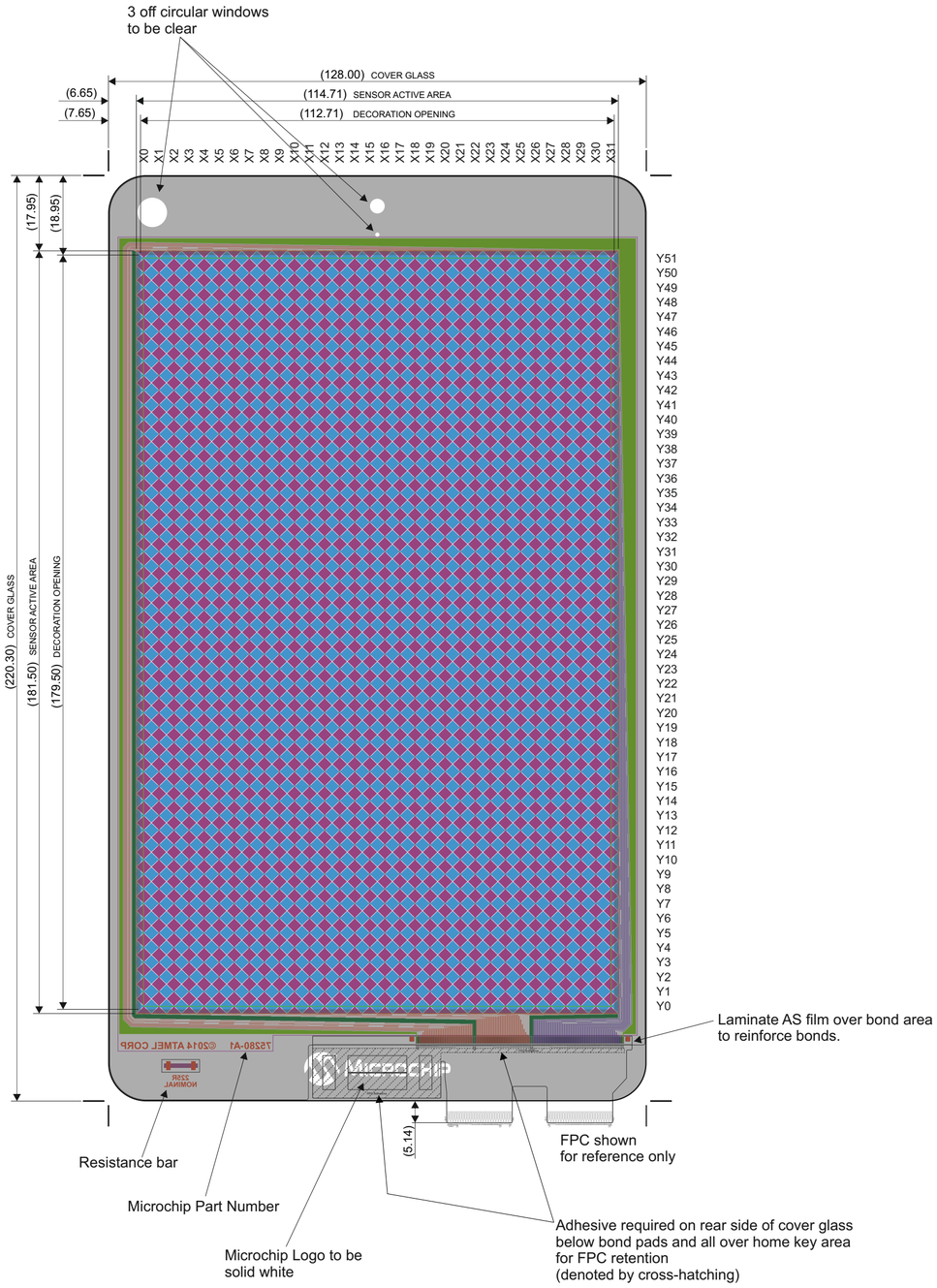
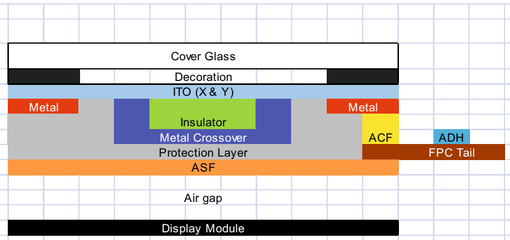


Touchscreen Build Stack



	Material	Thickness (mm)
	Gorilla glass	0.55
	Decoration print	0.02
	ITO 45±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

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.

Material Specifications

	Material	Thickness	Specification	design rules
Main ITO	ITO	-	45 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	Gorilla Glass or similar	0.55mm ± 10%	Er = 7.37
Decoration	Black Pantone EC non-conductive ink Microchip logo white non-conductive ink	20um ± 5um	Er = 3
Airgap to display	Air	0.30mm ± 10%	Er = 1.01

Performance Calculations	
Charge Time	1.59us
Worst case touch separation in X	7.53mm
Worst case touch separation in Y	7.33mm
Touch separation difference	0.20mm

Layers (top to bottom)

Cover glass
ITO 45 ohm/sq
Insulator
Metal crossovers 0.4 ohm/sq
Metal tracks 0.4 ohm/sq
Protection layer
Anti-splinter film

Crossover Detail
insulator thickness = 1.25um
under track width = 70um
ITO resistance = 45±10 Ohm/sq
crossover track width = 12um
crossover metal track resistance = 0.4 Ohm/sq
crossover track resistive length = 200 um

STRICTLY CONFIDENTIAL

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

Iss	Notes	ECN	Drn	Date
A2	Updated to MCHP branding	N/A	PFC	27th Mar 2019
A1	Fixed Y16 - Y17 track short	N/A	PFC	18th Sep 2014
A0	First Issue	N/A	PFC	31st July 2014

Title: 8.3" ITO on Glass TS Single Diamond G2 32X 52Y			Project: mXT1664T3
Number: 75280		CAD Check:	Engr Check:
Filename: 75280.cdr		Approved:	
Sheet 1 of 1	Drawn: P Cassidy		

MICROCHIP