

NIST Fully-Toleranced Test Case 08 - Feature and Specification Index [FTC08]

12/14/2016 Rev. C.1

Bryan Fischer Advanced Dimensional Management LLC

Feature ID	Feature Description	Specification	Element ID	Comments
F1	Datum Feature A	Flatness .03Ⓢ	T1	Applies in free state
		Flatness .015	T2	
		Datum Feature Symbol A	DF1	
F2	Datum Feature B	∅.238 +.005/-.001	D1	
		Perpendicularity ∅.015ⓈⓈ A	T3	Applies in free state
		Datum Feature Symbol B	DF2	
F3	Datum Feature C	∅.238 +.005/-.001	D2	
		Position ∅.020ⓈⓈ A B	T4	Applies in free state
		Datum Feature Symbol C	DF3	
F4	Datum Feature D	Parallelism .03 A	T5	
		Profile .06 A B C	T6	
		Datum Feature Symbol D	DF4	
F5	Datum Feature E	Datum Feature Symbol E	DF5	Controlled by D3 and T7
F6	Datum Feature F	Datum Feature Symbol F	DF6	Controlled by D3 and T7
F5-F14	Pattern of PCB Mtg Holes	10X ∅.213 +.005/-.001	D3	Controls DF E and DF F
		Position ∅.04Ⓢ D B C	T7	Controls DF E and DF F
		Position ∅.02Ⓢ D B C		
F15-F16	Datum Feature G	2X ∅.250 +.006/-.001	D4	
		Position ∅.03 D B C	T8	
		Datum Feature Symbol G	DF7	
F17	Datum Feature H	∅.228 +.005/-.001	D5	
		Position ∅.050Ⓢ D B C	T9	
		Position ∅.020Ⓢ D B C		
		SIM REQ T 1	STR1	Constrains lower segment positional tolerance zones for datum features H and J into a group
		Datum Feature Symbol H	DF8	
F18	Datum Feature J	∅.242 +.005/-.001	D6	
		Position ∅.050Ⓢ D B C	T10	
		Position ∅.020Ⓢ D B C		
		SIM REQ T 1	STR2	Constrains lower segment positional tolerance zones for datum features H and J into a group
		Datum Feature Symbol J	DF9	
F19	Datum Feature K	∅.228 +.005/-.001	D7	
		Position ∅.050Ⓢ D B C	T11	
		Position ∅.020Ⓢ D B C		
		SIM REQ T 2	STR3	Constrains lower segment positional tolerance zones for datum features L and L into a group
		Datum Feature Symbol K	DF10	
F20	Datum Feature L	∅.242 +.005/-.001	D8	
		Position ∅.050Ⓢ D B C	T12	
		Position ∅.020Ⓢ D B C		
		SIM REQ T 2	STR4	Constrains lower segment positional tolerance zones for datum features L and L into a group
		Datum Feature Symbol L	DF11	
F21-F22	Pattern of 2 Other Main Mtg Holes	2X ∅.238 +.005/-.001	D9	
		Position ∅.023ⓈⓈ A B C	T13	Applies in free state
F23	Bottom Inside Surface	Parallelism .02 D	T14	
		Profile .06 A B C	T15	

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F24	Surface Opposite Datum Feature A	Parallelism .015(T) A	T16	
		Parallelism .03(F)(T) A	T17	Applies in free state
		Profile .05 A B C	T18	
F25	External Sidewall in -X Direction	Profile .06 A B C	T19	
F25.1	Limited Area on External Sidewall in -X Direction	Flatness .015	T20	
		L1 ↔ L2	STR5	Defines that flatness applies between line elements L1 and L2
		Represented line element	RLE1	L1
		Represented line element	RLE2	L2
		Leader-Directed Note L1	LDN1	Labels RLE 1 that bounds limited area
		Leader-Directed Note L2	LDN2	Labels RLE 2 that bounds limited area
		Crosshatch between L1 and L2	CH1	
F26	Recess for Placard	Parallelism .015(T) D	T21	
		Profile .035 D B C	T22	
F27	Cutout for PCB Mtg	Profile .04 D E-F All Around	T23	
F28	Square hole cutout	(□1.100)	D10	
		Profile .015 D G(M) All Around	T24	
F29	Cutout for E Stop	Profile .040 D B C Profile .005 D B C All Around	T25	
F30	Cutout for Middle Switch on -X Side	Profile .015 D H(M)-J(M) All Around	T26	
F31	Cutout for Middle Switch on +X Side	Profile .015 D K(M) L(M) All Around	T27	
-	General Profile Tolerance	Profile Surface .06 A B C	T28	
MCS1	MCS for Views A, B		CS1-1	Main MCS for model
	MCS for DRF A		CS1-2	Same location as CS1-1
	MCS for DRF A B		CS1-3	Same location as CS1-1
	MCS for DRF A B C - Free State		CS1-4	Same location as CS1-1
	MCS for DRF A B C - Restrained		CS1-5	Same location as CS1-1
MCS2	MCS for Views C, D		CS2-1	
	MCS for DRF D		CS2-2	Same location as CS2-1
	MCS for DRF D B C		CS2-3	Same location as CS2-1
MCS3	MCS for DRF D E-F		CS3	
MCS4	MCS for DRF D G(M)		CS4	
MCS5	MCS for DRF D H(M)-J(M)		CS5	
MCS6	MCS for DRF D K(M) L(M)		CS6	
-	General Notes	NOTES...	STR6	Flat to screen

Notes:

- Restraint applies to all dimensions and tolerances except those marked (F).
- There are no specifications in this FTC that contain semantically-important extension lines or annotation plane placement.

Revisions:

- Identified feature control frame strings as separate annotations and labelled each string with a unique Ano ID for tracking and statistical purposes

LEGEND	
CH	Crosshatch
CS	Coordinate System
D	Dimension
DF	Datum Feature
LDN	Leader-Directed Note
RLE	Represented Line Element
SIELD	PMI entity contains Semantically-Important Extension Line Direction
STR	String
T	Tolerance

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Feature ID	Feature Description	Specification	Element ID	Comments
	<ul style="list-style-type: none">- General Notes were labelled as STR1; now labelled as STR6- Moved "SIM REQ 1" for F17 and F18 to new lines and labelled as STR1 and STR2- Moved "SIM REQ 2" for F19 and F20 to new lines and labelled as STR3 and STR4- Moved "L1 ↔ L2" for F25.1 to new line and labelled as STR5			