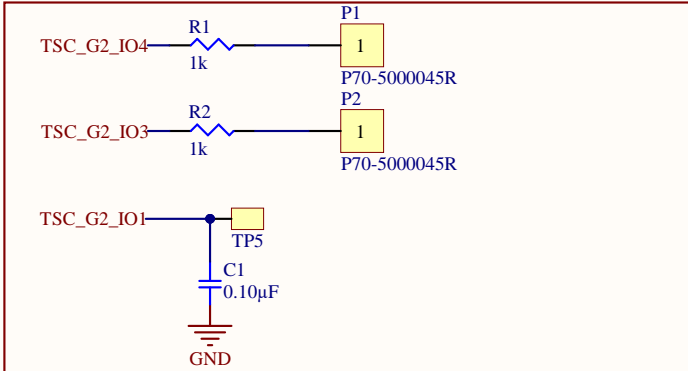
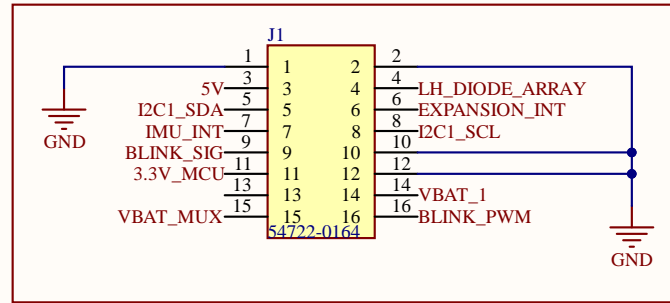


TOUCH SENSING HEADERS

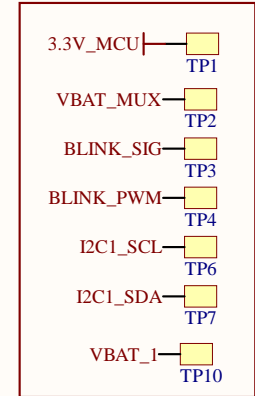


Note: reduce sampling capacitor if less sensitivity and fast acquisition time is needed  
 Note: do not use tantalum capacitors (per ST)  
 Note: reduce the capacitor on TSC\_G2\_IO1 to increase sensitivity

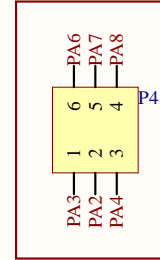
FLEX CONNECTOR



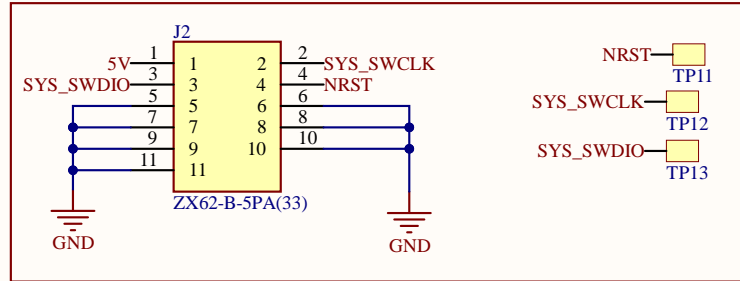
TEST POINTS



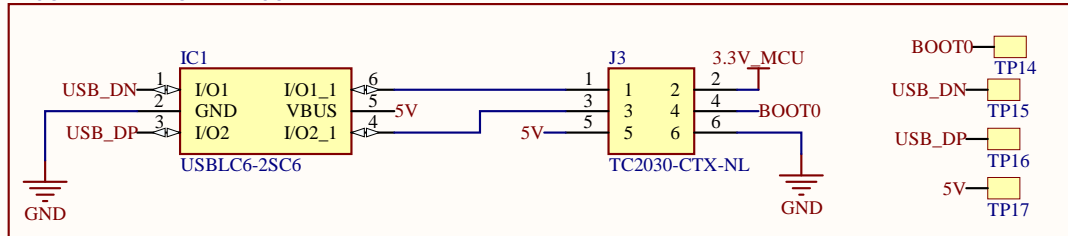
BREAKOUT PADS



PROGRAMMER USB BREAKOUT

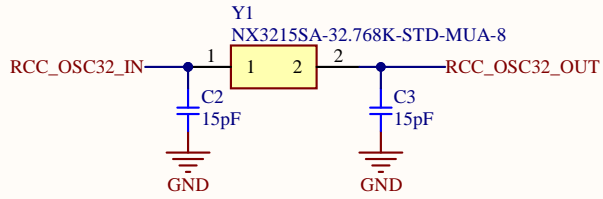


PROGRAMMER TAG BREAKOUT



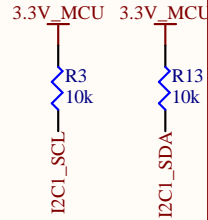
Title		
EXTERNAL CONNECTORS		
Size	Number	Revision
A		
Date:	3/26/2020	Sheet of
File:	D:\OneDrive - Massachusetts Institute of Technology\Scholarship\External Connectors	1

1 LOW SPEED CLOCK (LFE) OSCILLATOR

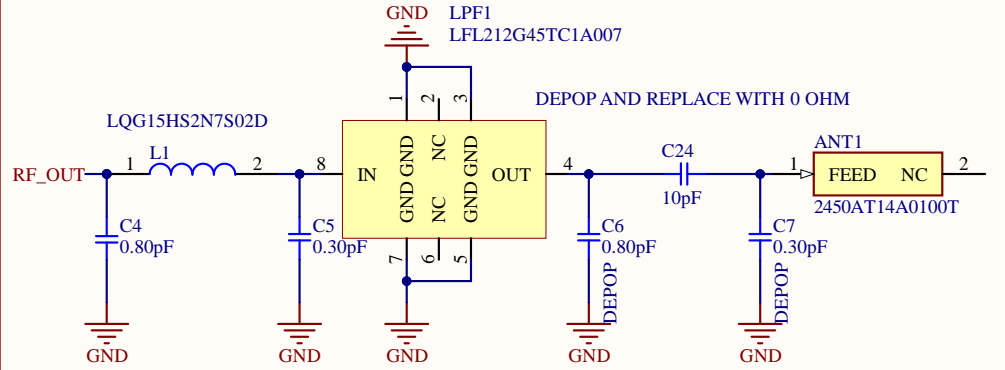


Note: oscillator may not be necessary for this design

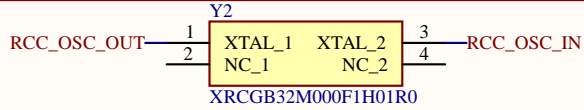
2 I2C PULLUP



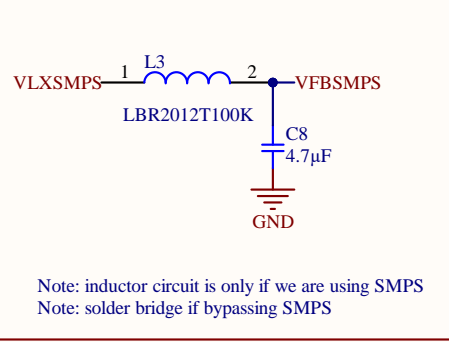
3 RF FRONT END



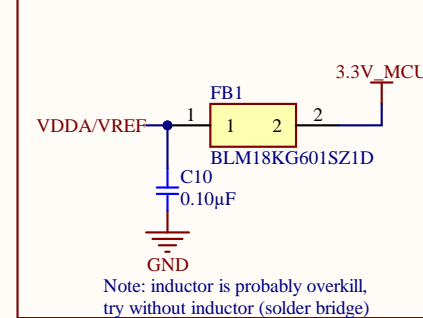
RF 32MHz CRYSTAL



SMPS CIRCUITRY



VOLTAGE REFERENCE FOR ADC



A

A

B

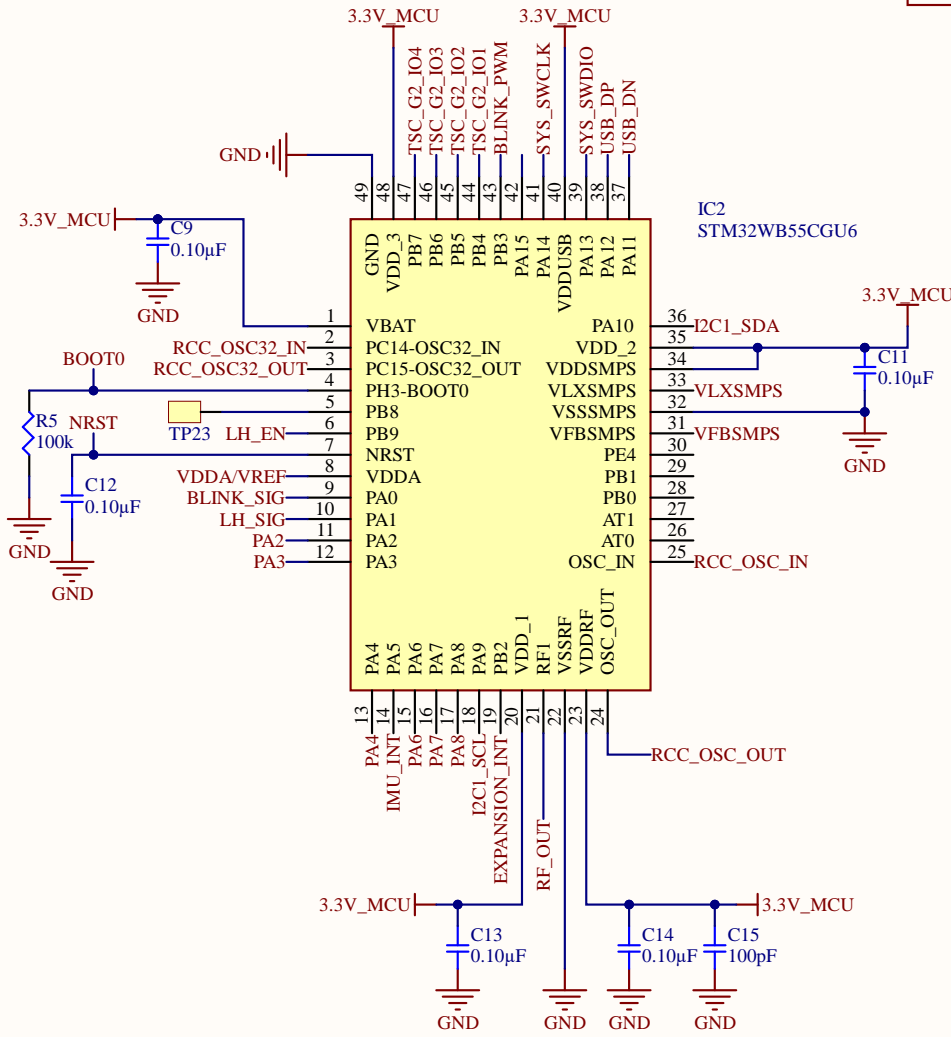
B

C

C

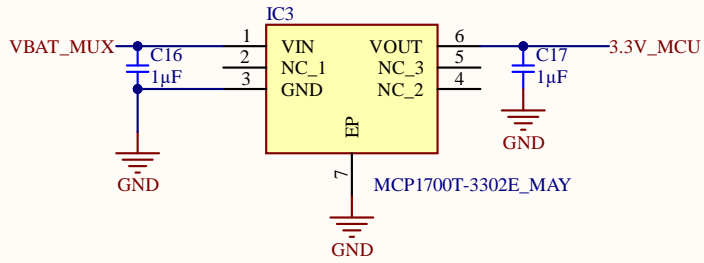
D

D

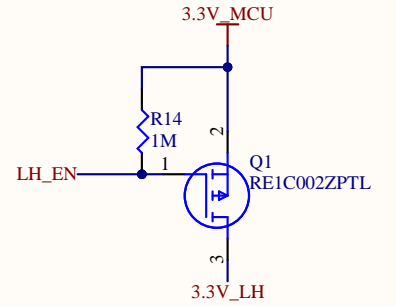


Title		
MICROCONTROLLER		
Size	Number	Revision
A		
Date:	3/26/2020	Sheet of
File:	D:\OneDrive - Massachusetts Institute of Technology\Scholar\Patrick D WALEK	

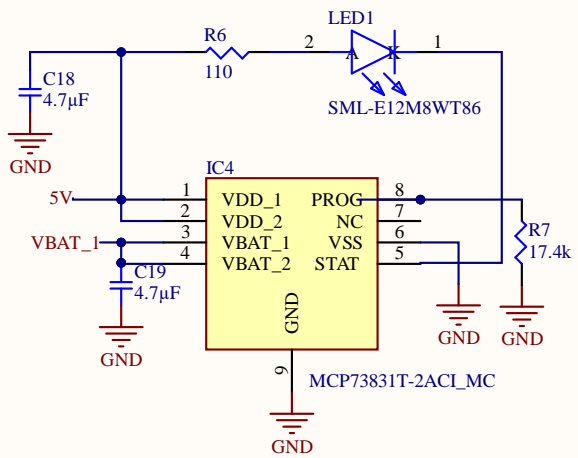
POWER REGULATION



VIVE LIGHTHOUSE POWER

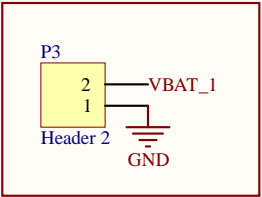


CHARGING CIRCUIT



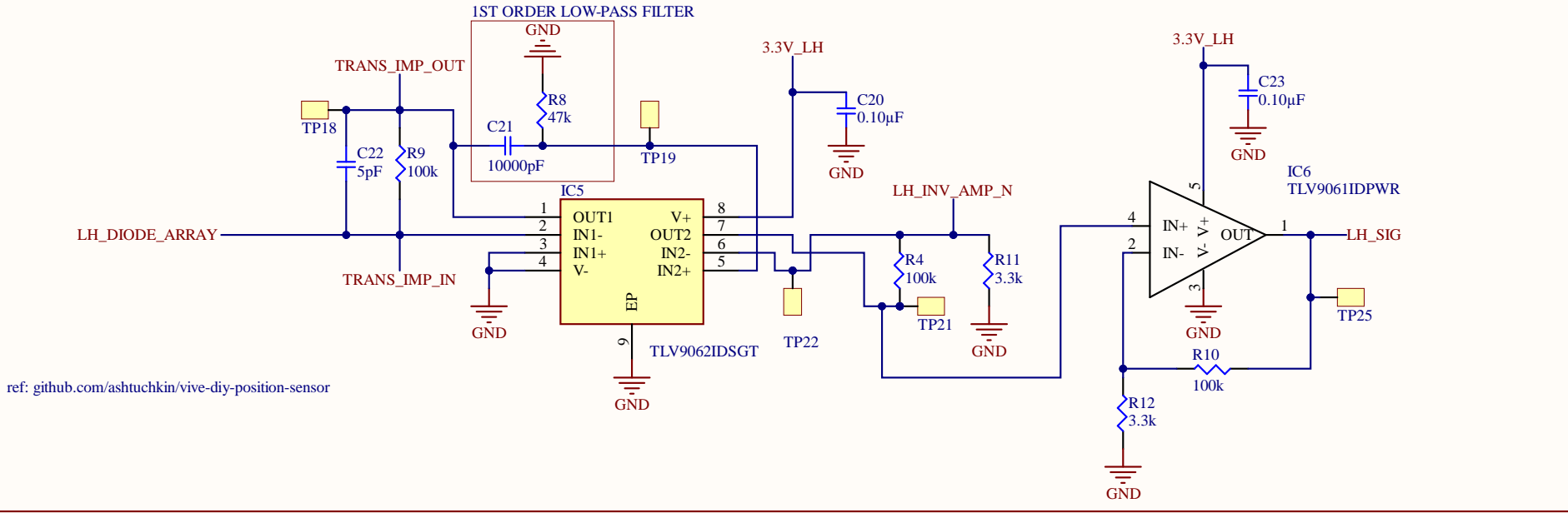
Charge Current :  $1000V / 17.4k = 57.47mA$

BATTERY INPUT



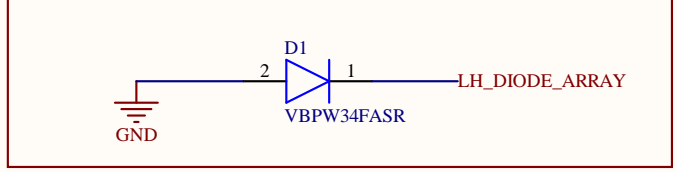
Title <b>POWER</b>		
Size A	Number	Revision
Date: 3/26/2020	Sheet of	
File: D:\OneDrive - Massachusetts Institute of Technology\Scholar\PAVRICK DEWALEK	PAVRICK DEWALEK	

LIGHTHOUSE DETECTOR



ref: [github.com/ashtuchkin/vive-diy-position-sensor](https://github.com/ashtuchkin/vive-diy-position-sensor)

VIVE DIODE



Title		
SENSORS		
Size	Number	Revision
A		
Date:	3/26/2020	Sheet of
File:	D:\OneDrive - Massachusetts Institute of Technology\Scholar\Projects\CHD\	1 of 1



# Component list

Bill of Materials for BOM Document [MCU\_PCB.BomDoc]

Source Data From:

Project:

Variant:

MCU\_PCB.BomDoc

MCU\_PCB.P1Pcb

None



Report Date: 3/26/2020 2:48 PM  
 Print Date: 26-Mar-20 2:49:13 PM

Description	Footprint	Quantity	Designator	Supplier Order Qty 1	Manufacturer 1	Manufacturer Part Number 1	Supplier Unit Price 1	Supplier Subtotal per Board 1	Name Error: Supplier Order	Name Error: Manufacturer	Name Error: Manufacturer Part No	Name Error: Supplier Unit	Supplier Currency 1	Total Price
Antenna	ANTC1608X40N	1	ANT1	1	Johanson	2450AT1440100T	0.42	0.42					USD	0.42
CAP CER 0.1UF 16V X7R 0402	SMD-0402C	9	C1, C8, C10, C11, C12, C13, C14, C20, C23	10	Murata	GRM155R71C104KA88D	0.024	0.216					USD	0.216
CAP CER 18PF 50V NPO 0402	SMD-0402C	2	C2, C3	2	Murata	SCM155SC1H60JA18D	0.1	0.2					USD	0.2
CAP CER 0.8PF 50V NPO 0402	SMD-0402C	2	C4, C6	2	Murata	GRM155SC1H80BA01D	0.102	0.204					USD	0.204
CAP CER 0.3PF 50V NPO 0402	SMD-0402C	2	C5, C7	2	Murata	GRM155SC1H930WA01D	0.1615	0.323					USD	0.323
CAP CER 4.7UF 4V X5R 0402	SMD-0402C	3	C8, C16, C19	3	Murata	GRM155R60J475VE47D	0.147	0.441					USD	0.441
CAP CER 100PF 50V NPO 0402	SMD-0402C	1	C15	1	KBMET	C0402C101J5GACTU	0.095	0.095					USD	0.095
CAP CER 1UF 10V X7S 0402	SMD-0402C	2	C16, C17	2	Murata	GRM155R61A100KE15D							USD	0
CAP CER 10000PF 50V X7R 0402	SMD-0402C	1	C21	1	Vishay	VJ402Y103KXJCV1BC	0.0931	0.0931					USD	0.0931
CAP CER 5PF 50V NPO 0402	SMD-0402C	1	C22	1	Murata	GRM155C1H6R0CA01D	0.1	0.1					USD	0.1
CAP CER 10FF 50V NPO 0402	SMD-0402C	1	C24	1	Kyocera AVX	0402SA100BATA2A	0.45	0.45					USD	0.45
Diode	VBPV34FASR	1	D1	1	Vishay	VBPV34FASR	0.9972	0.9972					USD	0.9972
Ferrite Bead	BEADCT1608X35N	1	FB1	1	Murata	BLM18KG601SZ1D	0.1	0.1					USD	0.1
Integrated Circuit	SC79G9280X145-6N	1	IC1	1	STMicroelectronics	USBLC6-2S06	0.158	0.158					USD	0.158
Integrated Circuit	QFN65P700X700X85-69ND	1	IC2	1	STMicroelectronics	STM32WB55CGU6	7.91	7.91					USD	7.91
Integrated Circuit	SCN5F200X200X90-7N	1	IC3	1	Microchip	MCP1700T-3302EMAY	0.2837	0.2837					USD	0.2837
Integrated Circuit	SON6P930X200X100-9ND	1	IC4	1	Microchip	MCP73831T-2ACIMC	0.5342	0.5342					USD	0.5342
Integrated Circuit	SON6P930X200X80-9N	1	IC5	1	Texas Instruments	TLV902DSGT	1.14	1.14					USD	1.14
Connector	X2SON	1	IC6	1	Digley	296-49053-1-ND	0.81	0.81					USD	0.81
Connector	S4722-0164	1	J1	5	Molex	S4722-0164	0.178	0.178					USD	0.178
Connector	ZX62BSPA33	1	J2	1	Hose	ZX62-B-SPA(33)	0.41787	0.41787					USD	0.41787
Connector	TC2030MCPN.10	1	J3											0
Inductor	INDC1005X55N	1	L1	1	Murata	LOG15H62N7S02D	0.1	0.1					USD	0.1
Inductor	INDC2012X145N	1	L3	1	Taiyo Yuden	LBK2012T100K	0.037	0.037					USD	0.037
LED	LED161606048N	1	LED1	1	Rohm	SML-E12MWR786	0.38	0.38					USD	0.38
	LFL212G45TC1A007	1	LFP1	1	Murata	LFL212G45TC1A007	0.3	0.3					USD	0.3
	P70-5000045R	2	PI1, P2	2	Herwin	P70-5000045R	0.84	1.68					USD	1.68
Header, 2-Pin	HEM1K2	1	P3											0
	CAKTRVATE_BRE AKOUT_PADS	1	P4											0
MOSFET (P-Channel)	SO7FL50P160X85-5N	1	Q1	1	Rohm	RE1C0022PFL	0.33	0.33					USD	0.33
RES SMD 1K OHM 5% 1/10W 0402	SMD-0402-RES	2	R1, R2	2	Panasonic	ERJ-2RKF1001X	0.007	0.014					USD	0.014
RES SMD 10K OHM 5% 1/10W 0402	SMD-0402-RES	2	R3, R13	2	Panasonic	ERJ-2RKF1002X	0.005	0.01					USD	0.01
RES SMD 100K OHM 5% 1/10W 0402	SMD-0402-RES	4	R4, R5, R9, R10	4	Panasonic	ERJ-2RKF1003X	0.00325	0.013					USD	0.013
RES SMD 110 OHM 5% 1/10W 0402	SMD-0402-RES	1	R6	1	Vishay	CRCW0402110KFKED	0.0925	0.0925					USD	0.0925
RES SMD 17.4K OHM 1% 1/10W 0402	SMD-0402-RES	1	RF	1	Vishay	CRCW0402174KFKED	0.003	0.003					USD	0.003
RES SMD 47K OHM 5% 1/10W 0402	SMD-0402-RES	1	R8	1	Panasonic	ERJ-2RKF4702X	0.004	0.004					USD	0.004
RES SMD 3.3K OHM 5% 1/10W 0402	SMD-0402-RES	2	R11, R12	2	Panasonic	ERJ-2RKF3301X	0.004	0.008					USD	0.008
RES SMD 1M OHM 5% 1/10W 0402	SMD-0402-RES	1	R14	1	Yageo	RC0402FR-071M	0.003	0.003					USD	0.003
	TestPoint_0.4mm	21	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP21, TP22, TP23, TP25											0
Crystal or Oscillator	NX3215SA	1	Y1	1	NEK	NX3215SA-32.768K-STD-MUA-8	0.68	0.68					USD	0.68
Crystal or Oscillator	XRCG32M000F1H01R0	1	Y2	1	Murata	XRCG32M000F1H01R0	0.3632	0.3632					USD	0.3632