

Excellent Integrated System Limited

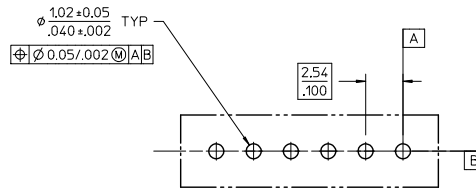
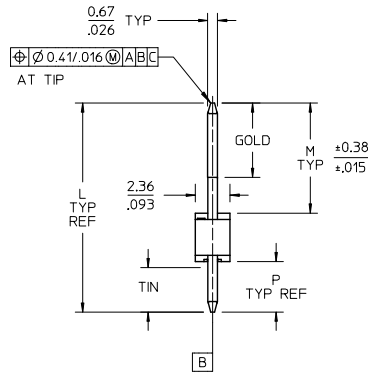
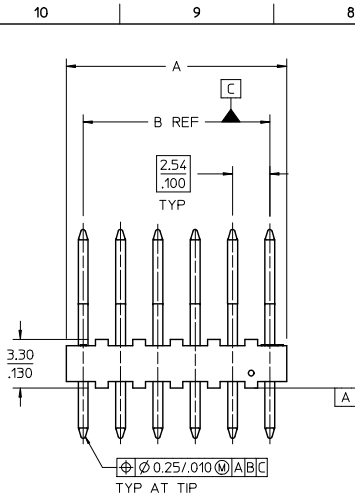
Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Molex Connector Corporation](#)
[0022032053](#)

For any questions, you can email us directly:

sales@integrated-circuit.com



PCB LAYOUT: COMPONENT SIDE
RECOMMENDED PCB THICKNESS: 1.57/.062

- NOTES:
- MATERIAL: NYLON, UL 94V-0, COLOR: WHITE
 - FINISH:
 - 197 = OVERALL REFLOWED MATTE TIN: 0.00152/.000060 MIN. OVER 0.00127/.000050 MIN. NICKEL
 - 222 = OVERALL MATTE TIN: 0.00254/.000100 MIN. OVER 0.00127/.000050 MIN. NICKEL
 - 241 = SELECT GOLD: 0.00051/.000020 MIN. SELECT MATTE TIN: 0.00254/.000100 MIN. OVERALL NICKEL UNDERPLATE: 0.00127/.000050 MIN.
 - PRODUCT SPEC: PS-10-07
 - PACKAGING SPEC: SEE CHART
 - SOLDERABILITY SPEC: SMES-152
 - PIN PUSHOUT FORCE: 8.9N / 2 LBS MIN
 - PARTS ARE STACKABLE END TO END AND SIDE TO SIDE ON 2.54/.100 CENTERS.
 - THIS PART CONFORMS TO CLASS B REQUIREMENTS OF COSMETIC SPECIFICATION PS-45499-002.

CKTS	DIM A	DIM B
02	4.83±0.20 .190±.008	2.54 .100
03	7.37±0.20 .290±.008	5.08 .200
04	9.91±0.20 .390±.008	7.62 .300
05	12.45±0.20 .490±.008	10.16 .400
06	14.99±0.23 .590±.009	12.70 .500
07	17.53±0.23 .690±.009	15.24 .600
08	20.07±0.23 .790±.009	17.78 .700
09	22.61±0.25 .890±.010	20.32 .800
10	25.15±0.25 .990±.010	22.86 .900
11	27.69±0.25 1.090±.010	25.40 1.000
12	30.23±0.28 1.190±.011	27.94 1.100
13	32.77±0.28 1.290±.011	30.48 1.200
14	35.31±0.28 1.390±.011	33.02 1.300
15	37.85±0.28 1.490±.011	35.56 1.400
16	40.39±0.28 1.590±.011	38.10 1.500

ADD 2.36 DIMENSION EC NO: LCP2014-5097 DRAWN: DFOY 2014/06/04 CHECKED: MKIPPER 2014/06/04 APPROVED: JCSMITH 2014/06/10 CK1	QUALITY SYMBOLS ▽=0 ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE		SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
		mm	INCH	MM/IN	DATE	4:1	INCH	INCH
		4 PLACES ±	---	±	---	DRAWN BY	DATE	TITLE KK 100 HEADER ASSEMBLY NON STANDARD OPTIONS
		3 PLACES ±	---	±	.015	KSAMIEC	2011/03/22	
		2 PLACES ±	0.38	±	---	CHECKED BY	DATE	DRAWN BY DATE
		1 PLACE ±	---	±	---	MKIPPER	2011/03/21	
		0 PLACE ±	---	±	---	APPROVED BY	DATE	MATERIAL NO. DOCUMENT NO. SHEET NO.
		ANGULAR ±1/2° DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		±	---	JCOMERC I	2011/09/30	
		SEE CHART		SEE CHART		SD-4030-0002		1 OF 5

ASSY NO:	A-4030-NB(197)	ASSY NO:	A-4030-NB(241)	ASSY NO:	A-4030-NA(241A)	ASSY NO:	A-4030-NF(197)
PLATING:	197 OVERALL TIN	PLATING:	241 SELECT GOLD 20 MI	PLATING:	241 SELECT GOLD 20 MI	PLATING:	197 OVERALL TIN
DIM L:	17.53/.690	DIM L:	17.53/.690	DIM L:	14.22/.560	DIM L:	21.34/.840
DIM M:	11.05/.435	DIM M:	11.05/.435	DIM M:	7.49/.295	DIM M:	14.22/.560
GOLD:	NA	GOLD:	5.08/.200	GOLD:	3.56/.140	GOLD:	NA
DIM P:	3.18/.125	DIM P:	3.18/.125	DIM P:	3.43/.135	DIM P:	3.81/.150
TIN:	OVERALL	TIN:	3.43/.135	TIN:	3.43/.135	TIN:	OVERALL
PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)	PACK:	PK-44743-002 (TUBE)	PACK:	PK-4030-001 (BULK)

CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:
02	22-03-2022	A-4030-02B(197)	02	22-10-2022	A-4030-02B(241)	02	22-47-9029	A-4030-02A(241A)	02	22-03-2026	A-4030-02F(197)
03	22-03-2032	A-4030-03B(197)	03	22-10-2032	A-4030-03B(241)	03	22-47-9039	A-4030-03A(241A)	03	22-03-2036	A-4030-03F(197)
04	22-03-2042	A-4030-04B(197)	04	22-10-2042	A-4030-04B(241)	04	22-47-9049	A-4030-04A(241A)	04	22-03-2046	A-4030-04F(197)
05	22-03-2052	A-4030-05B(197)	05	22-10-2052	A-4030-05B(241)	05	22-47-9059	A-4030-05A(241A)	05	22-03-2056	A-4030-05F(197)
06	22-03-2062	A-4030-06B(197)	06	22-10-2062	A-4030-06B(241)	06	22-47-9069	A-4030-06A(241A)	06	22-03-2066	A-4030-06F(197)
07	22-03-2072	A-4030-07B(197)	07	22-10-2072	A-4030-07B(241)	07	22-47-9079	A-4030-07A(241A)	07	22-03-2076	A-4030-07F(197)
08	22-03-2082	A-4030-08B(197)	08	22-10-2082	A-4030-08B(241)	08	22-47-9089	A-4030-08A(241A)	08	22-03-2086	A-4030-08F(197)
09	22-03-2092	A-4030-09B(197)	09	22-10-2092	A-4030-09B(241)	09	22-47-9099	A-4030-09A(241A)	09	22-03-2096	A-4030-09F(197)
10	22-03-2102	A-4030-10B(197)	10	22-10-2102	A-4030-10B(241)	10	22-47-9109	A-4030-10A(241A)	10	22-03-2106	A-4030-10F(197)
11	22-03-2112	A-4030-11B(197)	11	22-10-2112	A-4030-11B(241)	11	22-47-9119	A-4030-11A(241A)	11	22-03-2116	A-4030-11F(197)
12	22-03-2122	A-4030-12B(197)	12	22-10-2122	A-4030-12B(241)	12	22-47-9129	A-4030-12A(241A)	12	22-03-2126	A-4030-12F(197)
13	22-03-2132	A-4030-13B(197)	13	22-10-2132	A-4030-13B(241)	13	22-47-9139	A-4030-13A(241A)	13	22-03-2136	A-4030-13F(197)
14	22-03-2142	A-4030-14B(197)	14	22-10-2142	A-4030-14B(241)	14	22-47-9149	A-4030-14A(241A)	14	22-03-2146	A-4030-14F(197)
15	22-03-2152	A-4030-15B(197)	15	22-10-2152	A-4030-15B(241)	15	22-47-9159	A-4030-15A(241A)	15	22-03-2156	A-4030-15F(197)
16	22-03-2162	A-4030-16B(197)	16	22-10-2162	A-4030-16B(241)	16	22-47-9169	A-4030-16A(241A)	16	22-03-2166	A-4030-16F(197)

SEE SHEET 1 EC NO: UCP2014-5097 DRWN: JFOX CHKD: MKIPPER APPR: FSMITH CK1	2014/06/04 2014/06/04 2014/06/10	DESCRIPTION	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION			
			$\nabla = 0$ $\nabla = 0$ $\nabla = 0$	mm INCH 4 PLACES ± --- ± --- 3 PLACES ± --- ± .015 2 PLACES ± 0.38 ± --- 1 PLACE ± --- ± --- 0 PLACE ± ±	MM/IN	1:2	INCH	DRAWN BY: KSAMIEC DATE: 2011/03/22 CHECKED BY: MKIPPER DATE: 2011/03/21 APPROVED BY: JCOMERC I DATE: 2011/09/30	TITLE: KK 100 HEADER ASSEMBLY NON STANDARD OPTIONS		
			ANGULAR ±1/2° DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	MATERIAL NO. DOCUMENT NO.	molex						
			SEE CHART	SD-4030-0002	SHEET NO. 2 OF 5						
			THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION								

ASSY NO:	A-4030-NAB(197)	ASSY NO:	A-4030-NAF(197)	ASSY NO:	A-4030-NAH(197)	ASSY NO:	A-4030-NBE(197)
PLATING:	197 OVERALL TIN	PLATING:	197 OVERALL TIN	PLATING:	197 OVERALL TIN	PLATING:	197 OVERALL TIN
DIM L:	11.94/.470	DIM L:	21.34/.840	DIM L:	23.88/.940	DIM L:	16.00/.630
DIM M:	5.79/.228	DIM M:	14.94/.588	DIM M:	17.37/.684	DIM M:	9.27/.365
GOLD:	NA	GOLD:	NA	GOLD:	NA	GOLD:	NA
DIM P:	2.84/.112	DIM P:	3.10/.122	DIM P:	3.20/.126	DIM P:	3.43/.135
TIN:	OVERALL TIN	TIN:	OVERALL TIN	TIN:	OVERALL TIN	TIN:	OVERALL TIN
PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)

CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:
02	22-03-3021	A-4030-02AB(197)	02	22-03-2023	A-4030-02AF(197)	02	22-03-2028	A-4030-02AH(197)	02	22-03-2027	A-4030-02BE(197)
03	22-65-1030	A-4030-03AB(197)	03	22-03-2033	A-4030-03AF(197)	03	22-03-2038	A-4030-03AH(197)	03	22-03-2037	A-4030-03BE(197)
04	22-65-1040	A-4030-04AB(197)	04	22-03-2043	A-4030-04AF(197)	04	22-03-2048	A-4030-04AH(197)	04	22-03-2047	A-4030-04BE(197)
05	22-65-1050	A-4030-05AB(197)	05	22-03-2053	A-4030-05AF(197)	05	22-03-2058	A-4030-05AH(197)	05	22-03-2057	A-4030-05BE(197)
06	22-65-1060	A-4030-06AB(197)	06	22-03-2063	A-4030-06AF(197)	06	22-03-2068	A-4030-06AH(197)	06	22-03-2067	A-4030-06BE(197)
07	22-65-1070	A-4030-07AB(197)	07	22-03-2073	A-4030-07AF(197)	07	22-03-2078	A-4030-07AH(197)	07	22-03-2077	A-4030-07BE(197)
08	22-65-1080	A-4030-08AB(197)	08	22-03-2083	A-4030-08AF(197)	08	22-03-2088	A-4030-08AH(197)	08	22-03-2087	A-4030-08BE(197)
09	22-65-1090	A-4030-09AB(197)	09	22-03-2093	A-4030-09AF(197)	09	22-03-2098	A-4030-09AH(197)	09	22-03-2097	A-4030-09BE(197)
10	22-65-1100	A-4030-10AB(197)	10	22-03-2103	A-4030-10AF(197)	10	22-03-2108	A-4030-10AH(197)	10	22-03-2107	A-4030-10BE(197)
11	22-65-1110	A-4030-11AB(197)	11	22-03-2113	A-4030-11AF(197)	11	22-03-2118	A-4030-11AH(197)	11	22-03-2117	A-4030-11BE(197)
12	22-65-1120	A-4030-12AB(197)	12	22-03-2123	A-4030-12AF(197)	12	22-03-2128	A-4030-12AH(197)	12	22-03-2127	A-4030-12BE(197)
13	22-65-1130	A-4030-13AB(197)	13	22-03-2133	A-4030-13AF(197)	13	22-03-2138	A-4030-13AH(197)	13	22-03-2137	A-4030-13BE(197)
14	22-65-1140	A-4030-14AB(197)	14	22-03-2143	A-4030-14AF(197)	14	22-03-2148	A-4030-14AH(197)	14	22-03-2147	A-4030-14BE(197)
15	22-65-1150	A-4030-15AB(197)	15	22-03-2153	A-4030-15AF(197)	15	22-03-2158	A-4030-15AH(197)	15	22-03-2157	A-4030-15BE(197)
16	22-65-1160	A-4030-16AB(197)	16	22-03-2163	A-4030-16AF(197)	16	22-03-2168	A-4030-16AH(197)	16	22-03-2167	A-4030-16BE(197)

SEE SHEET 1 EC NO: UCP2014-5097 DRWN:JFOX 2014/06/04 CHKD:MKIPPER 2014/06/04 APPR:FSMITH 2014/06/10 CK1	QUALITY SYMBOLS 	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM/IN		SCALE 1:2	DESIGN UNITS INCH	THIRD ANGLE PROJECTION	
		4 PLACES	± ---	± ---	DRAWN BY KSAMIEC	DATE 2011/03/22	TITLE KK 100 HEADER ASSEMBLY NON STANDARD OPTIONS		
		3 PLACES	± ---	± .015	CHECKED BY MKIPPER	DATE 2011/03/21			
		2 PLACES	± 0.38	± ---	APPROVED BY JCOMERC I	DATE 2011/09/30	molex DOCUMENT NO. SD-4030-0002 SHEET NO. 3 OF 5		
		1 PLACE	± ---	± ---	MATERIAL NO. SEE CHART				
0 PLACE	±	±	ANGULAR ±1/2° DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				

ASSY NO:	A-4030-NBJ(197)	ASSY NO:	A-4030-NBP(197)	ASSY NO:	A-4030-NEL(197)	ASSY NO:	A-4030-NJH(222)
PLATING:	197 OVERALL TIN	PLATING:	197 OVERALL TIN	PLATING:	197 OVERALL TIN	PLATING:	222 OVERALL TIN
DIM L:	17.53/.690	DIM L:	24.38/.960	DIM L:	14.99/.590	DIM L:	11.56/.455
DIM M:	7.49/.295	DIM M:	18.03/.710	DIM M:	8.26/.325	DIM M:	4.88/.192
GOLD:	NA	GOLD:	NA	GOLD:	NA	GOLD:	NA
DIM P:	6.73/.265	DIM P:	3.05/.120	DIM P:	3.43/.135	DIM P:	3.38/.133
TIN:	OVERALL TIN	TIN:	OVERALL TIN	TIN:	OVERALL TIN	TIN:	OVERALL TIN
PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)	PACK:	PK-4030-001 (BULK)

CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:
02	22-03-5027	A-4030-02BJ(197)	02	22-03-5023	A-4030-02BP(197)	02	22-47-2029	A-4030-02EL(197)	02	50-29-1613	A-4030-02JH(222)
03	22-03-5037	A-4030-03BJ(197)	03	22-03-5033	A-4030-03BP(197)	03	22-47-2039	A-4030-03EL(197)	03		A-4030-03JH(222)
04	22-03-5047	A-4030-04BJ(197)	04	22-03-5043	A-4030-04BP(197)	04	22-47-2049	A-4030-04EL(197)	04		A-4030-04JH(222)
05	22-03-5057	A-4030-05BJ(197)	05	22-03-5053	A-4030-05BP(197)	05	22-47-2059	A-4030-05EL(197)	05		A-4030-05JH(222)
06	22-03-5067	A-4030-06BJ(197)	06	22-03-5063	A-4030-06BP(197)	06	22-47-2069	A-4030-06EL(197)	06		A-4030-06JH(222)
07	22-03-5077	A-4030-07BJ(197)	07	22-03-5073	A-4030-07BP(197)	07	22-47-2079	A-4030-07EL(197)	07		A-4030-07JH(222)
08	22-03-5087	A-4030-08BJ(197)	08	22-03-5083	A-4030-08BP(197)	08	22-47-2089	A-4030-08EL(197)	08		A-4030-08JH(222)
09	22-03-5097	A-4030-09BJ(197)	09	22-03-5093	A-4030-09BP(197)	09	22-47-2099	A-4030-09EL(197)	09		A-4030-09JH(222)
10	22-03-5107	A-4030-10BJ(197)	10	22-03-5103	A-4030-10BP(197)	10	22-47-2109	A-4030-10EL(197)	10		A-4030-10JH(222)
11	22-03-5117	A-4030-11BJ(197)	11	22-03-5113	A-4030-11BP(197)	11	22-47-2119	A-4030-11EL(197)	11		A-4030-11JH(222)
12	22-03-5127	A-4030-12BJ(197)	12	22-03-5123	A-4030-12BP(197)	12	22-47-2129	A-4030-12EL(197)	12		A-4030-12JH(222)
13	22-03-5137	A-4030-13BJ(197)	13	22-03-5133	A-4030-13BP(197)	13	22-47-2139	A-4030-13EL(197)	13		A-4030-13JH(222)
14	22-03-5147	A-4030-14BJ(197)	14	22-03-5143	A-4030-14BP(197)	14	22-47-2149	A-4030-14EL(197)	14		A-4030-14JH(222)
15	22-03-5157	A-4030-15BJ(197)	15	22-03-5153	A-4030-15BP(197)	15	22-47-2159	A-4030-15EL(197)	15		A-4030-15JH(222)
16	22-03-5167	A-4030-16BJ(197)	16	22-03-5163	A-4030-16BP(197)	16	22-47-2169	A-4030-16EL(197)	16		A-4030-16JH(222)

SEE SHEET 1 EC NO: UCP2014-5097 DRWN: JFOX CHKD: MKIPPER APPR: FSMITH 2014/06/04 2014/06/04 2014/06/10	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM/IN	SCALE 1:2	DESIGN UNITS INCH	THIRD ANGLE PROJECTION
	▽=0	4 PLACES ± --- ± ---	DRAWN BY KSAMIEC	DATE 2011/03/22	TITLE KK 100 HEADER ASSEMBLY NON STANDARD OPTIONS molex DOCUMENT NO. SD-4030-0002 SHEET NO. 4 OF 5	
	▽=0	3 PLACES ± --- ± .015	CHECKED BY MKIPPER	DATE 2011/03/21		
	▽=0	2 PLACES ± 0.38 ± ---	APPROVED BY JCOMERC I	DATE 2011/09/30		
		1 PLACE ± --- ± ---	MATERIAL NO.	SEE CHART		
	0 PLACE ± ±	SIZE A	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			
	ANGULAR ± 1/2°	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS				

ASSY NO:	A-4030-NA(197)A	ASSY NO:	A-4030-NF(241)	ASSY NO:		ASSY NO:	
PLATING:	197 OVERALL TIN	PLATING:	241 SELECT GOLD 20 MI	PLATING:		PLATING:	
DIM L:	14.22/560	DIM L:	21.34/840	DIM L:		DIM L:	
DIM M:	7.49/295	DIM M:	14.22/560	DIM M:		DIM M:	
GOLD:	NA	GOLD:	5.08/200	GOLD:		GOLD:	
DIM P:	3.43/135	DIM P:	3.81/150	DIM P:		DIM P:	
TIN:	OVERALL TIN	TIN:	5.08/200	TIN:		TIN:	
PACK:	PK-44743-002 (TUBE)	PACK:	PK-4030-001 (BULK)	PACK:		PACK:	

CKT	PART NO:	ENGINEERING NO:	CKT	PART NO:	ENGINEERING NO:	CKT		CKT		
02	22-47-4023	A-4030-02A(197)A	02	22-10-2024	A-4030-02F(241)	02		02		
03	22-47-4033	A-4030-03A(197)A	03	22-10-2034	A-4030-03F(241)	03		03		
04	22-47-4043	A-4030-04A(197)A	04	22-10-2044	A-4030-04F(241)	04		04		
05	22-47-4053	A-4030-05A(197)A	05	22-10-2054	A-4030-05F(241)	05		05		
06	22-47-4063	A-4030-06A(197)A	06	22-10-2064	A-4030-06F(241)	06		06		
07	22-47-4073	A-4030-07A(197)A	07	22-10-2074	A-4030-07F(241)	07		07		
08	22-47-4083	A-4030-08A(197)A	08	22-10-2084	A-4030-08F(241)	08		08		
09	22-47-4093	A-4030-09A(197)A	09	22-10-2094	A-4030-09F(241)	09		09		
10	22-47-4103	A-4030-10A(197)A	10	22-10-2104	A-4030-10F(241)	10		10		
11	22-47-4113	A-4030-11A(197)A	11	22-10-2114	A-4030-11F(241)	11		11		
12	22-47-4123	A-4030-12A(197)A	12	22-10-2124	A-4030-12F(241)	12		12		
13	22-47-4133	A-4030-13A(197)A	13	22-10-2134	A-4030-13F(241)	13		13		
14	22-47-4143	A-4030-14A(197)A	14	22-10-2144	A-4030-14F(241)	14		14		
15	22-47-4153	A-4030-15A(197)A	15	22-10-2154	A-4030-15F(241)	15		15		
16	22-47-4163	A-4030-16A(197)A	16	22-10-2164	A-4030-16F(241)	16		16		

SEE SHEET 1 EC NO: UCP2014-5097 DRWN: JDFX CHKD: MKIPPER APPR: FSMITH CK1	2014/06/04 2014/06/04 2014/06/10	DESCRIPTION QUALITY SYMBOLS ∇=0 ∇=0 ∇=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM/IN		SCALE 1:2	DESIGN UNITS INCH	THIRD ANGLE PROJECTION		
			4 PLACES	± ---	± ---	DRAWN BY KSAMIEC	DATE 2011/03/22	TITLE KK 100 HEADER ASSEMBLY NON STANDARD OPTIONS molex DOCUMENT NO. SD-4030-0002 SHEET NO. 5 OF 5			
			3 PLACES	± ---	± .015	CHECKED BY MKIPPER	DATE 2011/03/21				
			2 PLACES	± 0.38	± ---	APPROVED BY JCOMERC I	DATE 2011/09/30				
			1 PLACE	± ---	± ---	MATERIAL NO. SEE CHART					
0 PLACE	±	±	SIZE A								
ANGULAR ±1/2° DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS			THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION								