Capacitive Sense for Switch

Burst Drive Lines

To Capacitive Switch Matix
X[0..15]

X0 X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11 X12 X13 X14 X15

R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16

Xdrv0 Xdrv1 Xdrv2 Xdrv3 Xdrv4 Xdrv5 Xdrv6 Xdrv7 Xdrv8 Xdrv9 Xdrv10 Xdrv11 Xdrv12 Xdrv13 Xdrv14 Xdrv15

Xdrv[0..15]

Drive resistor: 1K–10KOhm

Sense Lines

To Capacitive Switch Matix
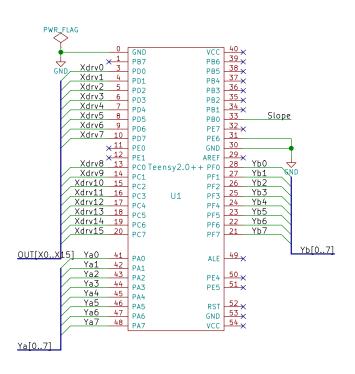Y[0..7]

Y0 Y1 Y2 Y3 Y4 Y5 Y6 Y7

R17 R19 R21 R23 R25 R27 R29 R31

Ya0 Ya1 Ya2 Ya3 Ya4 Ya5 Ya6 Ya7

To Digital I/O Pins
Ya[0..7]

C1 C2 C3 C4 C5 C6 C7 C8

Yb0 Yb1 Yb2 Yb3 Yb4 Yb5 Yb6 Yb7

To Analog Input
with Digital I/O pins
Yb[0..7]

R18 R20 R22 R24 R26 R28 R30 R32

To I/O Pin
Slope

Sense resistor: 1K–10KOhm
Sampling capacitor: 4.7nF–10nF
Sampling resistor: 220K–1MOhm

PWR_FLAG

GND

0	GND	VCC	40	
1	PB7	PB6	39	
Xdrv0 3	PD0	PB5	38	
Xdrv1 4	PD1	PB4	37	
Xdrv2 5	PD2	PB3	36	
Xdrv3 6	PD3	PB2	35	
Xdrv4 7	PD4	PB1	34	
Xdrv5 8	PD5	PB0	33	Slope
Xdrv6 9	PD6	PE7	32	
Xdrv7 10	PD7	PE6	31	
11	PE0	GND	30	
12	PE1	AREF	29	
Xdrv8 13	PC0	PF0	28	Yb0
Xdrv9 14	PC1	PF1	27	Yb1
Xdrv10 15	PC2	PF2	26	Yb2
Xdrv11 16	PC3	PF3	25	Yb3
Xdrv12 17	PC4	PF4	24	Yb4
Xdrv13 18	PC5	PF5	23	Yb5
Xdrv14 19	PC6	PF6	22	Yb6
Xdrv15 20	PC7	PF7	21	Yb7

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OUT[X0..X15]

Ya0 41	PA0	ALE	49	
Ya1 42	PA1			
Ya2 43	PA2	PE4	50	
Ya3 44	PA3	PE5	51	
Ya4 45	PA4			
Ya5 46	PA5	RST	52	
Ya6 47	PA6	GND	53	
Ya7 48	PA7	VCC	54	

GND

Yb[0..7]

Ya[0..7]

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