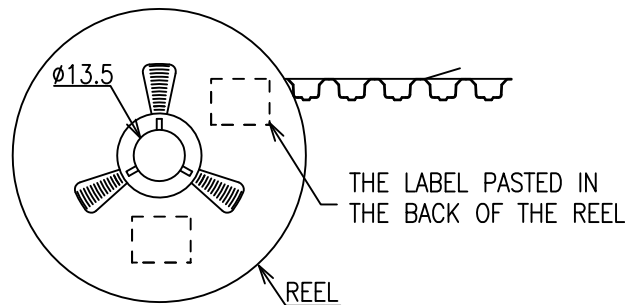
CKT	50	54	58	62	66	70	74	78	82	86
PIN	50 52	54 56	58 60	62 64	66 68	70 72	74 76	78 80	82 84	86 88
W	032	032	032	044	044	044	044	044	044	044
B0	17.90	18.90	19.90	20.90	21.90	22.90	23.90	24.90	25.90	26.90

CKT	90	94	98	B0	C0	D0	E0	F0	G0
PIN	90 92	94 96	98 A0	B0	C0	D0	E0	F0	G0
W	044	044	044	056	056	056	056	056	072
B0	27.90	28.90	29.90	32.40	34.90	37.90	49.90	42.40	44.90

ITEM	A0	A1	K0	K1	PITCH	PCS/REEL
DIM	5.10	6.50	4.20	4.80	12.00	1200



NOTES: ALL DIMENSIONS AND NOTES MARKED * ARE CRITICAL AND MUST BE CHECKED IN ACCORDANCE WITH QUALITY DOC. Q1-02A



- NOTES:
- 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.20
 - CARRIER CAMBER IS WITHIN 1MM IN 250MM
 - MATERIAL: BLACK CONDUCTIVE POLYSTYRENE ALLOY

Leo	14	01.04.16	A481
Leo	13	01.03.16	A477
MSP	12	18.11.14	12694
Allan	11	02.09.09	A232
Allan	10	21.08.09	A231
Allan	9	06.08.09	A227
Allan	8	31.07.08	A150

NAME	ISS.	DATE	C/NOTE
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APPROVED: B.Lim

CHECKED: D.P

DRAWN: Leo

CUSTOMER REF.:

ASSEMBLY DRG:

HARWIN

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TOLERANCES
X. = ± 1 mm
X.X = ± 0.20 mm
X.XX = ± 0.10 mm
X.XXX = ± 0.01 mm
ANGLES = $\pm 0'30''$
UNLESS STATED

MATERIAL: SEE NOTES
FINISH: SEE NOTES
S/AREA: mm?

TITLE:
M402V SERIES 0.5 BOARD TO BOARD
SMT V/T TYPE FEMALE

DRAWING NUMBER:
M402VF-3- XXX - XX NR
SHT 3 OF 3