

Process Improvement Project: SMFL Control Charts

May 26th, 2006

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Outline

- Project Overview
- Process Map
- Setting Specification Limits
- Future Needs

Project Overview

Pad Oxide SPC Charts

EXIT

Process Out of Control If:

- any point outside the spec limits (i.e. a single point above or below 3 sigma)
- a run of 6 or more points increasing or decreasing
- a run of 5 or more points above/below the target
- 2 of 3 points above/below 2 sigma

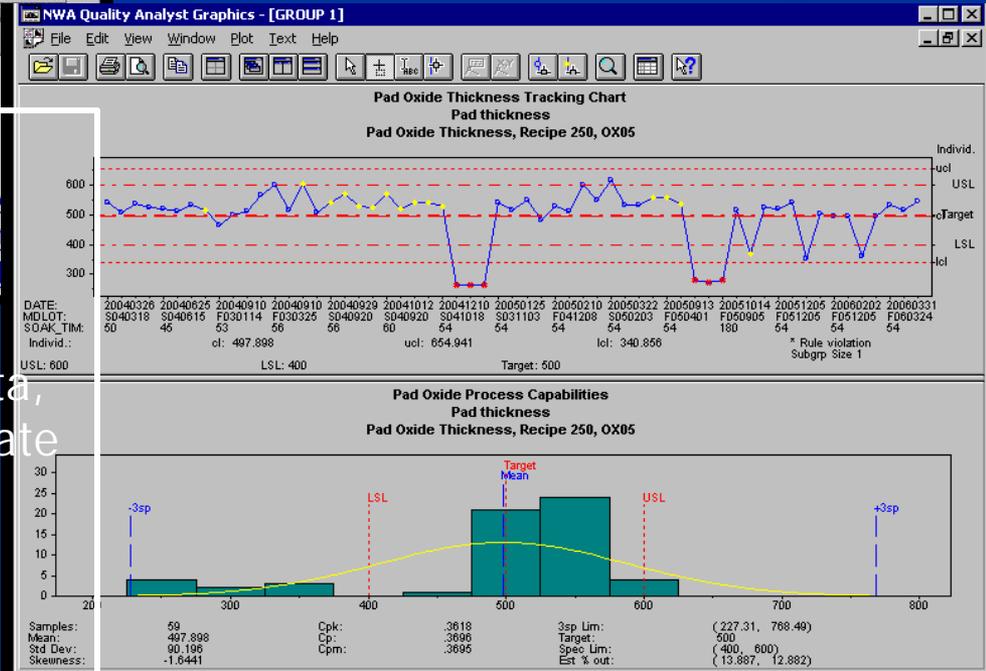


Make these sheets work!

If process is out of control initiate the out of control action plan



M
Quest
Click



3. Query should look up the correct data, combining processes when appropriate
4. Target, USL, LSL should be set appropriately

Process Map



Click on each item to view details....

What is Complete?

SPC Queries in MESA	Operation
SPC6SC_PAD	Pad Oxide
SPC6SC_CNT	Particle Count for Step 3
SPC6SC_FO	Field Oxide
SPC6SC_GOX	Gate Oxide
SPC6SC_KOX	KOOI Oxide
SPC6SC_LTO	Low Temperature Oxide
SPC6SC_MTL	Metal 1
SPC6SC_NI1	1500 A Nitride
SPC6SC_NI2	3500 A Nitride
SPC6SC_NRS	Test Measurement
SPC6SC_POL	Poly
SPC6SC_PRS	Test Measurement
SPC6SC_WO	Well Oxide
SPC6SC_WRS	Test Measurement
SPC6SC_2CD	2um CD Line Width
SPC6SC_350	Well Oxide?
SPC6SCPORS	DE01?

What is Complete?

Process	Product	Step #	Recipe Desc	Required Action	Query Name in Mesa	Query Save Location	Power Point and Run File Location	Powerpoint Name	Document Name in MESA
PAD OXIDE	SMFL-CMOS	4, 16	500A oxide--OX05	Make all 7 steps use the same control chart	SPC6SC_PAD	QGPL.SC6PAD	J:\QA\SCMOS150	pad.pps	SPC6SCPAD
	SUB-CMOS 150	4, 17	500A oxide--OX05		SPC6SC_PAD	QGPL.SC6PAD	J:\QA\SCMOS150	pad.pps	SPC6SCPAD
	ADV-CMOS 150	4,10,39	500A oxide--OX05		SPC6SC_PAD	QGPL.SC6PAD	J:\QA\SCMOS150	pad.pps	SPC6SCPAD
PARTICLE COUNT	SMFL-CMOS	3	particle count	Make all 3 products use the same control chart	SPC6SC_CNT	QGPL.PTCL_SC6	J:\QA\SCMOS150	ptcl.pps	SPC6SCPTCL
	SUB-CMOS 150	3	particle count		SPC6SC_CNT	QGPL.PTCL_SC6	J:\QA\SCMOS150	ptcl.pps	SPC6SCPTCL
	ADV-CMOS 150	3	particle count		SPC6SC_CNT	QGPL.PTCL_SC6	J:\QA\SCMOS150	ptcl.pps	SPC6SCPTCL
FIELD OXIDE GROWTH	SMFL-CMOS	25	163, 5hr Soak 950C	Make separate query and control chart for each product	SPC_FIELDO	QGPL.FIELD0X	J:\QA	FIELD_OX.pps	SPC_FIELD_OX
	SUB-CMOS 150	26	406, 65min Soak 1100C		SPC6SC_FO	QGPL.SC6FLDOX	J:\QA\SCMOS150	FIELD0X.pps	SPC6SCFIELD0X
	ADV-CMOS 150	---	---		---	---	---	---	---
GATE OXIDE	SMFL-CMOS	35	474, 310A--OX06	Each product needs its own chart b/c unique recipes	SPC_GATEOX	GATE_OX	J:\QA	Gate_ox.pps	SPC6SCGATEOX
	SUB-CMOS 150	35	215, 150A--OX06		SPC6SC_GOX	SC6GATEOX	J:\QA\SCMOS150	gateox.pps	SPC_GATE_OX
	ADV-CMOS 150	33	213, 100A--OX06		SPCADV_GOX	SPCADVGOX	J:\QA\ADVCMOS	gate_ox.pps	SPCADVGOX
KOOI OXIDE	SMFL-CMOS	28	311, 40 min wet O2 900C	Add SMFL-CMOS to Sub-CMOS Query	SPC6SC_KOX	SC6KOOIOX	J:\QA\SCMOS150	KOOlox	SPC6SCKOOI
	SUB-CMOS 150	29	311, 40 min wet O2 900C		SPC6SC_KOX	SC6KOOIOX	J:\QA\SCMOS150	KOOlox	SPC6SCKOOI
	ADV-CMOS 150	---	---		---	---	---	---	---
LTO	SMFL-CMOS	51, 61	A6-FAC 0.4 TEOS	SMFL-CMOS needs SPC in Instrs for both steps. SUB-CMOS needs SPC in Instrs for step 50. SMFL, SUB, and ADV step 62 can all be combined into one SPC. ADV CMOS step 18 needs its own SPC.	SPC6SCLTO	SC6CLTOX	J:\QA\SCMOS150	LTO.pps	SPC6SCLTO
	SUB-CMOS 150	50, 61	A6-FAC 0.4 TEOS		SPC6SCLTO	SC6CLTOX	J:\QA\SCMOS150	LTO.pps	SPC6SCLTO
	ADV-CMOS 150	62	A6-FAC 0.4 TEOS		SPC6SCLTO	SC6CLTOX	J:\QA\SCMOS150	LTO.pps	SPC6SCLTO
	ADV-CMOS 150	18	A6-FAC 0.6 TEOS		SPCADV_LTO	SC6ADVLTO	J:\QA\ADVCMOS	LTO.pps	SPCADVLTO

Setting Spec/Control Limits

- Specification Limits:
 - USL: The largest value acceptable where the device will still work.
 - LSL: The smallest value acceptable where the device will still work.
- Control Limits:
 - UCL: Upper limit, that when exceeded indicates the process is out of control.
 - LCL: Lower limit, that when exceeded indicates the process is out of control.

Setting Spec/Control Limits

- Specifications Limits are set by engineers
 - Dependent on the process requirements
 - ie. Minimum oxide thickness required to mask an implant
 - Discussions and simulations can help to decide
- Control Limits are a result of the process itself
 - Control limits are usually 3 sigma from the target
 - Ideally your control limits should be within your specification limits.

Future Needs

- Finish updating the remaining control charts
- Avoid using Step # in queries because adding or deleting steps from a process requires the queries to be updated.
 - Replace Step # with unique operation names
- Set specifications limits with more thought



Edit/Create Query

1. Decide what process steps to include in your query:
 1. Include all steps for all processes that use the same recipe
 2. PAD OXIDE EXAMPLE:

PROCESS	Step #	Recipe
SMFL-CMOS	4, 16	250
SUB-CMOS 150	4, 17	250
ADV-CMOS 150	4, 10, 39	250

2. Compare your needs to the current query:
 1. Make changes to the existing query if necessary
(See next slides for how to access the queries)



Accessing the Queries

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

5/24/06 MESA CUSTOMNU S90068
13:31:08 Operator's Custom Menu QPADEV000W RIT

Select one of the following.

1. Move-Out	(MOVE)
2. Move-In	(MVIN)
3. Place a Lot on Hold	(HOLD)
4. Lot Status of All Lots	(LSLGINQ)
5. What's Next for a Lot	(LFWGINQ)
6. Mask ID & Stepper Job Information	(VIEW)
7. Process Master Inquiry	(PCMSINQ)
8. Lot History/Move Summary	(LHSTINQ)
11. Query Processing Menu	(WRKQRY)
12. SIGNOFF	(SIGNOFF)

Choose '11' for Query Processing Menu

Selection or Command
==> 11

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Dataset F12=Cancel

Bottom

MA a 22/009

Connected to remote server/host: Host400 using port 23

Accessing the Queries

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Work with Queries

Type choices, press Enter.

Option 5 1=Create, 2=Change, 3=Copy, 4=Delete
5=Display, 6=Print definition
8=Run in batch, 9=Run
Query Name, F4 for list
Library Name, *LIBL, F4 for list

Press F4 for list of all Queries

F3=Exit F4=Prompt F5=Refresh F12=Cancel
(C) COPYRIGHT IBM CORP. 1988

MA a

08/026

Connected to remote server/host: Host400 using port 23

Accessing the Queries

```

Session A - [24 x 80]
File Edit Transfer Appearance Communication Assist Window Help
PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Work with Queries

Library . . . . . QGPL      Name, *LIBL, F4 for list
Subset . . . . .           Name, generic*
Position to . . . . .       Starting characters

Type options (and Query), press Enter.
 1=Create  2=Change  3=Copy  4=Delete  5=Display  6=Print
 8=Run in batch  9=Run

Opt  Query      Opt  Query      Opt  Query      Opt  Query
 5  SHRINI02     -   SPC_GATEOX  -   SPC_PADOX   -   SPCADV_LTO
 -   SJJ         -   SPC_KOOIOX -   SPC_POLY   -   SPCADV_NTD
 -   SKENNY01    -   SPC_LTO_OX -   SPC_POLYRS -   SPCADV_POX
 -   SKENNY02    -   SPC_LTOXOX -   SPC_PT_RHS -   SPCALNOXQA
 -   SMFL_POLYT  -   SPC_METAL  -   SPC_WELLOX -   SPC4SC_4CD
 -   SPC_ALN_OX  -   SPC_NITDE  -   SPC_WELLRS -   SPC6SC_CNT
 -   SPC_CMOSVT  -   SPC_NITRAT -   SPC_150GAT -   SPC6SC_FO
 -   SPC_COUNT   -   SPC_NMOSVT -   SPC_4UM_CD  -   SPC6SC_GOX
 -   SPC_FIELD0  -   SPC_NT_RHS -   SPCADV_GOX  -   SPC6SC_KOX
                                          More...

F3=Exit      F4=Prompt      F5=Refresh      F11=Display text
F12=Cancel   F19=Next group
  
```

Page Down through the list of queries until you reach queries starting with SPC:

SPC_ are used for unique SMFL- CMOS

SPC6SC_ are used for SUB-CMOS and all processes with identical operations

SPCADV_ are used for unique ADV-CMOS processes

Accessing the Queries

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Work with Queries

Library QGPL Name, *LIBL, F4 for list
Subset Name, generic*
Position to Starting characters

Type options (and Query), press Enter.
1=Create 2=Change 3=Copy 4=Delete 5=Display 6=Print
8=Run in batch 9=Run

Opt	Query	Opt	Query	Opt	Query	Opt	Query
5	SPC6SC_LTO	-	SPC6SC_WRS	-	VEGA01	-	ZENNER02
-	SPC6SC_MTL	-	SPC6SC_2CD	-	VEGA02	-	ZENNER03
-	SPC6SC_NI1	-	SPC6SC_350	-	VEGA03	-	
-	SPC6SC_NI2	-	SPC6SCPRS	-	WILLIS01	-	
-	SPC6SC_NRS	-	STATUS	-	WOODRUFF22	-	
-	SPC6SC_PAD	-	TEST01	-	YATSUDA01	-	
-	SPC6SC_PBL	-	TOKUNAGA01	-	YATSUDA02	-	
-	SPC6SC_PRS	-	TOKUNAGA02	-	YATSUDA03	-	
-	SPC6SC_WO	-	TOKUNAGA03	-	ZENNER01	-	

Bottom
F3=Exit F4=Prompt F5=Refresh F11=Display text
F12=Cancel F19=Next group

MA a /003

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Select the desired Query by typing 5 to Display or 2 to Change it.

Accessing the Queries

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Define the Query

Query : SPC6SC_PAD Option : DISPLAY
Library : QGPL CCSID : 65535

Type options, press Enter. Press F21 to select all.
1=Select

Opt Query Definition Option

- > Specify file selections
- > Define result fields
- > Select and sequence fields
- 1** > Select records
- > Select sort fields
- Select collating sequence
- > Specify report column formatting
- Select report summary functions
- Define report breaks
- > Select output type and output form
- Specify processing options

F3=Exit F5=Report F12=Cancel
F13=Layout F18=Files F21=Select all

MA a 13/004

Connected to remote server/host: Host400 using port 23

Type 1 to choose, "Select Records"

Accessing the Queries

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Select Records

Type comparisons, press Enter. Specify OR to start each new group.
Tests: EQ, NE, LE, GE, LT, GT, RANGE, LIST, LIKE, IS, ISNOT...

AND/OR	Field	Test	Value (Field, Number, Characters', or ...)
	MDLOT	LIKE	'F%'
AND	MDPRC	LIST	'SUB-CMOS' 'ADV-CMOS' 'SMFL-CMOS'
AND	MDMVTP	EQ	'1'
AND	UDN05	GT	200
AND	UDN05	LT	1000

More...

Field	Field	Field	Field
DATE	MDRSC	MDARCD	
MDLOT	MDTRCD	MDTRCN	
UDN05	MDTCMD	MDTRYR	
UDN02	MDCTRL	MDTRMO	
UDN03	MDTSEQ	MDTRDY	MDMFDY

More...

F3=Exit F5=Report F9=Insert F11=Display text
F12=Cancel F13=Layout F20=Reorganize F24=More keys

MA a 01/001

Connected to remote server/host: Host400 using port 23

Make sure these fields are looking up all desired steps for the process.

Running The Query

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Work with Queries

Library QGPL Name, *LIBL, F4 for list
Subset Name, generic*
Position to Starting characters

Type options (and Query), press Enter.
1=Create 2=Change 3=Copy 4=Delete 5=Display 6=Print
8=Run in batch 9=Run

Opt	Query	Opt	Query	Opt	Query	Opt	Query
5	SPC6SC_LTD	-	SPC6SC_WRS	-	VEGA01	-	ZENNER02
-	SPC6SC_MTL	-	SPC6SC_2CD	-	VEGA02	-	ZENNER03
-	SPC6SC_NI1	-	SPC6SC_350	-	VEGA03		
-	SPC6SC_NI2	-	SPC6SCPRS	-	WILLIS01		
-	SPC6SC_NPS	-	STATUS	-	WOO		
-	SPC6SC_PAD	-	TEST01	-	YAT		
-	SPC6SC_PDL	-	TOKUNAGA01	-	YAT		
-	SPC6SC_PRS	-	TOKUNAGA02	-	YAT		
-	SPC6SC_WD	-	TOKUNAGA03	-	ZEN		

F3=Exit F4=Prompt F5=Refresh
F12=Cancel F19=Next group

MA a 11/003

Connected to remote server/host: Host400 using port 23

Finding The Query Save Location

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Define the Query

Query : SPC6SC_PAD Option : DISPLAY
Library : QGPL CCSID : 65535

Type options, press Enter. Press F21 to select all.
1=Select

Opt Query Definition Option
- > Specify file selections
- > Define result fields
- > Select and sequence fields
- > Select records
- > Select sort fields
- Select collating sequence
- > Specify report column formatting
- Select report summary functions
- Define report breaks
1 > **Select output type and output form**
- Specify processing options

F3=Exit F5=Report F12=Cancel
F13=Layout F18=Files F21=Select all

MA a

19/004

Connected to remote server/host: Host400 using port 23

From the "Define the Query" menu, choose "Select output type and output form"

Finding The Query Save Location

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Select Output Type and Output Form

Type choices, press Enter.

Output type 3 1=Display
2=Printer
3=Database file

Form of output 1 1=Detail
2=Summary only

Line wrapping N Y=Yes, N=No
Wrapping width Blank Blank, 1-378
Record on one page N Y=Yes, N=No

Press 'Enter' to move to next page

F3=Exit F5=Report F10=Process/previous
F12=Cancel F13=Layout F18=Files

MA a 01/001

Connected to remote server/host: Host400 using port 23

Finding The Query Save Location

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Define Database File Output

Type choices, press Enter.
(The printed definition shows the output file record layout.)

These two fields must be in the HED file

File	<u>SC6PAD</u>	Name, F4 for list
Library	<u>QGPL</u>	Name, F4 for list
Member	<u>*FILE</u>	Name, *FIRST, *FILE, F4 for list
Data in file	<u>2</u>	1=New file, 2=Replace file 3=New member, 4=Replace member 5=Add to member
For a new file:		
Authority	<u>*LIBCRTAUT</u>	*LIBCRTAUT, authorization list name, *CHANGE, *ALL, *EXCLUDE, *USE
Text	<u>Pad Oxide Thickness</u>	
Print definition . . .	<u>N</u>	Y=Yes, N=No

F3=Exit F4=Prompt F5=Report F10=Process/previous
F12=Cancel F13=Layout F18=Files

MA a 01/001

Connected to remote server/host: Host400 using port 23



References in .HED File

The screenshot shows a Windows Explorer window titled 'J:\QA'. The address bar shows 'Qa'. The window contains a table of files and folders. The file 'Gate_ox.hed' is circled in red. A pink callout box points to it with the text 'Example of .HED file in the J Drive'.

Name	Size	Type	Modified	Attributes
Advcmos		File Folder	4/21/06 4:30 PM	
Scmos150		File Folder	5/22/06 1:38 PM	
smfICMOS		File Folder	12/14/05 11:33 AM	
Al_Thick.DAT	1KB	Text Document	12/14/05 11:32 AM	A
Al_Thick.HED	1KB	HED File	12/14/05 11:32 AM	A
Al_thick.pps	57KB	Microsoft PowerPoi...	12/14/05 11:32 AM	A
Al_Thick.RUN	1KB	Qarfi Document	12/14/05 11:32 AM	A
Align_ox.pps	52KB	Microsoft PowerPoi...	12/14/05 11:32 AM	A
Align_ox.run	1KB	Qarfi Document	12/14/05 11:32 AM	A
Alignox.dat	1KB	Text Document	12/14/05 11:32 AM	A
Alignox.hed	1KB	HED File	12/14/05 11:32 AM	A
Cmos_vt.dat	1KB	Text Document	12/14/05 11:32 AM	A
Cmos_vt.hed	1KB	HED File	12/14/05 11:32 AM	A
Cmos_vt.pps	53KB	Microsoft PowerPoi...	12/14/05 11:32 AM	A
Cmos_vt.run	1KB	Qarfi Document	12/14/05 11:32 AM	A
Field_ox.dat	1KB	Text Document	4/21/06 11:18 AM	A
Field_ox.hed	1KB	HED File	12/14/05 11:32 AM	A
Field_ox.pps	53KB	Mic		
Field_ox.run	1KB	Qar		
Gate_ox.dat	1KB	Text Document	4/21/06 1:43 PM	A
Gate_ox.hed	1KB	HED File	4/21/06 1:43 PM	A
Gate_ox.pps	53KB	Microsoft PowerPoi...	12/14/05 11:32 AM	A
Gate_ox.run	1KB	Qarfi Document	4/21/06 1:48 PM	A
KOOI_Ox.dat	1KB	Text Document	12/14/05 11:32 AM	A
KOOI_Ox.HED	1KB	HED File	12/14/05 11:32 AM	A

77 object(s) 1.27MB

References in .HED File

```
Pad.HED - Notepad
File Edit Search Help
<QUALITY ANALYST HEADER FILE v4.1>
<VARS/NMETA/FILEHEAD/MAXHEAD>, 6 , 6 , 1 , 335
Pad thickness
"DATE","I","[DATE]",",",","
"MDLOT","A","[MDLOT]",",",","
"THICKNES","I","Pad Oxide Thickness, Recipe 250, 0X05",",",","
"SOAK_TIM","I","Soak time",",",","
"SOAK_TEM","I","Soak temp",",",","
"MDRSC","A","Furnace ID",",",","
<FILE WIDE PARAMETERS>
2 DATE          MDLOT          SOAK_TIM          SOAK_TEM
7 1
8 MESA Files
9 [DATE],[MDLOT] [UDN05],[UDN02],[UDN03],[MDRSC]
10 QGPL.SC6PAD
13 0000
0 THICKNES
5 500
11 600
12 400
95 -3
287 0
0 DATE
95 -3
```

This must match the 'Save Location' of the desired Query

References in .HED File

```
Pad.HED - Notepad
File Edit Search Help
<QUALITY ANALYST HEADER FILE v4.1>
<VARS/NMETA/FILEHEAD/MAXHEAD>, 6 , 6 , 1 , 335
Pad thickness
"DATE","I","[DATE]","",""
"MDLOT","A","[MDLOT]","",""
"THICKNES","I","Pad Oxide Thickness, Recipe 250, 0X05","",""
"SOAK_TIM","I","Soak time","",""
"SOAK_TEM","I","Soak temp","",""
"MDRSC","A","Furnace ID","",""
<FILE WIDE PARAMETERS>
2 DATE          MDLOT          SOAK_TIM          SOAK_TEM
7 1
8 MESA Files
9 [DATE],[MDLOT],[UDN05],[UDN02],[UDN03],[MDRSC]
10 QGPL.SC6PAD
13 ODBC
0 THICKNES
5 500
11 600
12 400
95 -3
287 0
0 DATE
95 -3
```

These numbers set the target, USL, and LSL respectively.



Run File

Pad.run - Notepad

File Edit Search Help

```
TITLE SPC CHART FOR Pad Oxide Thickness  
CONNECT J:\QA\SCMOS150\PAD.DAT  
IR J:\QA\SCMOS150\PAD.DAT THICKNES I N G ONE.PLT $TITLE="Pad Oxide Thickness Tracking Chart"  
PCAP J:\QA\SCMOS150\PAD.DAT THICKNES G TWO.PLT $TITLE="Pad Oxide Process Capabilities"  
CHART GROUP 2U ONE.PLT TWO.PLT
```

Make sure the RUN file is looking in the right folder for the DAT file.



Power Point Show

Microsoft PowerPoint - [Pad]

File Edit View Insert Format Tools Slide Show Window Help

Common Task
New Slide...
Slide Layout...
Apply Design...

Pad Oxide SPC Charts

EXIT

Edit Hyperlink

Link to file or URL:
Pad.run

Path: Pad.run

Named location in file (optional):

Use relative path for hyperlink

Remove Link OK Cancel

Alignment Oxide Thickness Tracking Chart
Alignment Oxide Thickness (A)

Thickness

Click to see new chart

DATE	LOT_NUM	ct	uct	ct	uct
1001127	F000125	5458.5	6000.53	590130	F900125
1002207	F000207			981004	F900129
				991208	F901207

USL: 5250 LSL: 4750 Target: 5000

More Questions? Click Me

Start J:\QA\SCMOS150 Microsoft PowerPoint ... 2:01 PM

MESA Document

Session A - [24 x 80]



File Edit Transfer Appearance Communication Assist Window Help



5/24/06
13:38:06

MESA
Main Menu

R.I.T u-E S90000
QPADEV000W RIT

Select one of the following.

- | | |
|---------------------------------|------------|
| 1. WIP tracking menu | (WIPSMNU) |
| 2. Files/tables menu | (FTBLMNU) |
| 3. Quality data collection menu | (QDCLMNU) |
| 4. Planning/scheduling menu | (PSCHMNU) |
| 9. Resource management menu | (RESCMNU) |
| 10. Material control menu | (MCTLMNU) |
| 11. Quality analysis menu | (QUALMNU) |
| 12. Cost accounting menu | (COSTMNU) |
| 18. System functions menu | (SYFNMNU) |
| 19. Custom menu | (CUSTOMNU) |
| 20. Query processing menu | (WRKQRY) |
| 90. Signoff | (SIGNOFF) |
| 91. Transaction Menu 1 | (TRN1MNU) |

Selection or Command

=> 2

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Dataset F12=Cancel

**From the Main Menu choose option '2',
"Files/tables menu"**

Bottom

MA a

22/008

MESA Document

Session A - [24 x 80]



File Edit Transfer Appearance Communication Assjst Window Help



5/24/06
13:38:32

MESA
Files/Tables Menu

FTBLMNU S90002
QPADEV000W RIT

Select one of the following.

- | | |
|------------------------------------|-----------|
| 1. Files/tables maintenance menu | (FMNTMNU) |
| 2. Files/tables inquiry menu | (FINQMNU) |
| 3. Files/tables listing menu | (FRPTMNU) |
| 4. Bill of material menu | (BMTLMNU) |
| 5. Resource master menu | (RSMSMNU) |
| 6. File maintenance status menu | (FFRZMNU) |
| 7. Signoff routing processing menu | (SOMSMNU) |
| 8. Mask set menu | (MASKMNU) |

**From the Files/Tables Menu choose option '1',
"Files/tables maintenance menu"**

Bottom

Selection or command

==> 1

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Dataset F12=Cancel

MA a

22/008

MESA Document

Session A - [24 x 80]



File Edit Transfer Appearance Communication Assjst Window Help



5/24/06
14:38:44

MESA
Master Files/Table Maintenance

FMNTMNU S90021
QPADEV000W RIT

Select one of the following.

- | | |
|--|-----------|
| 1. Product master maintenance | (PDMSMNT) |
| 2. Operation master maintenance | (OPMSMNT) |
| 3. Process master maintenance | (PCMSMNT) |
| 4. Work center master maintenance | (WCMSMNT) |
| 5. Table definition master maintenance | (TDEFMNT) |
| 6. Table data master maintenance | (TDATMNT) |
| 7. Specification ID master maintenance | (SFMSMNT) |
| 9. WIP message master maintenance | (WMSGMNT) |
| 10. Instruction group master maintenance | (IGMSMNT) |
| 11. Override spec ID master maintenance | (OSMSMNT) |
| 12. Process override master maintenance | (POMSMNT) |
| 13. Document master maintenance | (DMMSMNT) |
| 14. Product group master maintenance | (PDGPMNT) |
| 15. Note master maint | |

Selection or command
==> 13

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Dataset F12=Cancel

**From Master Files/Table Maintenance choose option '13',
"Document master maintenance"**

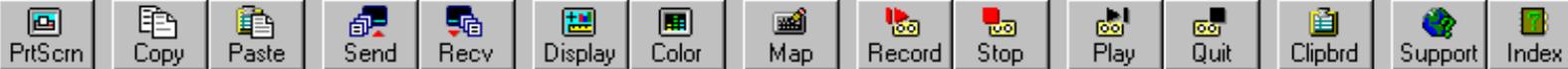
MA a

22/009

MESA Document

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help



5/24/06
13:43:28

MESA
Document Master Maintenance

DMMSMNT S08701
QPADEV000W RIT

Type information. Then Enter, or use Roll keys to page.

Action 2 1=Create, 2=Change, 4=Delete
Document ID _____
Revision _____

Press F4 for list of all Documents

F3=Exit F4=Prompt F5=Refresh F12=Cancel

MESA Document

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

5/24/06 13:43:01 MESA Document ID Selection DMMSEL1 S68701 QPADEV000W RIT

Type information. Then Enter.
1=Select 5=Display detail

Select:
Description . . . _____
Creator _____
Access code . . . _____
Position to _____

Document ID/rev

Opt	Document ID	Rev	Description	Creator	Status
—	SPC6SCNITRIDE		Nitride thickness (step5)	CC	Active
—	SPC6SCNITRIDE2		Nitride thickness(step18)	CC	Active
—	SPC6SCNTRH03		n sheet resistance	CC	Active
5	SPC6SCPAD		Pad thickness	ENGINEER	Active
—	SPC6SCPOLYSI		PolySilicon thickness	CC	Active
—	SPC6SCPOLYSIRES		PolySi resistance	CC	Active
—	SPC6SCPTCL		Particle Count	CC	Active
—	SPC6SCPTRH03		P+ sheet resistance	CC	Active

More...

F3=Exit F4=Prompt F5=Refresh F12=Cancel

MA a 17/003

Connected to remote server/host Host400 using port 23

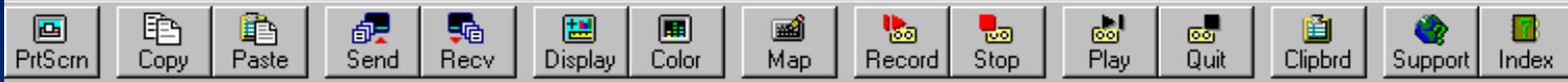
Scroll through the documents to find the desired SPC document...most start with SPC6SC

MESA Document

Session A - [24 x 80]



File Edit Transfer Appearance Communication Assist Window Help



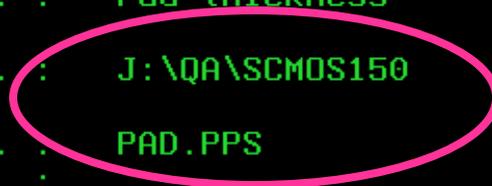
5/24/06
13:42:18

MESA
Document Master Inquiry

DMMSINQ S38701
QPADEV000W RIT

Type information. Then Enter, or use Roll keys to page.

Document ID SPC6SCPAD
Revision _____
Description Pad thickness
Folder J:\QA\SCMOS150
Document name PAD.PPS
Help label
Access code POWERPNT
Status Active
Creator ENGINEER



The 'Folder' and the 'Document Name' should be correct

F3=Exit F4=Prompt F5=Refresh F10=View 2 F12=Cancel
F11=Signoff routing F14=View document

MA a

06/029

Connected to remote server/host Host400 using port 23



Instruction Sets

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

5/24/06 14:38:44 MESA Master Files/Table Maintenance FMNTMNU S90021 QPADEV000W RIT

Select one of the following.

1. Product master maintenance	(PDMSMNT)
2. Operation master maintenance	(OPMSMNT)
3. Process master maintenance	(PCMSMNT)
4. Work center master maintenance	(WCMSMNT)
5. Table definition master maintenance	(TDEFMNT)
6. Table data master maintenance	(TDATMNT)
7. Specification ID master maintenance	(SFMSMNT)
9. WIP message master maintenance	(WMSGMNT)
10. Instruction group master maintenance	(IGMSMNT)
11. Override spec ID master maintenance	(OSMSMNT)
12. Process override master maintenance	(POMSMNT)
13. Document master maintenance	(DMMSMNT)
14. Product group master maintenance	(PDGPMNT)
15. Note master maintenance	(NOTMSMNT)

Selection or command ==> 10

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Dataset F12=Cancel

MA a 22/009

Connected to remote server/host Host400 using port 23

From Master Files/Table Maintenance choose option '10', "Instruction Group master maintenance"

Instruction Sets

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assjst Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

5/24/06 13:50:45 MESA INSTSEL S66801
Instruction Group Selection QPADEV000W RIT

Type information. Then Enter.
Search on:
Plant : RIT
Description : _____
Creator : _____
Position to : _____ Instruction group

1=Select 5=Display detail

Opt	Instruction Group	Rev	Description	Creator
_	ADV-CMOS-OX01-DENSIF	150	ADV-CMOS TEOS Densification	MVA6237
_	ADV-CMOS-OX05-PAD	150	ADV-CMOS OX05 GROW PAD OXIDE	FULLER
<u>5</u>	ADV-CMOS-OX05-PAD2	150	ADV-CMOS OX05 GROW PAD OXIDE	FULLER
_	ADV-CMOS-OX05-REOX	150	ADV-CMOS OX05 GROW PAD OXIDE	FULLER
_	ADV-CMOS-OX05-STI	150	ADV-CMOS OX05 GROW PAD OXIDE	FULLER
_	ADV-CMOS-OX06-DRIVE	150	ADV-CMOS OX06 DRY OXIDE DRIVE	FULLER
_	ADV-CMOS-OX06-GATE	150	ADV-CMOS GATE OXIDE GROWTH	FULLER
_	ADV-CMOS-OX07-ANNEAL	150	ADV-CMOS-OX07-ANNEAL	LFFEEE
_	ADV-CMOS-OX08-ANNEAL	150	ADV-CMOS TEOS Densification	DJH2265
_	ADV-CMOS-PH03-CC	150	ADV-CMOS PH03 PHOTOLITH (CC)	LFFEEE

More . . .

F3=Exit F5=Refresh F6=Create F12=Cancel

Scroll through the instruction groups to find the desired group

Instruction Sets

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

PrtScr Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

5/24/06
13:51:26

MESA
Instruction Group Inquiry

IGMSINQ S36801
QPADEV000W RIT

Type information. Then Enter.
1=Display document, 5=Display detail

Press '5' to display the document information associated with the SPC chart instruction

Plant : RIT
Instruction group . . : ADV-CMOS-OX05-PAD2 ADV-CMOS OX05 GROW PAD OXIDE
Revision : 150

- | Opt | Subgroup | Text |
|-----|----------|---|
| - | | 1.0 Include D1-D3 |
| - | | 2.0 Use resource FURNACE04 BRUCE TUBE 04 (see padox01.pps) |
| - | | 3.0 Xox desired = 500A |
| 5 | | 4.0*See SPC chart for operation (see* PAD.PPS)-execute |
| - | | 5.0 XRF warm up recipe 888, check gas supply |
| - | | 6.0 When furnace stabilizes at 800 C abort 888 |
| - | | 7.0 XRF 500A dry O2 recipe 250, load wafers, press start
P/P 800C, RU 20min, soak ~54 min dry O2 1000C, RD 40min |
| - | | 8.0 When wafers complete abort 250 and XRF idle recipe 999 |
| - | | 9.0 Record soak temp and soak time |

More...

F3=Exit F4=Prompt F5=Refresh F10=View 2 F12=Cancel

Instruction Sets

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assgist Window Help

PrtScrn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

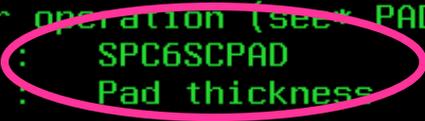
5/24/06
13:51:51

MESA
Instruction Group Inquiry

IGMSINQ S36803
QPADEV000W RIT

Press Enter to continue.

```
Plant . . . . . : RIT
Instruction group/Rev : ADV-CMOS-OX05-PAD2 150
Sequence number . . . : 4.00
Sub-group number . . . :
Line type . . . . . : Executable
Text:
  4.0*See SPC chart for operation (see* PAD.PPS)-execute
Document ID/rev . . . : SPC6SCPAD
Description . . . . . : Pad thickness
Auto recipe file . . . :
Action . . . . . : No action
Parameter group/Rev :
Command . . . . . :
User program . . . . . :
```



The document listed here should be the desired MESA Document.

F3=Exit F15=Display document F12=Cancel

