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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

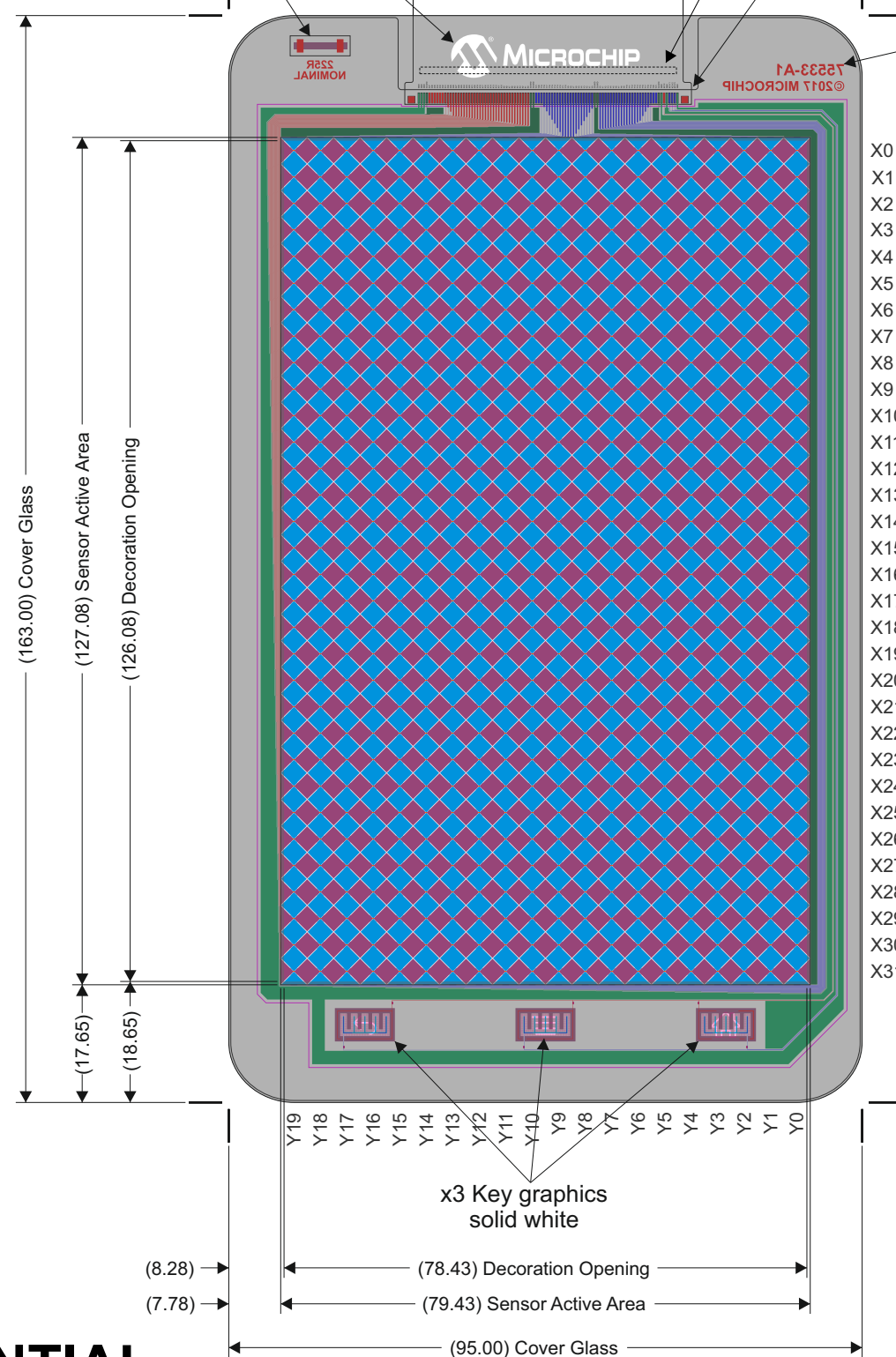
Resistance bar

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



x3 Key graphics  
solid white

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SUBJECT TO NON-DISCLOSURE AGREEMENT

THIS DRAWING IS FOR SAMPLES & PROTOTYPES ONLY  
TO BE ISSUED TO MICROCHIP APPROVED MANUFACTURERS ONLY

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

#### 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
<b>Alignment Tolerances</b>				
	Layer to Layer Alignment	± 15um		
	Print to Edge of Glass	± 400um		
	Metal to ITO	± 15um		
<b>Assumptions</b>				
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	
<b>Performance Calculations</b>				
	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		

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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