

The schematic diagram illustrates the connection between the EZFET module and the MSP430F5528IRGCT microcontroller. The EZFET module components and their connections are as follows:

- EZFET LED0**: Connected to P1.0/TA0CLK/ACLK (pin 18) and P1.1/TA0.0 (pin 20).
- EZFET LED1**: Connected to P1.2/TA0.1 (pin 21) and P1.3/TA0.2 (pin 22).
- EZFET UARTTXD**: Connected to P1.4/TA0.3 (pin 23) and P1.5/TA0.4 (pin 24).
- EZFET UARTRXD**: Connected to P1.6/TA1CLK/CBOUT (pin 25) and P1.7/TA1.0 (pin 26).
- EZFET VREF**: Connected to P5.0/AB+VREF+/VREF+ (pin 9) and P5.1/AB-VREF-/VREF- (pin 10).
- EZFET XT2IN**: Connected to P5.3/XT2IN (pin 67) and P5.3/XT2OUT (pin 68).
- EZFET XT2OUT**: Connected to P5.4/XIN (pin 12) and P5.5/XOUT (pin 13).
- EZFET D\_P**: Connected to PU.0/DP (pin 50) and PU.1/DM (pin 51).
- EZFET D\_N**: Connected to PUR (pin 51).
- EZFET PUR**: Connected to PUR (pin 51).
- EZFET V18**: Connected to V18 (pin 55) and V18 VCORE (pin 56).
- EZFET VCORE**: Connected to V18 (pin 55) and V18 VCORE (pin 56).
- EZFET VBUS**: Connected to VBUS (pin 53) and VBUS (pin 54).
- EZFET VCC**: Connected to AVCC1 (pin 11), DVCC1 (pin 15), and DVCC2 (pin 40).

The MSP430F5528IRGCT microcontroller is connected to the EZFET module via the following pins:

- P1.0/TA0CLK/ACLK (pin 18)
- P1.1/TA0.0 (pin 20)
- P1.2/TA0.1 (pin 21)
- P1.3/TA0.2 (pin 22)
- P1.4/TA0.3 (pin 23)
- P1.5/TA0.4 (pin 24)
- P1.6/TA1CLK/CBOUT (pin 25)
- P1.7/TA1.0 (pin 26)
- P3.0/UCB0SIMO/UCB0SDA (pin 34)
- P3.1/UCB0SOMI/UCB0SCL (pin 35)
- P3.2/UCB0CLK/UCB0STE (pin 36)
- P3.3/UCB0TXD/UCB0SIMO (pin 37)
- P3.4/UCB0RXD/UCB0SOMI (pin 38)
- P5.0/AB+VREF+/VREF+ (pin 9)
- P5.1/AB-VREF-/VREF- (pin 10)
- P5.3/XT2IN (pin 67)
- P5.3/XT2OUT (pin 68)
- P5.4/XIN (pin 12)
- P5.5/XOUT (pin 13)
- PU.0/DP (pin 50)
- PU.1/DM (pin 51)
- PUR (pin 51)
- V18 (pin 55)
- V18 VCORE (pin 56)
- VBUS (pin 53)
- VBUS (pin 54)
- AVCC1 (pin 11)
- DVCC1 (pin 15)
- DVCC2 (pin 40)
- MSP430F5528IRGCT (pin 40)
- P2.0/TA1.1 (pin 27)
- P2.1/TA1.2 (pin 28)
- P2.2/TA2CLK/SMCLK (pin 29)
- P2.3/TA2.0 (pin 30)
- P2.4/TA2.1 (pin 31)
- P2.5/TA2.2 (pin 32)
- P2.6/RTCLK/DMAE0 (pin 33)
- P2.7/UCB0STE/UCB0CLK (pin 34)
- P4.0/PM\_UCB1STE/PM\_UCB1CLK (pin 41)
- P4.1/PM\_UCB1SIMO/PM\_UCB1SDA (pin 42)
- P4.2/PM\_UCB1SOMI/PM\_UCB1SCL (pin 43)
- P4.3/PM\_UCB1CLK/PM\_UCB1STE (pin 44)
- P4.4/PM\_UCB1TXD/PM\_UCB1SIMO (pin 45)
- P4.5/PM\_UCB1RXD/PM\_UCB1SOMI (pin 46)
- P4.6/PM\_NONE (pin 47)
- P4.7/PM\_NONE (pin 48)
- P6.0/CB0/A0 (pin 49)
- P6.1/CB1/A1 (pin 50)
- P6.2/CB2/A2 (pin 51)
- P6.3/CB3/A3 (pin 52)
- P6.4/CB4/A4 (pin 53)
- P6.5/CB5/A5 (pin 54)
- P6.6/CB6/A6 (pin 55)
- P6.7/CB7/A7 (pin 56)
- PJ.0/TDO (pin 57)
- PJ.1/TDI/TCLK (pin 58)
- PJ.2/TMS (pin 59)
- PJ.3/TCK (pin 60)
- RST/NMI/SBWTDIO (pin 61)
- TEST/SBWTC (pin 62)
- QFN PAD (pin 63)
- VSSU (pin 64)
- AVSS1 (pin 65)
- AVSS2 (pin 66)
- DVSS1 (pin 67)
- DVSS2 (pin 68)

The diagram also shows the connection to a Target-Connector and a Voltage-Divider.

[illegible]

**Host-MCU Debug Connector**

Pin 2 resistor. If debug or programming adapter is used to power the MSP430, remove Pin 4 resistor and populate Pin 2 resistor.

POP Pin 2 zero ohm resistor if MSP-FET is supplying 3V3 to MSP430  
POP Pin 4 zero ohm resistor if USB is supplying 3V3 to MSP430 (via LDO).

Pin 11, 12 Pin 13, 14

EZFET\_TEST  
EZFET\_VCC

EZFET\_RST  
EZFET\_TCK  
EZFET\_TMS  
EZFET\_TDI  
EZFET\_TDO

61301421121

GND

The diagram illustrates the EZFET module's internal connections. On the left, the 'to Host MCU' section shows signals T TEST\_TCKC, T RST\_RST, EZFET\_UARTRXD, and EZFET\_UARTTXD, each passing through a 10Ω resistor (R64, R65, R66, R67) to a 10pF capacitor (C26, C27) connected to GND. The EZFET\_VCC signal is connected to the module's VCC pin. The central component is the J10 connector, a 16-pin header. On the right, the 'to Target MCU' section shows signals TST/SBWTCK, RST/SBWTIDIO, MCU\_UARTTXD, and MCU\_UARTRXD, which are connected to the Target MCU's corresponding pins. The Target MCU's 3V3 pin is connected to the module's V3V3 pin. Power connections include a Power-Net (indicated by a red circle with a '1') connected to GND and the module's GND pin.

Order: <b>DRV8100x-Q1EVM</b>		Designed for: <b>Public Release</b>		Mod. Date: 02-04-2024		 <b>TEXAS INSTRUMENTS</b>  <a href="http://www.ti.com">http://www.ti.com</a> © Texas Instruments, 2023
TID #: <b>N/A</b>		Project ID: <b>MD075</b>				
Num: <b>MD-075</b>		Rev: <b>E1</b>		Sheet Title:		
SVN: <b>NR</b> Not in version control		Assembly Variant: <b>001</b>		Sheet: 1 of 3		
Drawn By: <b>Murugavel Kujal</b>		File: <b>MD091E1_ezFET_SchDoc</b>		Size: B		
Engineer: <b>Audrey Kuehler</b>		Contact: <b>http://www.ti.com/support</b>				

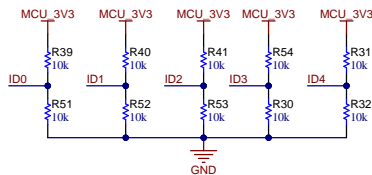
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Pin connection diagram for the PC10DA0AAN component. The diagram shows a 20-pin connector (TP20 to TP28) connected to a 20-pin component (J7). The connections are as follows:

TP Pin	J7 Pin	Signal / Component
TP20	1	GND
TP21	2	MCU 3V3
TP22	5	IN0
TP23	6	R94 100 IN1 MCU
TP24	7	R95 100 IN1 MCU
TP25	8	R96 100 nSLEEP MCU
TP26	11	SDO
TP27	12	R92 100 SDO MCU
TP28	13	R91 100 SDI MCU
TP29	14	R93 100 SCLK MCU
TP30	15	R94 100 SCLK MCU
TP31	16	R95 100 SCS MCU
TP32	17	R96 100 SCS MCU
TP33	18	R97 100 SCS MCU
TP34	19	R98 100 SCS MCU
TP35	20	R99 100 SCS MCU

The resistors on the ID[2:0] nets inform the firmware which device ID variant is on this board

Device	ID1	Type	ID3
DRV81008-Q1	0	Prerelease	0
DRV81004-Q1	1	Release	1
Just In Case	2		
Revision 1	3		
Revision 2	4		

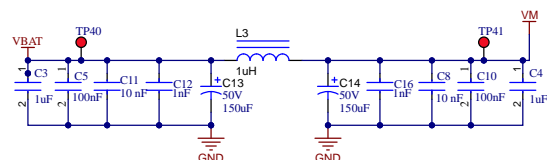
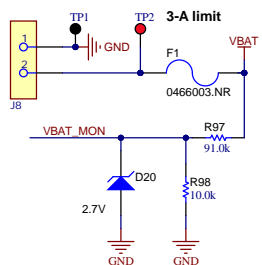


The schematic diagram illustrates the pin connections for the MSP430F5338IPZ microcontroller (U1) to an MCU. The microcontroller is shown in a yellow box with its pins numbered 1 to 100. The connections are as follows:

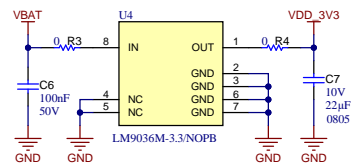
- Power Supply:**
  - MCU\_3V3 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - GND is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Signal Connections:**
  - TP29 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - TP30 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - TP31 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - TP35 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - TP36 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Peripheral Connections:**
  - TP2 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - TP3 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - TP4 is connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29

4.5 - 40V DC

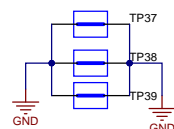
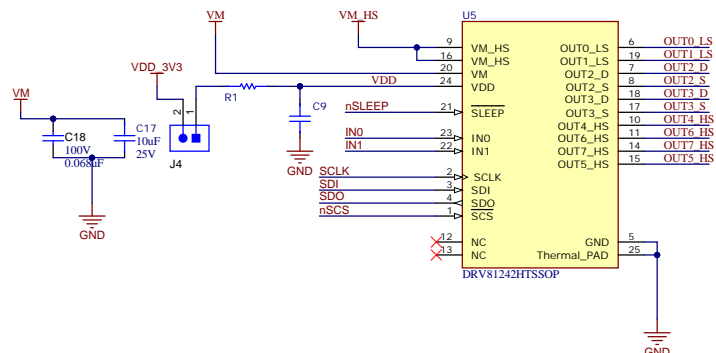
## Board power



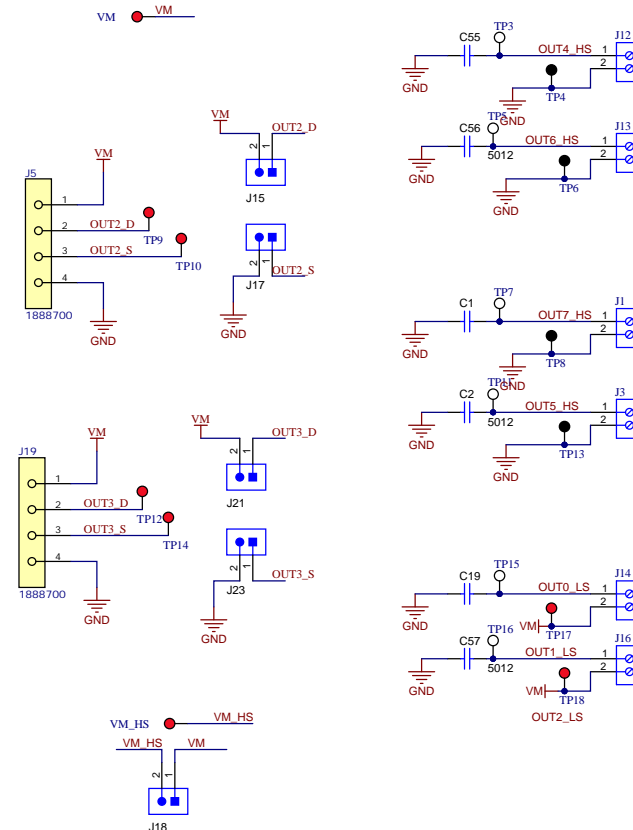
## 3.3V LDO



## DRV81242-Q1



## Output Connector



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Orderable: DRV8100x-Q1EVM	Designed for: Public Release	Mod. Date: 12-06-2024
TID #: N/A	Project Title: MD075	
Number: MD-075	Rev: E1	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: 001	Sheet 2 of 3
Drawn By: Tilden Chen	File: MD091E1_DRV81xxx.SchDoc	Size: B
Engineer: Audrey Kuehler	Contact: http://www.ti.com/support	http://www.ti.com



A

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H1  
SJ-5303 (CLEAR)

H2  
SJ-5303 (CLEAR)

H3  
SJ-5303 (CLEAR)

H4  
SJ-5303 (CLEAR)



PCB  
LOGO  
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CE Mark

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LOGO  
FCC disclaimer

PCB  
LOGO  
WEEE logo

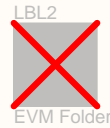
CAUTION HOT SURFACE

CAUTION HOT SURFACE

PCB  
LOGO  
CAUTION. READ USER GUIDE BEFORE USE

B

B



C

C

LBL1  
PCB Label  
THT-14-423-10  
Size: 0.65" x 0.20 "

ZZ1  
Label Assembly Note  
This Assembly Note is for PCB labels only

Variant/Label Table	
Variant	Label Text
001	DRV81008-Q1EVM

ZZ2  
Assembly Note  
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3  
Assembly Note  
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4  
Assembly Note  
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

D

D

Title		
Size	Number	Revision
A		
Date:	6-19-2024	Sheet of
File:	D:\prakash\..\MD091E1_Hardware.SchDocDrawn By:	

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