

PFC-HFEM-XXX-T-XX.XX-SE-XX A

THIS PRODUCT MANUFACTURED WITH LEAD-FREE PROCESSING

PFC-HFEM-XXX-T-XX.XX-SE-XX
 No. OF POSITIONS _____
 -020, -040, -060 (PER ROW)
 LENGTH _____
 -03.00: 3.00[76.2] INCHES
 -05.00: 5.00[127.0] INCHES
 -10.00: 10.00[254.0] INCHES
 SIGNAL _____
 -SE: SINGLE ENDED
 OPTION _____
 -MH: MOUNTING HOLES (SEE FIG.2, SHEET 2)

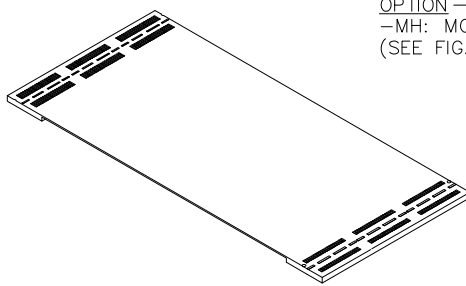


TABLE 2		
LENGTH	"A"	"B"
-03.00	3.00[76.2]	2.54[64.5]
-05.00	5.00[127.0]	4.54[115.3]
-10.00	10.00[254.0]	9.54[242.3]

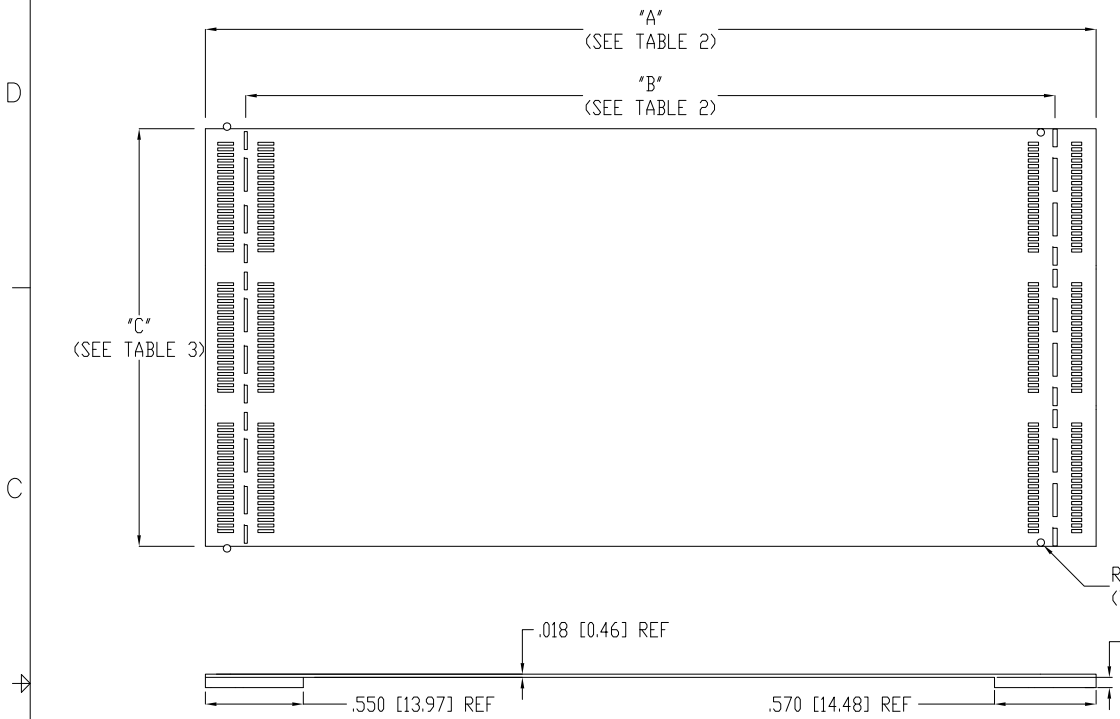


FIG. 1
 PFC-HFEM-042-T-05.00-DP SHOWN

TABLE 1	
ASSEMBLY PART #	
PFC-HFEM-020-T-03.00-SE	
PFC-HFEM-040-T-03.00-SE	
PFC-HFEM-060-T-03.00-SE	
PFC-HFEM-020-T-03.00-SE-MH	
PFC-HFEM-040-T-03.00-SE-MH	
PFC-HFEM-060-T-03.00-SE-MH	
PFC-HFEM-020-T-05.00-SE	
PFC-HFEM-040-T-05.00-SE	
PFC-HFEM-060-T-05.00-SE	
PFC-HFEM-020-T-05.00-SE-MH	
PFC-HFEM-040-T-05.00-SE-MH	
PFC-HFEM-060-T-05.00-SE-MH	
PFC-HFEM-020-T-10.00-SE	
PFC-HFEM-040-T-10.00-SE	
PFC-HFEM-060-T-10.00-SE	
PFC-HFEM-020-T-10.00-SE-MH	
PFC-HFEM-040-T-10.00-SE-MH	
PFC-HFEM-060-T-10.00-SE-MH	

- NOTES:
- ⊙ REPRESENTS A CRITICAL DIMENSION
 - FABRICATION OF THIS FLEX SHALL BE IN CONFORMANCE WITH IPC-6013 CLASS 2
 - DIMENSIONS ARE IN INCHES
 - FLAME CLASS TO BE UL 94V-0 AND MUST MEET REQUIREMENTS OF UL796
 - SEE PFC GERBER PACKAGE FOR HOLE CHART AND PLATING SPECS.
 - SEE PFC GERBER PACKAGE FOR CONDUCTOR GEOMETRY
 - SEE PFC GERBER PACKAGE FOR STIFFENER TOOL-CHART GEOMETRY
 - COVERFILM/SOLDERMASK: MUST BE IN ACCORDANCE WITH IPC-6013 CLASS 2
 - FINISH: IMMERSION GOLD (ENIG) PER IPC-4552
 - FR4 Tg: MINIMUM GLASS TRANSITION TEMPERATURE (Tg) OF 170°C
 - BOW AND TWIST: MAXIMUM ALLOWABLE BOW AND TWIST TO BE IN ACCORDANCE WITH IPC 6013 CLASS 2
 - ROHS: ALL MATERIALS MUST BE COMPLIANT WITH THE EUROPEAN UNION ROHS DIRECTIVE, 2002/95/EC
 - LAYER STACK-UP FOR IMPEDANCE:
 LAYER 1-GROUND PLANE (HATCH)
 LAYER 2-50 OHMS SIGNAL (SE) TRACE WIDTH= 0.0047"
 LAYER 3-GROUND PLANE (HATCH)
 *CONTROLLED IMPEDANCE REQUIREMENT OF ±10%
 - CONDUCTORS: MINIMUM TRACE = 0.0033"
 - SILKSCREEN: WHITE NONCONDUCTIVE INK.
 - ELECTRICAL TEST: TESTED TO STANDARD PFC-WI-136
 100% ISOLATION AND CONTINUITY TEST REQUIRED FOR EVERY BOARD
 100% HI-POT TEST REQUIRED AT 250V
 MAXIMUM CONNECTOR TO CONNECTOR TO BE 10 OHMS
 MINIMUM PIN TO PIN ISOLATION TO BE 5.0 MEGA OHMS
 - PFC LOT CODE: CONTAIN PFC LOGO WITH UL MARKING AND WW-YY LOT#

UNLESS OTHERWISE NOTED		PROPRIETARY NOTE THIS DOCUMENT CONTAINS INFORMATION CONFIDENTIAL AND PROPRIETARY TO PFC AND SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE OTHER THAN THAT WHICH IT WAS OBTAINED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PFC FLEXIBLE CIRCUITS	PFC FLEXIBLE CIRCUITS 11 CANADIAN ROAD UNIT 7 SCARBOROUGH ONTARIO PHONE: 416-750-8433 FAX: 416-750-0016 e-Mail: sales@pfcflex.com	
DIMENSIONS ARE IN INCHES	TOLERANCES ARE:		DESCRIPTION: PFC -- HFEM FLEX CIRCUIT	DWG. NO. PFC-HFEM-XXX-T-XX.XX-SE-XX
ONE PLACE DECIMALS ±.1	THREE PLACE DECIMALS ±.015	DO NOT SCALE DRAWING	BY: PFC	07/18/2013
TWO PLACE DECIMALS ±.02	FOUR PLACE DECIMALS ±.0050			SHEET 1 OF 5
	ANGULAR ± 3.0 DEG			

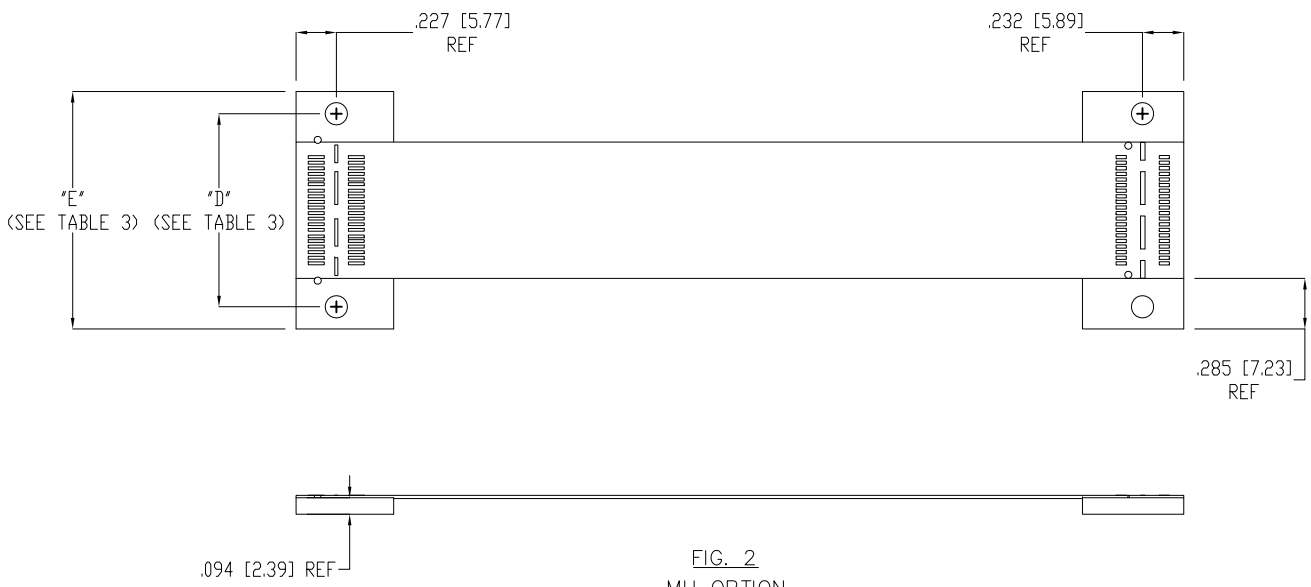


FIG. 2
 - MH OPTION
 (SAME AS FIG. 1, UNLESS OTHERWISE STATED)
 PFC-HFEM-020-T-05.00-SE-MH (SHOWN)

LAYER STACKUP

TOP COVERFILM: 1 MIL KAPTON
1 MIL ADHESIVE
SIGNAL LAYER 1: 1 OZ COPPER
3 MIL KAPTON
2 MIL ADHESIVE
SIGNAL LAYER 2: 1 OZ COPPER
3 MIL KAPTON
SIGNAL LAYER 3: 1 OZ COPPER
1 MIL ADHESIVE
BOTTOM COVERFILM: 1MIL KAPTON
1.6 MIL ADHESIVE [KREMPER (AKAFLEX CDF)]
*OR EQUIVALENT
STIFFENERS: 59 MIL HIGH TEMP FR4
(93 MIL FOR -MH OPTION)

No. OF POS	"C"	"D"	"E"
-020	.768 +/- .010 [19.50 +/- 0.25]	1.088[27.62]	1.338[33.97]
-040	1.556 +/- .010 [39.52 +/- 0.25]	1.876[47.64]	2.126[53.99]
-060	2.344 +/- .010 [59.54 +/- 0.25]	2.664[67.65]	2.914[74.00]

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DIMENSIONS ARE IN INCHES			11 CANADIAN ROAD UNIT 7 SCARBOROUGH ONTARIO PHONE: 416-750-8433 FAX: 416-750-0016 e-Mail: sales@pfcflex.com	
TOLERANCES ARE:		SHEET SCALE: 1:1	DESCRIPTION: PFC - HFEM FLEX CIRCUIT	
ONE PLACE DECIMALS ±.1	THREE PLACE DECIMALS ±.015		DWG. NO. PFC-HFEM-XXX-T-XX.XX-SE-XX	REV. A
TWO PLACE DECIMALS ±.02	FOUR PLACE DECIMALS ±.0050	BY: PFC 07/18/2013		
ANGULAR ± 3.0 DEG		SHEET 2 OF 5		
DO NOT SCALE DRAWING				

PFC-HFEM-XXX-T-XX.XX-SE-XX A

PFC-HFEM-XXX-T-XX.XX-SE-XX

No OF POSITIONS
-020, -040, -060 (PER ROW)

TRANSFER END
(MALE-FEMALE)

OPTION
-MH: MOUNTING HOLES
(SEE FIG. 2, SHEET 2)
(LEAVE BLANK FOR STANDARD)

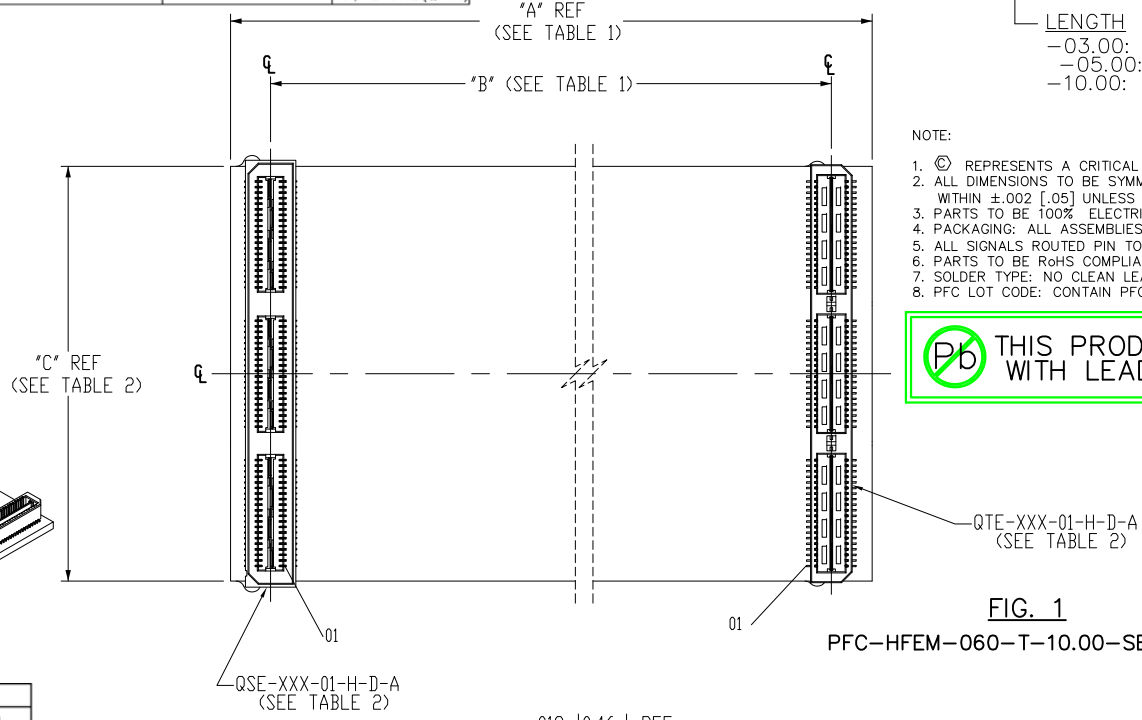
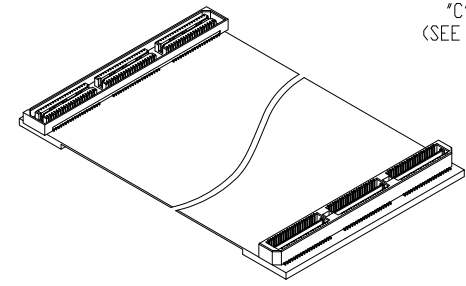
-SE: SINGLE ENDED

TABLE 2

No. OF POS	"C"	"D"	"E"	QSE-XXX-01-H-D-SE-A	QTE-XXX-01-H-D-SE-A	FLEX
-020	.768 +/- .010 [19.50 +/- 0.25]	1.0875[27.623]	1.3375[33.973]	QSE-020-01-H-D-A	QTE-020-01-H-D-A	3", FE-10160 (QTY:1) 5", FE-10161 (QTY:1) 10", FE-10162 (QTY:1)
-040	1.556 +/- .010 [39.52 +/- 0.25]	1.8755[47.638]	2.1255[53.988]	QSE-040-01-H-D-A	QTE-040-01-H-D-A	3", FE-10160 (QTY:2) 5", FE-10161 (QTY:2) 10", FE-10162 (QTY:2)
-060	2.344 +/- .010 [59.54 +/- 0.25]	2.6635[67.653]	2.9135[74.003]	QSE-060-01-H-D-A	QTE-060-01-H-D-A	3", FE-10160 (QTY:3) 5", FE-10161 (QTY:3) 10", FE-10162 (QTY:3)

TABLE 1

LENGTH	"A"	"B"
-3.00	3.00[76.2]	2.54[64.5]
-5.00	5.00[127.0]	4.54[115.3]
-10.00	10.00[254.0]	9.54[242.3]



- NOTE:
1. Ⓢ REPRESENTS A CRITICAL DIMENSION
 2. ALL DIMENSIONS TO BE SYMMETRICAL ABOUT CENTERLINE WITHIN ±.002 [.05] UNLESS OTHERWISE STATED
 3. PARTS TO BE 100% ELECTRICALLY TESTED PER PFC-WI-136
 4. PACKAGING: ALL ASSEMBLIES TO BE PACKAGED TO PFC-WI-164
 5. ALL SIGNALS ROUTED PIN TO PIN (E.G. 1 TO 1, 2 TO 2, ETC)
 6. PARTS TO BE RoHS COMPLIANT
 7. SOLDER TYPE: NO CLEAN LEAD-FREE
 8. PFC LOT CODE: CONTAIN PFC LOGO WITH UL MARKING AND WW-YY LOT#

Pb THIS PRODUCT MANUFACTURED WITH LEAD-FREE PROCESSING

FIG. 1
PFC-HFEM-060-T-10.00-SE SHOWN

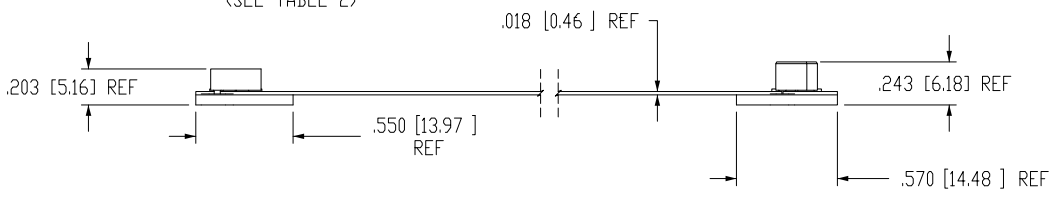


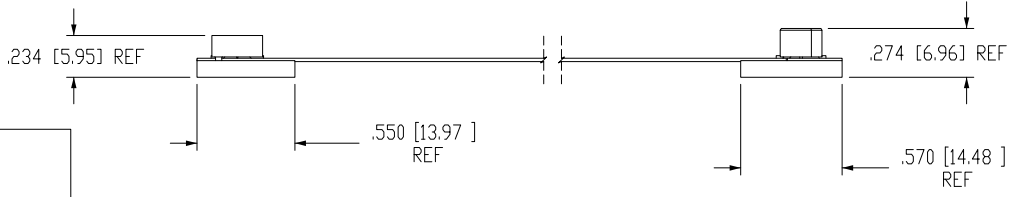
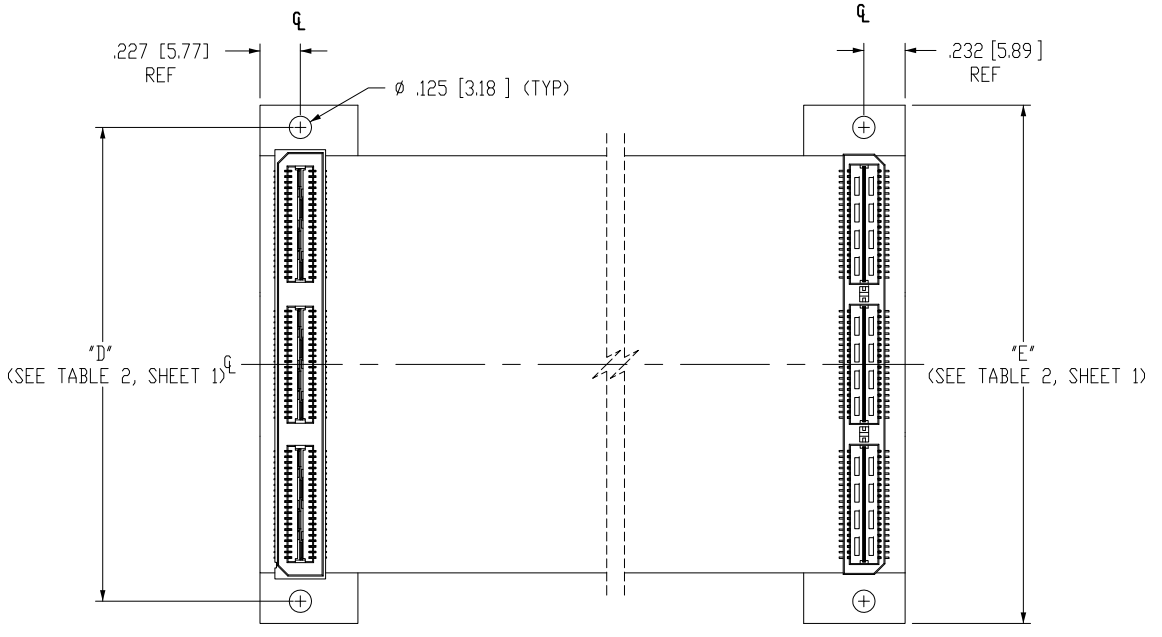
TABLE 3
(FOR PFC FLEX MANUFACTURING REFERENCE)

PART NUMBER

PFC-HFEM-020-T-03.00-SE
PFC-HFEM-020-T-03.00-SE-MH
PFC-HFEM-040-T-03.00-SE
PFC-HFEM-040-T-03.00-SE-MH
PFC-HFEM-060-T-03.00-SE
PFC-HFEM-060-T-03.00-SE-MH
PFC-HFEM-020-T-05.00-SE
PFC-HFEM-020-T-05.00-SE-MH
PFC-HFEM-040-T-05.00-SE
PFC-HFEM-040-T-05.00-SE-MH
PFC-HFEM-060-T-05.00-SE
PFC-HFEM-060-T-05.00-SE-MH
PFC-HFEM-020-T-10.00-SE
PFC-HFEM-020-T-10.00-SE-MH
PFC-HFEM-040-T-10.00-SE
PFC-HFEM-040-T-10.00-SE-MH
PFC-HFEM-060-T-10.00-SE
PFC-HFEM-060-T-10.00-SE-MH

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DIMENSIONS ARE IN INCHES	TOLERANCES ARE:	THIS DOCUMENT CONTAINS INFORMATION CONFIDENTIAL AND PROPRIETARY TO PFC AND SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE OTHER THAN THAT WHICH IT WAS OBTAINED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PFC FLEXIBLE CIRCUITS	
ONE PLACE DECIMALS ±.1	THREE PLACE DECIMALS ±.015	PFC FLEXIBLE CIRCUITS 11 CANADIAN ROAD UNIT 7 SCARBOROUGH ONTARIO PHONE: 416-750-8433 FAX: 416-750-0016 e-Mail: sales@pfcflex.com	
TWO PLACE DECIMALS ±.02	FOUR PLACE DECIMALS ±.0050 ANGULAR ± 3.0 DEG		
CONNECTOR MATERIALS: INSULATORS: LCP CONTACTS, TERMINALS, & GROUND PLANES: PHOS BRONZE FLEX MATERIALS: SEE CROSS SECTION DETAIL		DO NOT SCALE DRAWING	SHEET SCALE: 1:1
DESCRIPTION: HIGH SPEED FLEX 0.80mm ASSEMBLY			
DWG. NO. PFC-HFEM-XXX-T-XX.XX-SE-XX		REV. A	
BY: PFC		07/18/2013	SHEET 3 OF 5

FIG. 2
 -MH OPTION
 (SAME AS FIG. 1, UNLESS OTHERWISE STATED)
 PFC-HFEM-060-T-10.00-SE-MH SHOWN



COVERFILM	.001[0.03] POLYIMIDE .001[0.03] ADHESIVE
COPPER CLAD	1 oz COPPER .003[0.03] POLYIMIDE
ADHESIVE	.002[0.05] ADHESIVE
COPPER CLAD	1 oz COPPER .003[0.08] POLYIMIDE 1 oz COPPER
COVERFILM	.001[0.03] POLYIMIDE .001[0.03] ADHESIVE
ADHESIVE	.0016[0.04] ADHESIVE
STIFFENER	STANDARD: .059[1.50] FR4 -MH OPTION: .093[2.36] FR4

CROSS SECTION OF FLEX & STIFFENER
 NOT TO SCALE

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DIMENSIONS ARE IN INCHES			
TOLERANCES ARE: ONE PLACE DECIMALS ±.1 TWO PLACE DECIMALS ±.02 THREE PLACE DECIMALS ±.015 FOUR PLACE DECIMALS ±.0050 ANGULAR ± 3.0 DEG		DO NOT SCALE DRAWING SHEET SCALE: 1:1	
CONNECTOR MATERIALS: INSULATORS: LCP CONTACTS, TERMINALS, & GROUND PLANES: PHOS BRONZE FLEX MATERIALS: SEE CROSS SECTION DETAIL		DESCRIPTION: HIGH SPEED FLEX 0.80mm ASSEMBLY	
		DWG. NO. PFC-HFEM-XXX-T-XX.XX-SE-XX	REV. A
		BY: PFC 07/18/2013	SHEET 4 OF 5

PFC-HFEM-SE

-20 Shown. -40 and -60 repeat same pattern.

J1 Pin	Signal	J2 Pin
1	S	1
2	S	2
3	S	3
4	S	4
5	S	5
6	S	6
7	S	7
8	S	8
9	S	9
10	S	10
11	S	11
12	S	12
13	S	13
14	S	14
15	S	15
16	S	16
17	S	17
18	S	18
19	S	19
20	S	20
21	S	21
22	S	22
23	S	23
24	S	24
25	S	25
26	S	26
27	S	27
28	S	28
29	S	29
30	S	30
31	S	31
32	S	32
33	S	33
34	S	34
35	S	35
36	S	36
37	S	37
38	S	38
39	S	39
40	S	40

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DIMENSIONS ARE IN INCHES	TOLERANCES ARE:		
ONE PLACE DECIMALS ±.1	THREE PLACE DECIMALS ±.015	DESCRIPTION: PFC - HFEM [SCHEMATIC]	
TWO PLACE DECIMALS ±.02	FOUR PLACE DECIMALS ±.0050 ANGULAR ± 3.0 DEG		
DO NOT SCALE DRAWING		SHEET SCALE: 1:1	DWG. NO. PFC-HFEM-XXX-T-XX.XX-SE-XX
			REV. A
		BY: PFC 07/18/2013	SHEET 5 OF 5