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Artwork drawn as viewed from Touch Side

Edges of cover glass to be polished
with no sharp corners

All dimensions are in millimeters.
If In Doubt Please Ask.

Crossover Detail

insulator thickness = 1.25um
under track width = 70um
ITO resistance = 55±10 Ohm/sq
crossover track width = 12um
crossover metal track resistance = 0.4 Ohm/sq
crossover track resistive length = 200um

Layers (top to bottom)

Cover glass
ITO 55 ohm/sq
Insulator
Metal crossovers 0.4 ohm/sq
Metal tracks 0.4 ohm/sq
Protection layer
Anti-splinter film

Microchip Logo to be
solid white

Resistance bar

FPC 80575 shown
for reference only

Adhesive required
on rear side of cover glass
for FPC retention

Laminate AS film over bond area
to reinforce bonds.

Microchip Part Number

(163.00) Cover Glass

(127.08) Sensor Active Area

(126.08) Decoration Opening

(17.65)

(18.65)

(8.28)

(7.78)

x3 Key graphics
solid white

(78.43) Decoration Opening

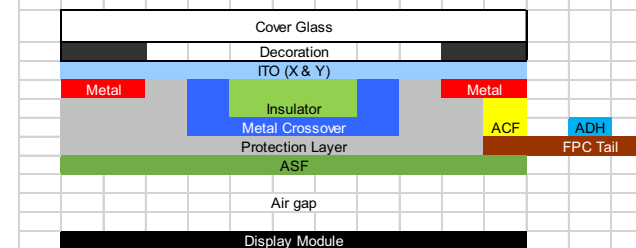
(79.43) Sensor Active Area

(95.00) Cover Glass

Y19
Y18
Y17
Y16
Y15
Y14
Y13
Y12
Y11
Y10
Y9
Y8
Y7
Y6
Y5
Y4
Y3
Y2
Y1
Y0

X0
X1
X2
X3
X4
X5
X6
X7
X8
X9
X10
X11
X12
X13
X14
X15
X16
X17
X18
X19
X20
X21
X22
X23
X24
X25
X26
X27
X28
X29
X30
X31

Touchscreen Build Stack



Material	Thickness (mm)
Dragontrail glass	0.55
Decoration print	0.02
ITO 55±10 Ohm/sq	-
Metal tracking 0.4 Ohm/sq	-
Insulator	-
Metal Crossover 0.4 Ohm/sq	-
Insulator	0.003
Anti-splinter film	0.079
Touchscreen Thickness	0.652
Air	0.3
Display module	-
Hot Bar Bond Heatseal / ACF	0.005
FPC Tail	0.09

Material Specifications

	Material	Thickness	Specification	design rules
Main ITO	ITO	-	55 Ohms/sq ± 10 Ohms	Minimum track / gap = 30um ± 10%
Insulator	Insulator	1.25um ± 0.25um	Er = 3.60	
Metal crossovers	Metal	-	0.4 Ohms/sq ± 10%	Minimum track width 12um
Metal tracks	Metal	-	0.4 Ohms/sq ± 10%	Minimum track / gap = 30um ± 10%
Protection Layer	Insulator	3um ± 0.25um	Er = 3.60	
Anti-splinter film	PET/OCA	0.079mm ± 10%	Er = 3.00	
FPC interconnect	ACF / ACP / ACA	<20um	Pad contact resistance <1 Ohm, Peel strength >5N/cm	Pads 0.20 x 1.8mm on 0.4mm pitch
Alignment Tolerances				
	Layer to Layer Alignment	± 15um		
	Print to Edge of Glass	± 400um		
	Metal to ITO	± 15um		
Assumptions				
Cover Glass	Dragontrail Glass or similar	0.55mm ± 10%	Er = 7.37	
Decoration	Black Pantone EC non-conductive ink Atmel logo white non-conductive ink	20um ± 5um	Er = 3	
Airgap to display	Air	0.30mm ± 10%	Er = 1.01	
Performance Calculations				
	Charge Time	0.66		
	Worst case touch separation in X	8.34		
	Worst case touch separation in Y	8.34		
	Touch separation difference	0.00		

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All components and materials used must be RoHS compliant as described in European Parliament Directive 2002/95/EC

Title: 5.9" ITO on Glass TS Single Diamond G2 32X 20Y		Project: 640U	
Number: 75533	CAD Check:	Engr Check:	
Filename: 75533.cdr		Approved:	
Sheet 1 of 1	Drawn:		

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A1	Updated to MCHP branding	N/A	PFC	8 Dec 2017
A0	First Issue	N/A	PFC	14 April 2015
Iss	Notes	ECN	Drn	Date

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