



ON Semiconductor®

FAN6500XX Sync Buck Converter

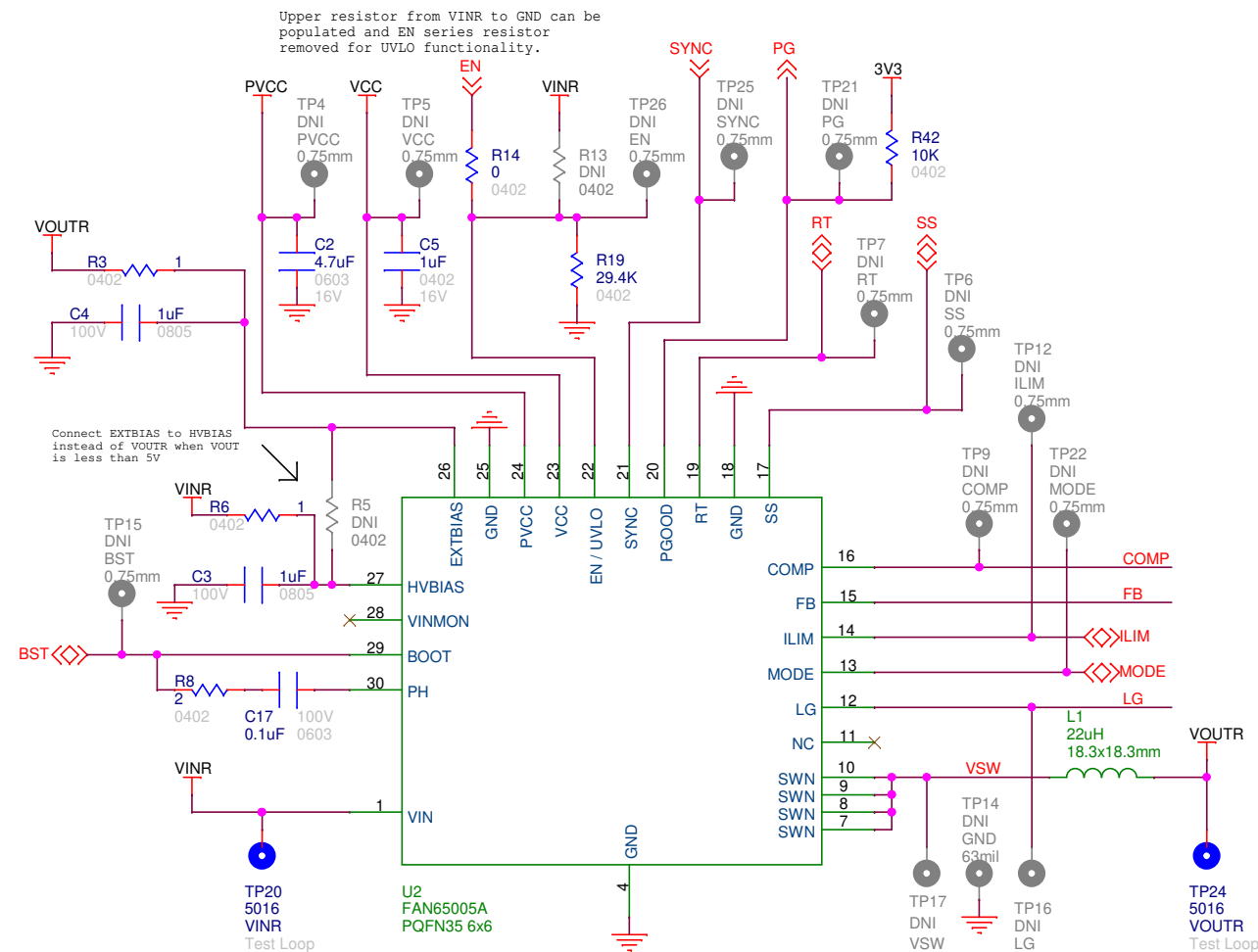
Comment Legend

- - - - - • Required Hardware
- - - - - • Optional Hardware
- - - - - • Telemetry Hardware

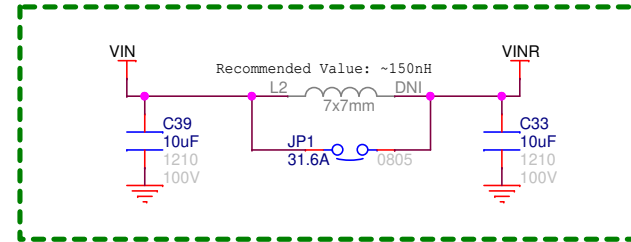
ON Semiconductor		
Title FAN6500XX Sync Buck Converter	Orderable Part Number STR-FAN6500XX-GEVB	
Variant Name FAN65005A	Document Number ONSEC-19-005	Rev REV2
Date: Friday, December 18, 2020	Sheet	1 of 7

FAN6500XX Sync Buck

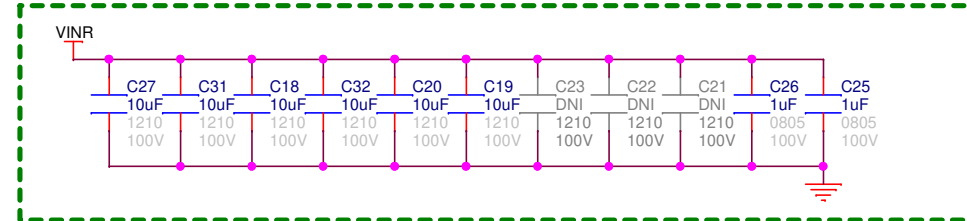
FAN6500XX Controller



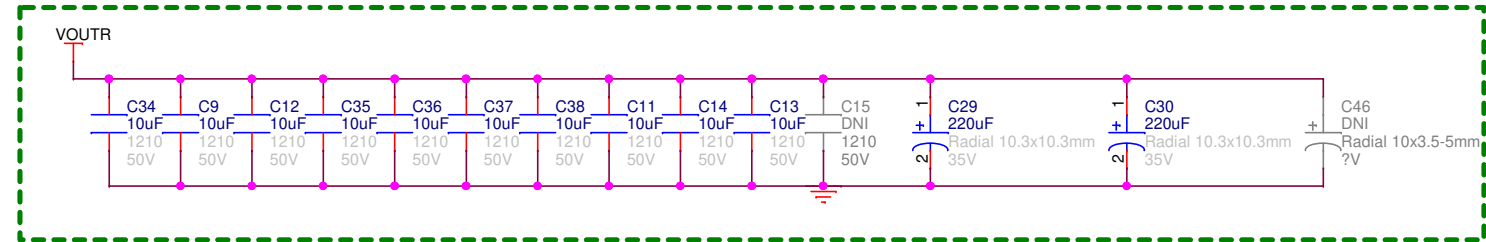
Input Filter



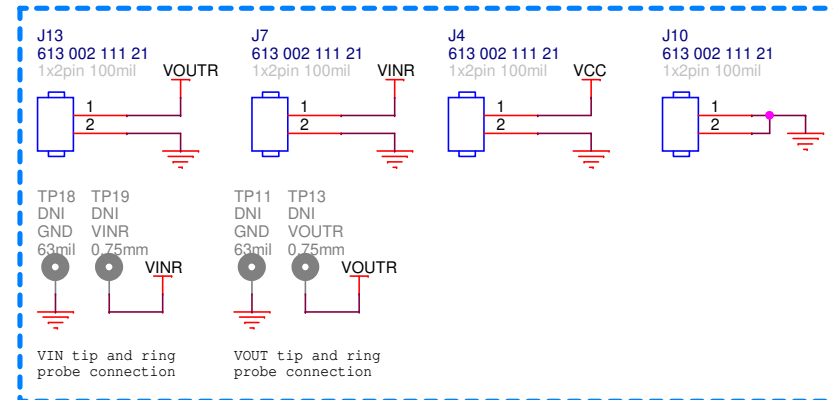
Input Capacitors



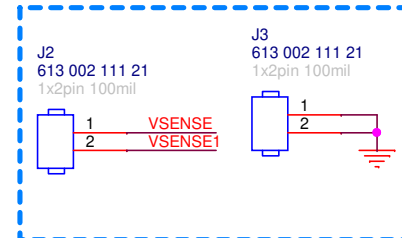
Output Capacitors



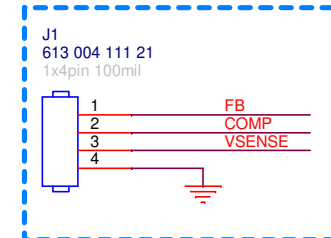
Headers and Test Points



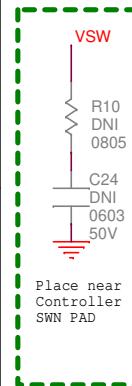
Bode Connection



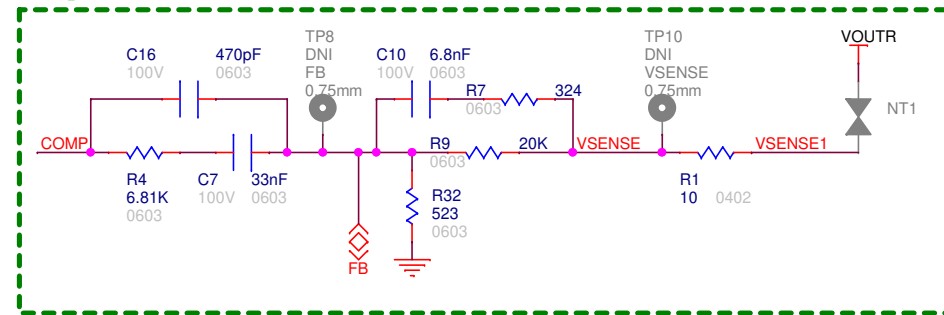
Tuning Connection



Snubber



Compensation

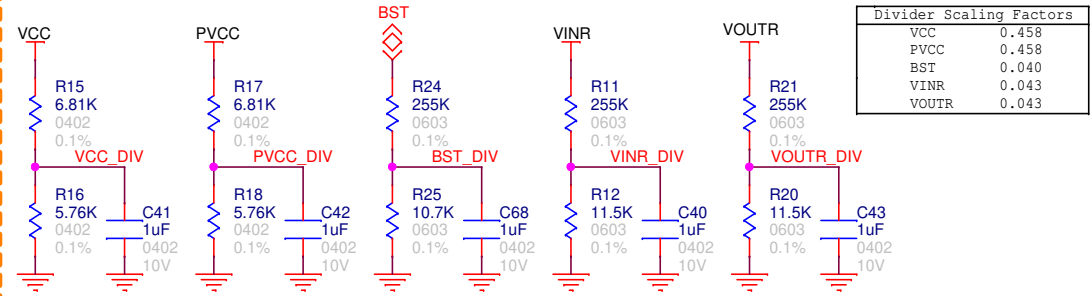


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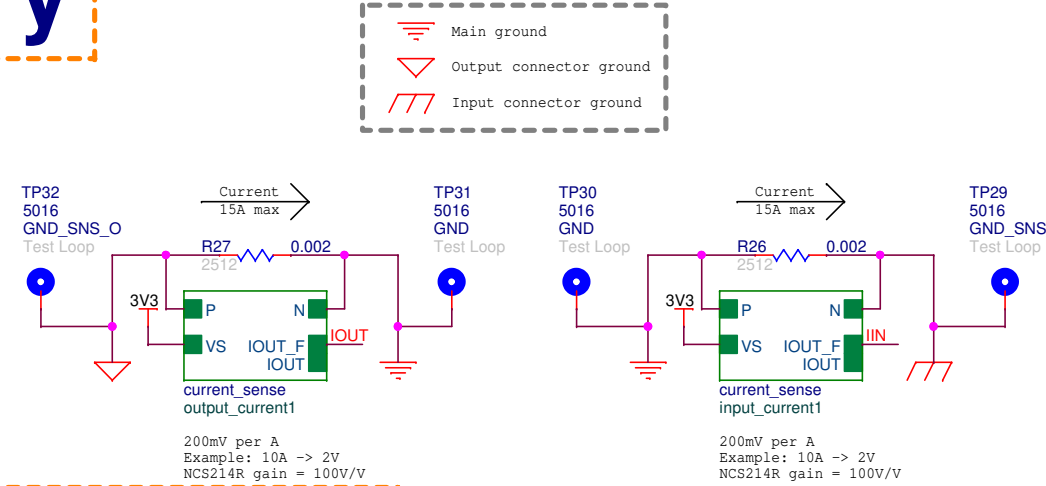
Title FAN6500XX Sync Buck Converter		Orderable Part Number STR-FAN6500XX-GEVB	
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Strata Assisted/Telemetry

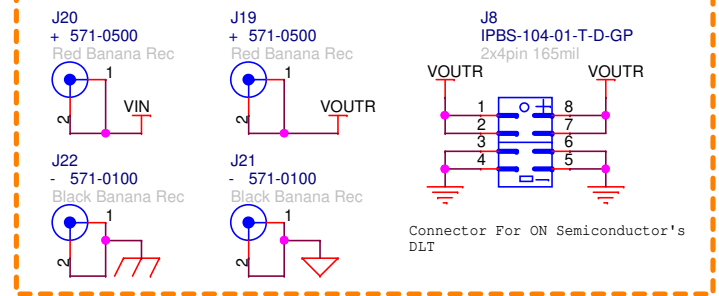
ADC Voltage Dividers



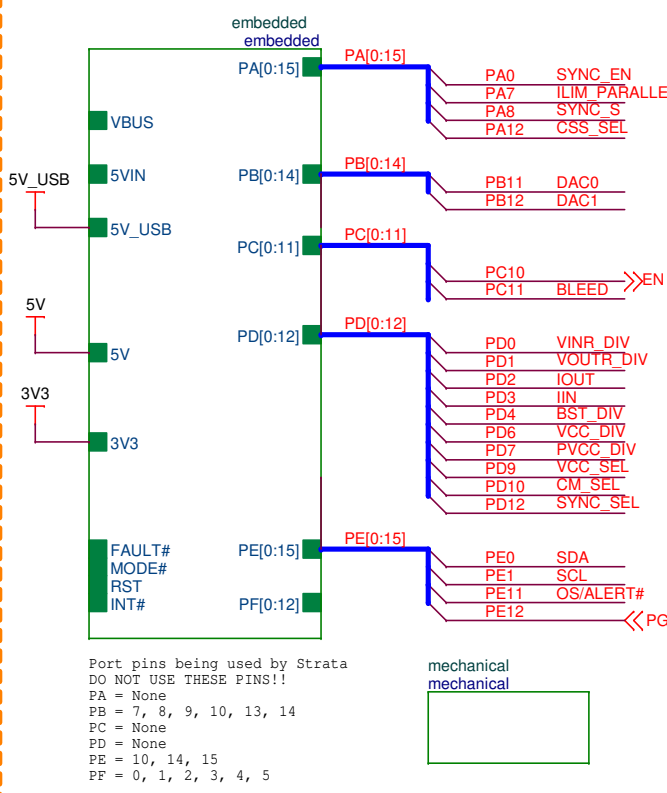
Telemetry



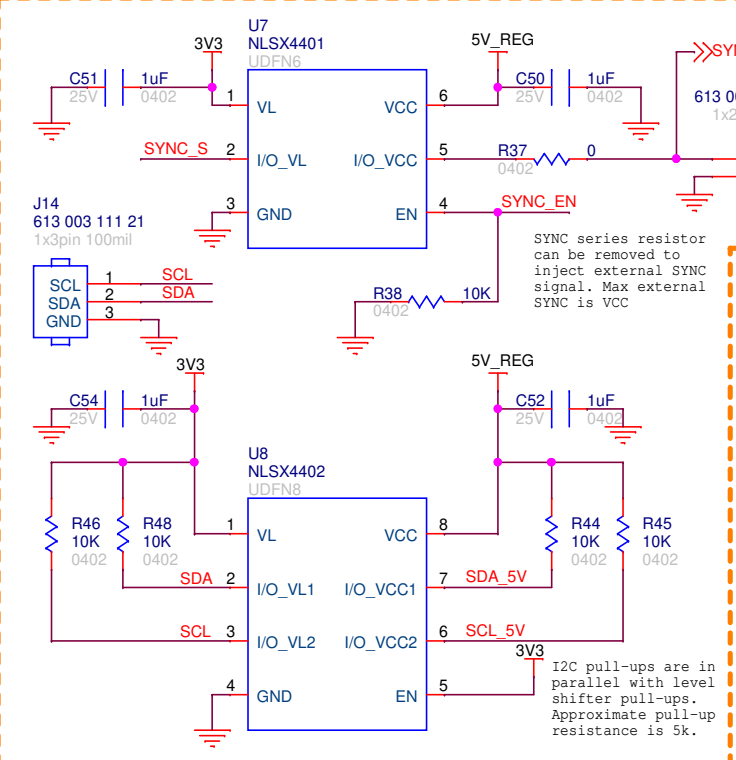
INPUT/OUTPUT Power Connectors



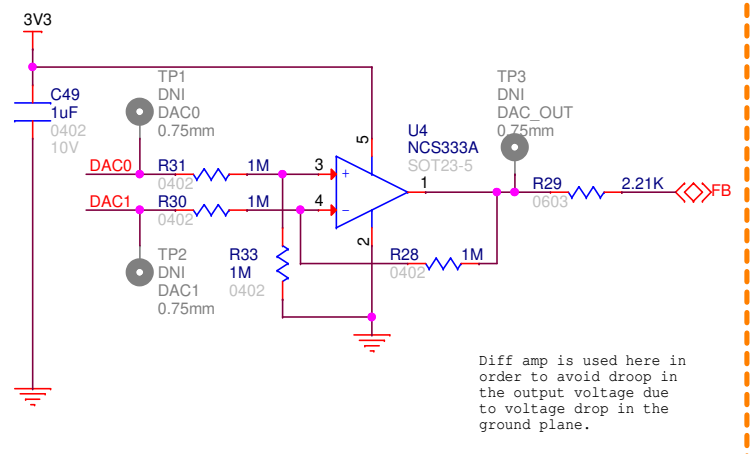
STRATA EMBEDDED



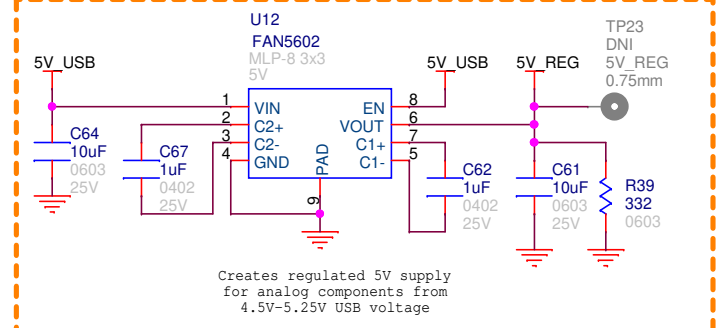
Level Shifters



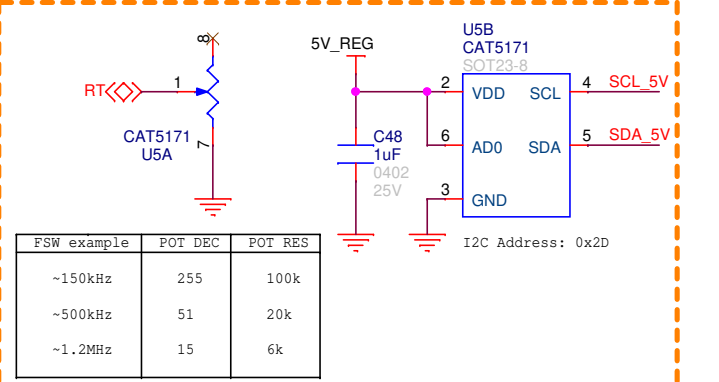
DAC Output Voltage Select



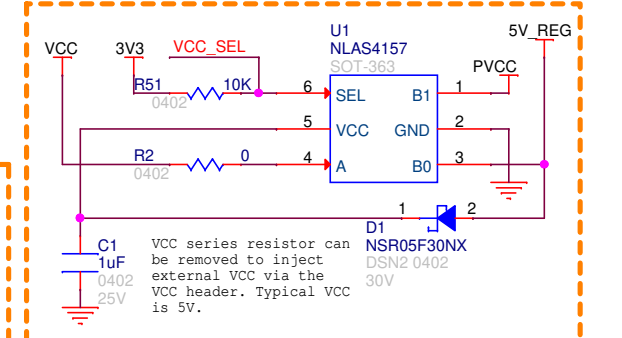
5V LDO/ Charge Pump



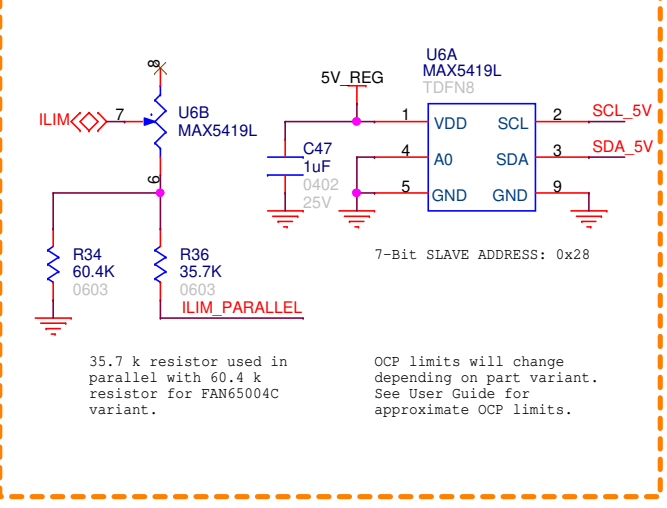
Switching Frequency Select



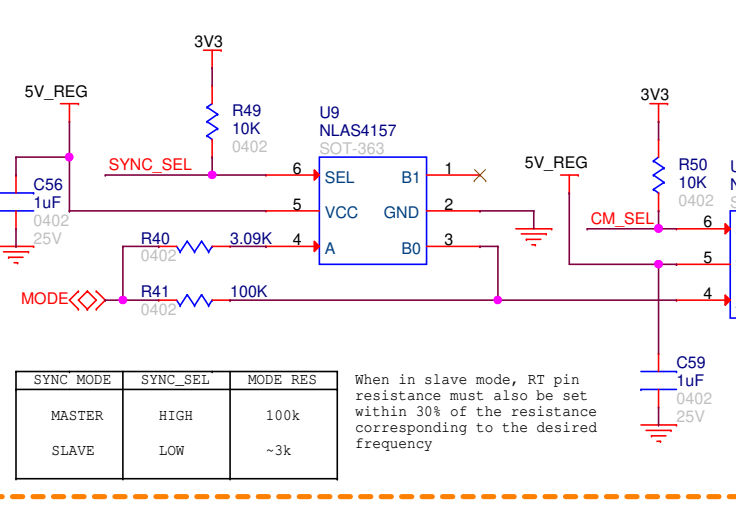
VCC Select Switch



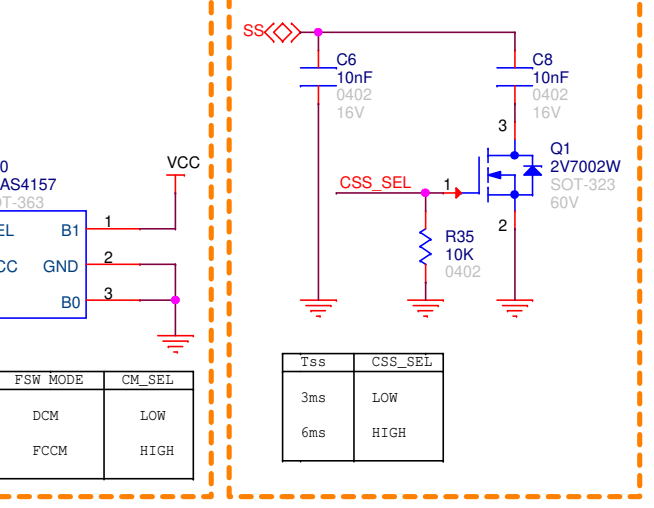
Strata OCP set



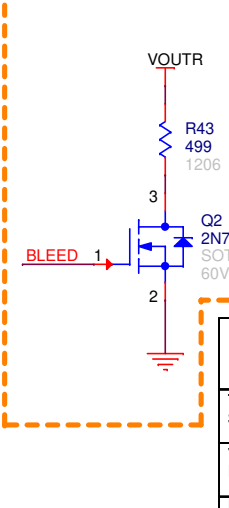
Strata MODE set



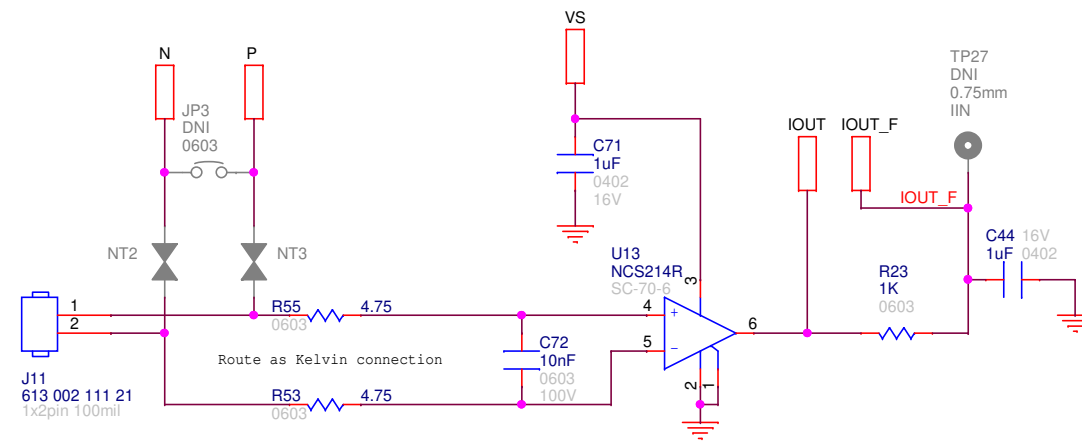
Soft-Start Select



Bleeder

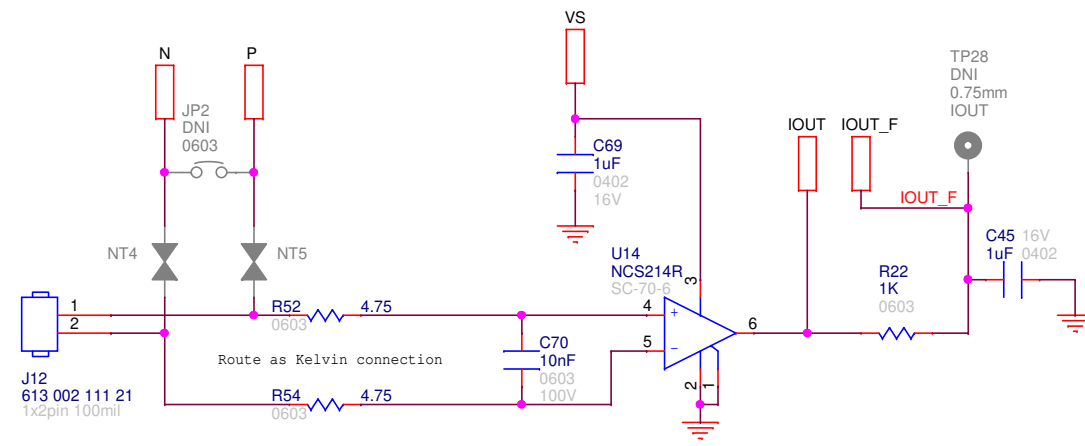


ON Semiconductor		
Title Strata Assisted/Telemetry	Orderable Part Number STR-FAN6500XX-GEVB	
Variant Name FAN65005A	Document Number ONSEC-19-005	Rev REV2
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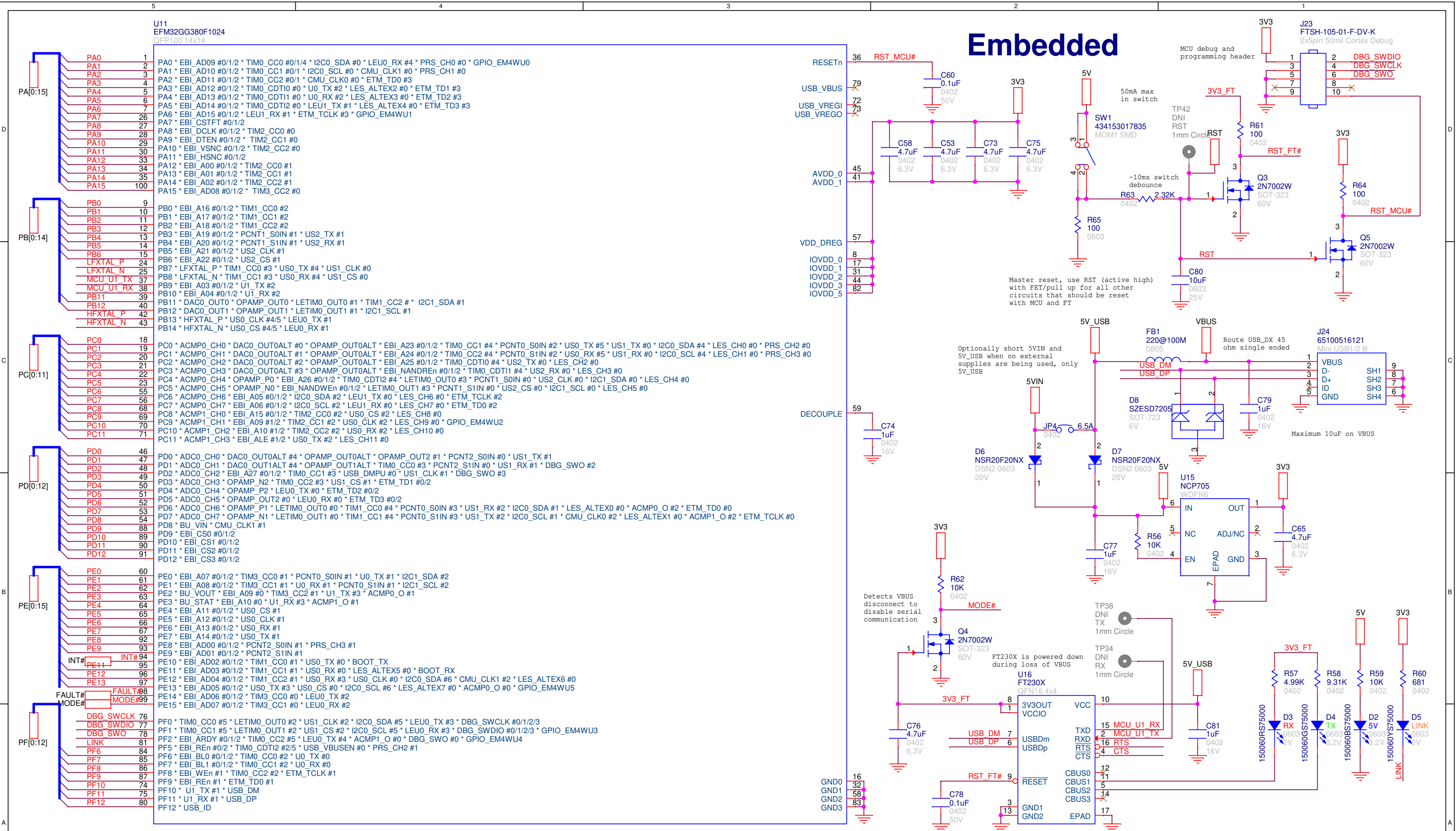


ON Semiconductor

Title Input Current Sense		Orderable Part Number STR-FAN6500XX-GEVB	
Variant Name FAN65005A		Document Number ONSEC-19-005	Rev REV2
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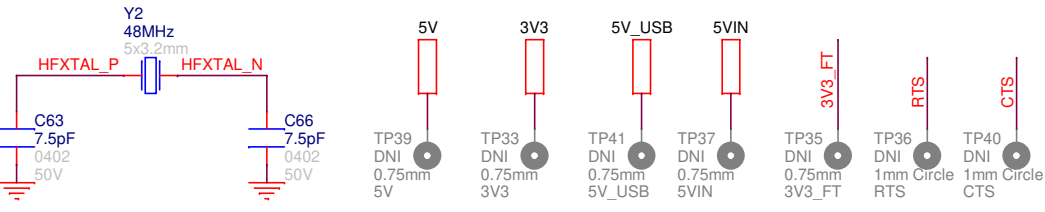
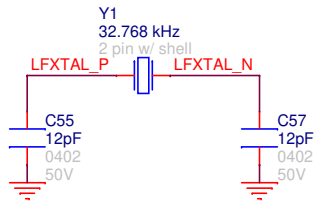
ON Semiconductor		
Title Output Current Sense		Orderable Part Number STR-FAN6500XX-GEVB
Variant Name FAN65005A		Document Number ONSEC-19-005
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Embedded

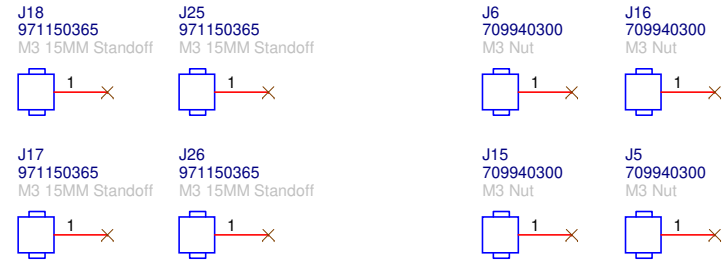
U11
EFM32GG380F1024
QFP100 14x14

PA0	1	PA0 * EBI_AD09 #0/1/2 * TIM0_CC0 #0/1/4 * I2C0_SDA #0 * LEU0_RX #4 * PRS_CH0 #0 * GPIO_EM4WU0
PA1	2	PA1 * EBI_AD10 #0/1/2 * TIM0_CC1 #0/1 * I2C0_SCL #0 * CMU_CLK1 #0 * PRS_CH1 #0
PA2	3	PA2 * EBI_AD11 #0/1/2 * TIM0_CC2 #0/1 * CMU_CLK0 #0 * ETM_TD0 #3
PA3	4	PA3 * EBI_AD12 #0/1/2 * TIM0_CDTI0 #0 * U0_TX #2 * LES_ALTEX2 #0 * ETM_TD1 #3
PA4	5	PA4 * EBI_AD13 #0/1/2 * TIM0_CDTI1 #0 * U0_RX #2 * LES_ALTEX3 #0 * ETM_TD2 #3
PA5	6	PA5 * EBI_AD14 #0/1/2 * TIM0_CDTI2 #0 * LEU1_TX #1 * LES_ALTEX4 #0 * ETM_TD3 #3
PA6	7	PA6 * EBI_AD15 #0/1/2 * LEU1_RX #1 * ETM_TCLK #3 * GPIO_EM4WU1
PA7	26	PA7 * EBI_CSTFT #0/1/2
PA8	27	PA8 * EBI_DCLK #0/1/2 * TIM2_CC0 #0
PA9	28	PA9 * EBI_DTEN #0/1/2 * TIM2_CC1 #0
PA10	29	PA10 * EBI_VSNC #0/1/2 * TIM2_CC2 #0
PA11	30	PA11 * EBI_HSNC #0/1/2
PA12	33	PA12 * EBI_A00 #0/1/2 * TIM2_CC0 #1
PA13	34	PA13 * EBI_A01 #0/1/2 * TIM2_CC1 #1
PA14	35	PA14 * EBI_A02 #0/1/2 * TIM2_CC2 #1
PA15	100	PA15 * EBI_AD08 #0/1/2 * TIM3_CC2 #0
PB0	9	PB0 * EBI_A16 #0/1/2 * TIM1_CC0 #2
PB1	10	PB1 * EBI_A17 #0/1/2 * TIM1_CC1 #2
PB2	11	PB2 * EBI_A18 #0/1/2 * TIM1_CC2 #2
PB3	12	PB3 * EBI_A19 #0/1/2 * PCNT1_S0IN #1 * US2_TX #1
PB4	13	PB4 * EBI_A20 #0/1/2 * PCNT1_S1IN #1 * US2_RX #1
PB5	14	PB5 * EBI_A21 #0/1/2 * US2_CLK #1
PB6	15	PB6 * EBI_A22 #0/1/2 * US2_CS #1
LFXTAL_P	24	PB7 * LFXTAL_P * TIM1_CC0 #3 * US0_TX #4 * US1_CLK #0
LFXTAL_N	25	PB8 * LFXTAL_N * TIM1_CC1 #3 * US0_RX #4 * US1_CS #0
MCU_U1_TX	37	PB9 * EBI_A03 #0/1/2 * U1_TX #2
MCU_U1_RX	38	PB10 * EBI_A04 #0/1/2 * U1_RX #2
PB11	39	PB11 * DAC0_OUT0 * OPAMP_OUT0 * LETIM0_OUT0 #1 * TIM1_CC2 #2 * I2C1_SDA #1
PB12	40	PB12 * DAC0_OUT1 * OPAMP_OUT1 * LETIM0_OUT1 #1 * I2C1_SCL #1
HFXITAL_P	42	PB13 * HFXITAL_P * US0_CLK #4/5 * LEU0_TX #1
HFXITAL_N	43	PB14 * HFXITAL_N * US0_CS #4/5 * LEU0_RX #1
PC0	18	PC0 * ACMP0_CH0 * DAC0_OUT0ALT #0 * OPAMP_OUT0ALT * EBI_A23 #0/1/2 * TIM0_CC1 #4 * PCNT0_S0IN #2 * US0_TX #5 * US1_TX #0 * I2C0_SDA #4 * LES_CH0 #0 * PRS_CH2 #0
PC1	19	PC1 * ACMP0_CH1 * DAC0_OUT0ALT #1 * OPAMP_OUT0ALT * EBI_A24 #0/1/2 * TIM0_CC2 #4 * PCNT0_S1IN #2 * US0_RX #5 * US1_RX #0 * I2C0_SCL #4 * LES_CH1 #0 * PRS_CH3 #0
PC2	20	PC2 * ACMP0_CH2 * DAC0_OUT0ALT #2 * OPAMP_OUT0ALT * EBI_A25 #0/1/2 * TIM0_CDTI0 #4 * US2_TX #0 * LES_CH2 #0
PC3	21	PC3 * ACMP0_CH3 * DAC0_OUT0ALT #3 * OPAMP_OUT0ALT * EBI_NANDREN #0/1/2 * TIM0_CDTI1 #4 * US2_RX #0 * LES_CH3 #0
PC4	22	PC4 * ACMP0_CH4 * OPAMP_P0 * EBI_A26 #0/1/2 * TIM0_CDTI2 #4 * LETIM0_OUT0 #3 * PCNT1_S0IN #0 * US2_CLK #0 * I2C1_SDA #0 * LES_CH4 #0
PC5	23	PC5 * ACMP0_CH5 * OPAMP_N0 * EBI_NANDWEN #0/1/2 * LETIM0_OUT1 #3 * PCNT1_S1IN #0 * US2_CS #0 * I2C1_SCL #0 * LES_CH5 #0
PC6	55	PC6 * ACMP0_CH6 * EBI_A05 #0/1/2 * I2C0_SDA #2 * LEU1_TX #0 * LES_CH6 #0 * ETM_TCLK #2
PC7	56	PC7 * ACMP0_CH7 * EBI_A06 #0/1/2 * I2C0_SCL #2 * LEU1_RX #0 * LES_CH7 #0 * ETM_TD0 #2
PC8	68	PC8 * ACMP1_CH0 * EBI_A15 #0/1/2 * TIM2_CC0 #2 * US0_CS #2 * LES_CH8 #0
PC9	69	PC9 * ACMP1_CH1 * EBI_A09 #1/2 * TIM2_CC1 #2 * US0_CLK #2 * LES_CH9 #0 * GPIO_EM4WU2
PC10	70	PC10 * ACMP1_CH2 * EBI_A10 #1/2 * TIM2_CC2 #2 * US0_RX #2 * LES_CH10 #0
PC11	71	PC11 * ACMP1_CH3 * EBI_ALE #1/2 * US0_TX #2 * LES_CH11 #0
PD0	46	PD0 * ADC0_CH0 * DAC0_OUT0ALT #4 * OPAMP_OUT0ALT * OPAMP_OUT2 #1 * PCNT2_S0IN #0 * US1_TX #1
PD1	47	PD1 * ADC0_CH1 * DAC0_OUT1ALT #4 * OPAMP_OUT1ALT * TIM0_CC0 #3 * PCNT2_S1IN #0 * US1_RX #1 * DBG_SWO #2
PD2	48	PD2 * ADC0_CH2 * EBI_A27 #0/1/2 * TIM0_CC1 #3 * USB_DMPU #0 * US1_CLK #1 * DBG_SWO #3
PD3	49	PD3 * ADC0_CH3 * OPAMP_N2 * TIM0_CC2 #3 * US1_CS #1 * ETM_TD1 #0/2
PD4	50	PD4 * ADC0_CH4 * OPAMP_P2 * LEU0_TX #0 * ETM_TD2 #0/2
PD5	51	PD5 * ADC0_CH5 * OPAMP_OUT2 #0 * LEU0_RX #0 * ETM_TD3 #0/2
PD6	52	PD6 * ADC0_CH6 * OPAMP_P1 * LETIM0_OUT0 #0 * TIM1_CC0 #4 * PCNT0_S0IN #3 * US1_RX #2 * I2C0_SDA #1 * LES_ALTEX0 #0 * ACMP0_O #2 * ETM_TD0 #0
PD7	53	PD7 * ADC0_CH7 * OPAMP_N1 * LETIM0_OUT1 #0 * TIM1_CC1 #4 * PCNT0_S1IN #3 * US1_TX #2 * I2C0_SCL #1 * CMU_CLK0 #2 * LES_ALTEX1 #0 * ACMP1_O #2 * ETM_TCLK #0
PD8	54	PD8 * BU_VIN * CMU_CLK1 #1
PD9	88	PD9 * EBI_CS0 #0/1/2
PD10	89	PD10 * EBI_CS1 #0/1/2
PD11	90	PD11 * EBI_CS2 #0/1/2
PD12	91	PD12 * EBI_CS3 #0/1/2
PE0	60	PE0 * EBI_A07 #0/1/2 * TIM3_CC0 #1 * PCNT0_S0IN #1 * U0_TX #1 * I2C1_SDA #2
PE1	61	PE1 * EBI_A08 #0/1/2 * TIM3_CC1 #1 * U0_RX #1 * PCNT0_S1IN #1 * I2C1_SCL #2
PE2	62	PE2 * BU_VOUT * EBI_A09 #0 * TIM3_CC2 #1 * U1_TX #3 * ACMP0_O #1
PE3	63	PE3 * BU_STAT * EBI_A10 #0 * U1_RX #3 * ACMP1_O #1
PE4	64	PE4 * EBI_A11 #0/1/2 * US0_CS #1
PE5	65	PE5 * EBI_A12 #0/1/2 * US0_CLK #1
PE6	66	PE6 * EBI_A13 #0/1/2 * US0_RX #1
PE7	67	PE7 * EBI_A14 #0/1/2 * US0_TX #1
PE8	92	PE8 * EBI_AD00 #0/1/2 * PCNT2_S0IN #1 * PRS_CH3 #1
PE9	93	PE9 * EBI_AD01 #0/1/2 * PCNT2_S1IN #1
INT#	94	PE10 * EBI_AD02 #0/1/2 * TIM1_CC0 #1 * US0_TX #0 * BOOT_TX
PE11	95	PE11 * EBI_AD03 #0/1/2 * TIM1_CC1 #1 * US0_RX #0 * LES_ALTEX5 #0 * BOOT_RX
PE12	96	PE12 * EBI_AD04 #0/1/2 * TIM1_CC2 #1 * US0_RX #3 * US0_CLK #0 * I2C0_SDA #6 * CMU_CLK1 #2 * LES_ALTEX6 #0
PE13	97	PE13 * EBI_AD05 #0/1/2 * US0_TX #3 * US0_CS #0 * I2C0_SCL #6 * LES_ALTEX7 #0 * ACMP0_O #0 * GPIO_EM4WU5
FAULT#	98	PE14 * EBI_AD06 #0/1/2 * TIM3_CC0 #0 * LEU0_TX #2
MODE#	99	PE15 * EBI_AD07 #0/1/2 * TIM3_CC1 #0 * LEU0_RX #2
PF0	76	PF0 * TIM0_CC0 #5 * LETIM0_OUT0 #2 * US1_CLK #2 * I2C0_SDA #5 * LEU0_TX #3 * DBG_SWCLK #0/1/2/3
DBG_SWCLK	76	PF1 * TIM0_CC1 #5 * LETIM0_OUT1 #2 * US1_CS #2 * I2C0_SCL #5 * LEU0_RX #3 * DBG_SWDIO #0/1/2/3 * GPIO_EM4WU4
DBG_SWDIO	77	PF2 * EBI_ARDY #0/1/2 * TIM0_CC2 #5 * LEU0_TX #4 * ACMP1_O #0 * DBG_SWO #0 * GPIO_EM4WU4
DBG_SWO	78	PF5 * EBI_REn #0/2 * TIM0_CDTI2 #2/5 * USB_VBUSEN #0 * PRS_CH2 #1
LINK	81	PF6 * EBI_BL0 #0/1/2 * TIM0_CC0 #2 * U0_TX #0
PF6	84	PF7 * EBI_BL1 #0/1/2 * TIM0_CC1 #2 * U0_RX #0
PF7	85	PF8 * EBI_WEn #1 * TIM0_CC2 #2 * ETM_TCLK #1
PF8	86	PF9 * EBI_REn #1 * ETM_TD0 #1
PF9	87	PF10 * U1_TX #1 * USB_DM
PF10	74	PF11 * U1_RX #1 * USB_DP
PF11	75	PF12 * USB_ID
PF12	80	



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Mechanical



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