ASEK33110-T-SUBKIT, ASEK33115-T-SUBKIT

A33110, A33115, Programming Subkit Quick-Start User Guide

DESCRIPTION

This quick-start guide describes the equipment recommended to evaluate the A33110 (A33115) device.

RECOMMENDED EQUIPMENT

- ASEK-20-T evaluation kit (see Figure 1)
  - □ ASEK-20 chassis with main motherboard inside
  - □ USB communications cable
  - □ DC power supply/cable with AC outlet adapters
  - □ Proto board
  - □ Ribbon cable

- A33110 (A33115) programming subkit [ASEK33110-T-SUBKIT (ASEK3315-T-SUBKIT); see Figure 2]:
  - □ A33110 (A33115) daughter board
  - □ A33110 (A33115) socketed granddaughter board, single die
  - □ A33110 (A33115) surface-mount granddaughter board, single die

Figure 1: ASEK-20-T Evaluation Kit

Table 1: Ordering Information

Name	Part Number
A33110 (A33115) Programming Subkit	ASEK33110-T-SUBKIT or ASEK33115-T-SUBKIT (TED-0003684)

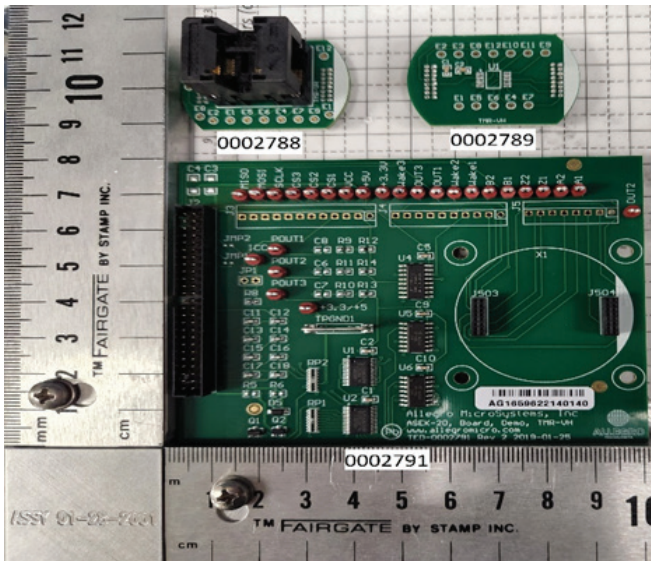

Figure 2: A33110 (A33115) Programming Subkit [ASEK33110-T-SUBKIT (ASEK33115-T-SUBKIT)]

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USING THE EVALUATION SUBKIT

Connect the ASEK33110-T-KIT (ASEK33115-T-KIT) and the A33110 (A33115) device as follows:

1. Connect one end of the USB communications cable to a personal computer.
2. Connect the other end of the USB communications cable to the USB port on the ASEK-20 chassis.
3. Connect the ribbon cable to the J2 connector on the daughter board.
4. Connect the other end of the ribbon cable to the DEVICE CONNECTION port on the ASEK-20 chassis.
5. Mount the socketed granddaughter board, or the surface-mount granddaughter board onto the daughter board.
6. Connect the DC power supply/cable to the 5 V port on the ASEK-20 chassis.
7. Plug the DC power supply into a 110 V/220 AC 60/50 Hz outlet with the proper adapter.
8. Place the A33110 (A33115) device in the socketed granddaughter board.

GETTING STARTED WITH SOFTWARE

Software GUI for A33110 (A33115) Programming Subkit

Download, install, and run the programmer software. To download the programmer software, register through the software portal at: https://registration.allegromicro.com/login.

ASEK-20 USB Driver

If the appropriate COM port driver is not installed automatically, download and install the latest version of the driver from the FTDI website at:
http://www.ftdichip.com/Drivers/VCP.htm

A33110/A33115 Sample Devices

The A33110 (A33115) device is not included with the A33110 (A33115) programming subkit. For samples, contact your local Allegro representative or factory.

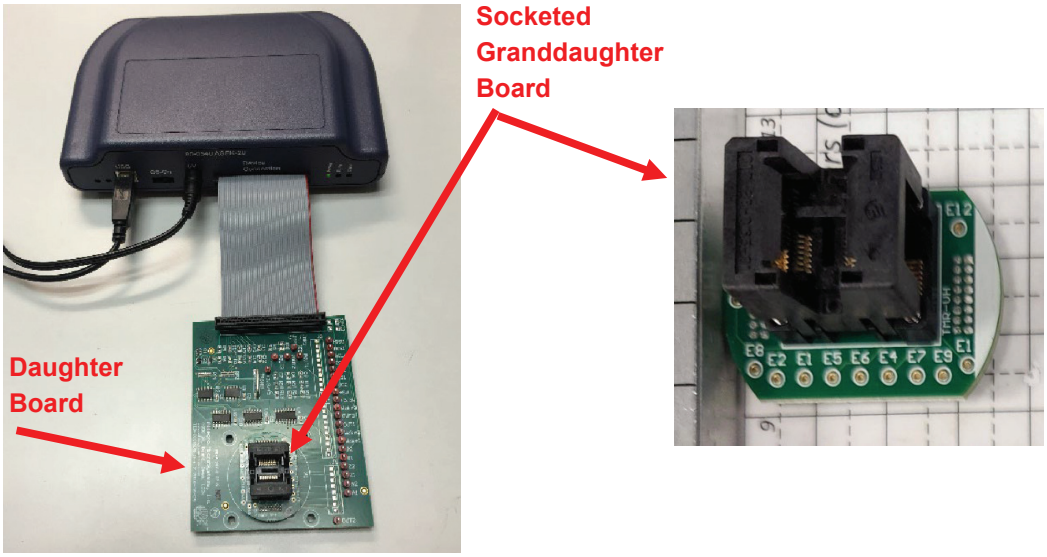

Figure 3: Setup of A33110 (A33115) Programming Subkit

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SCHEMATICS

A33110 (A33115) Programming Subkit

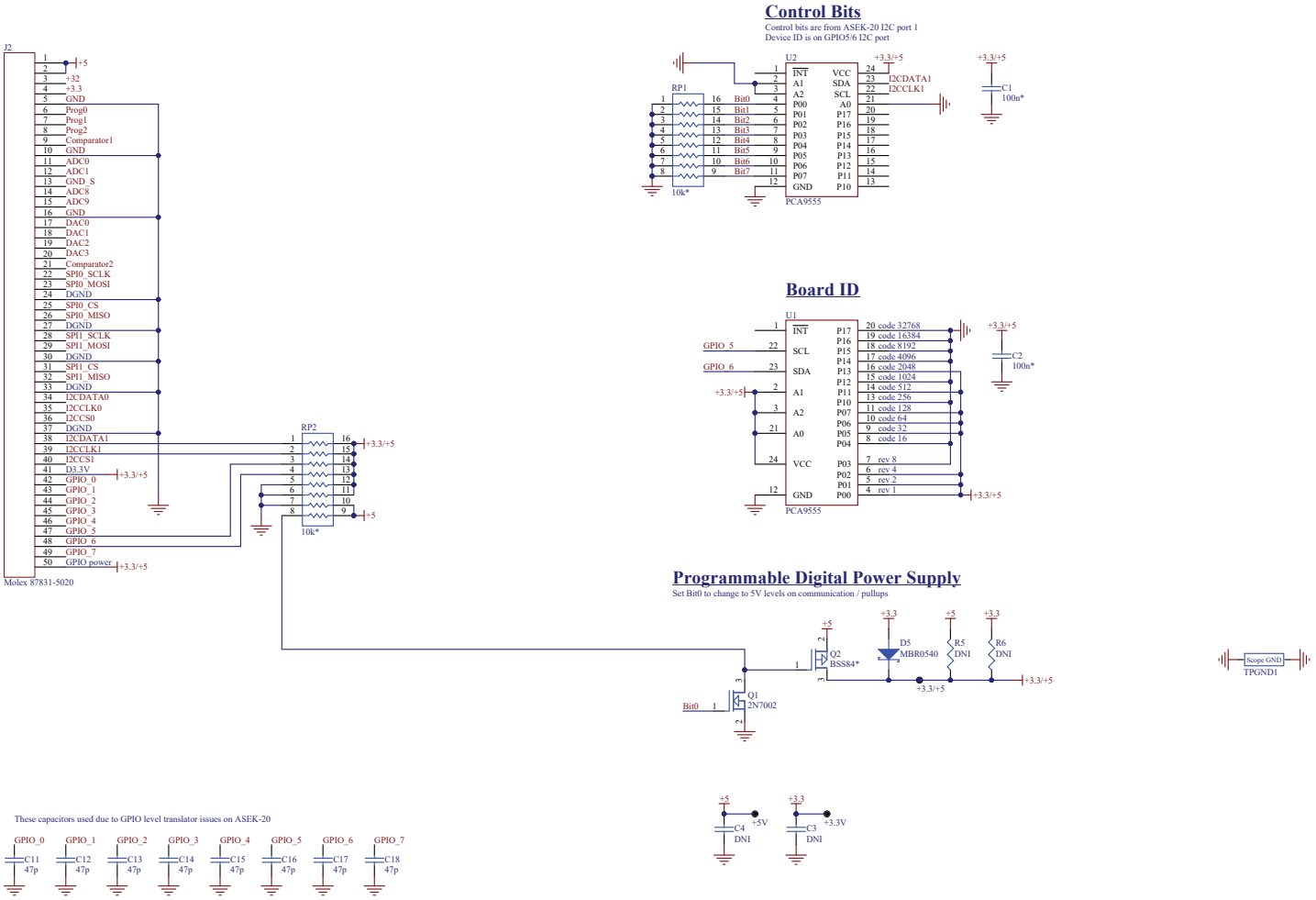

Figure 4: A33110 (A33115) Daughter Board (1 of 2)

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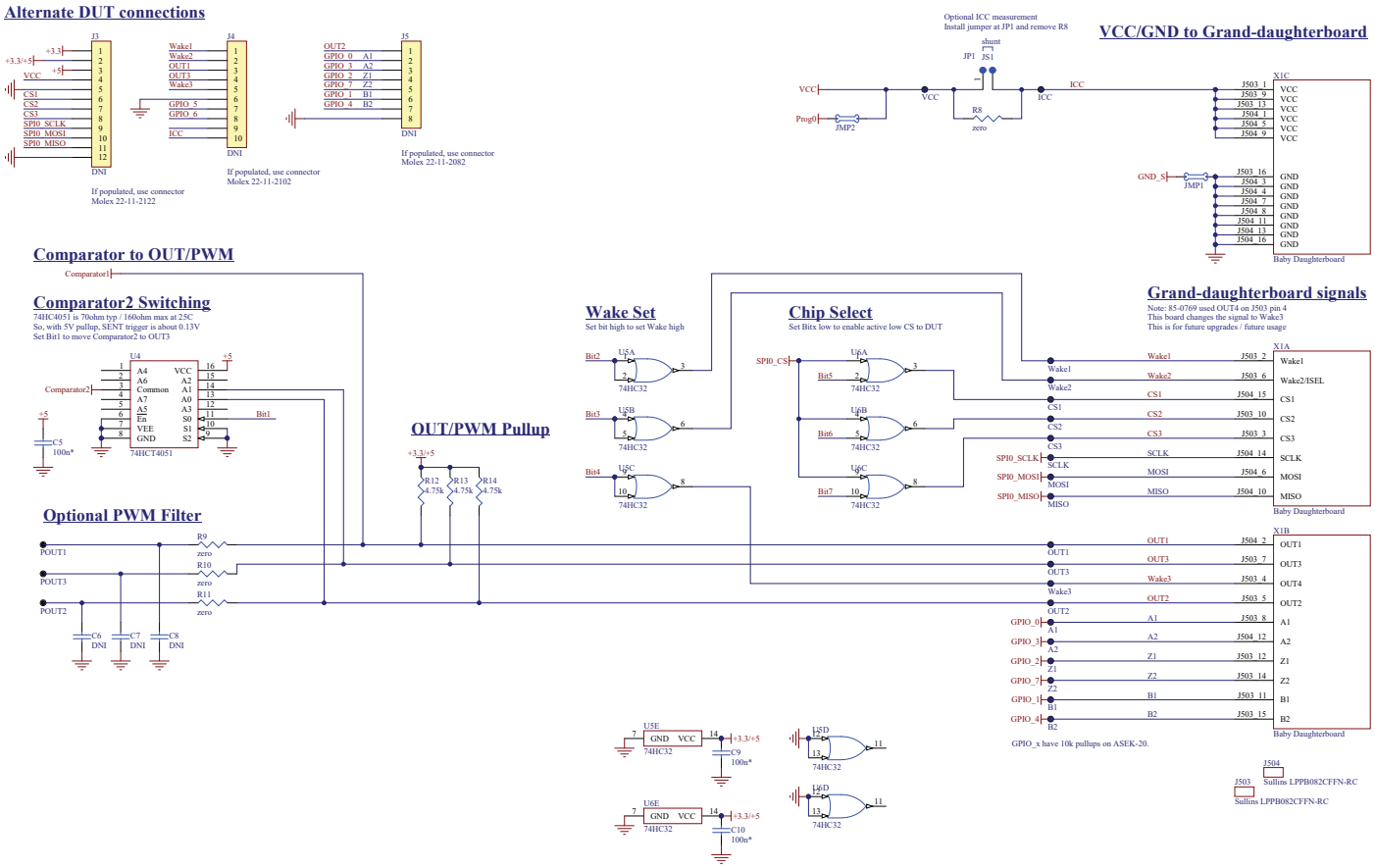

Figure 5: A33110 (A33115) Daughter Board (2 of 2)

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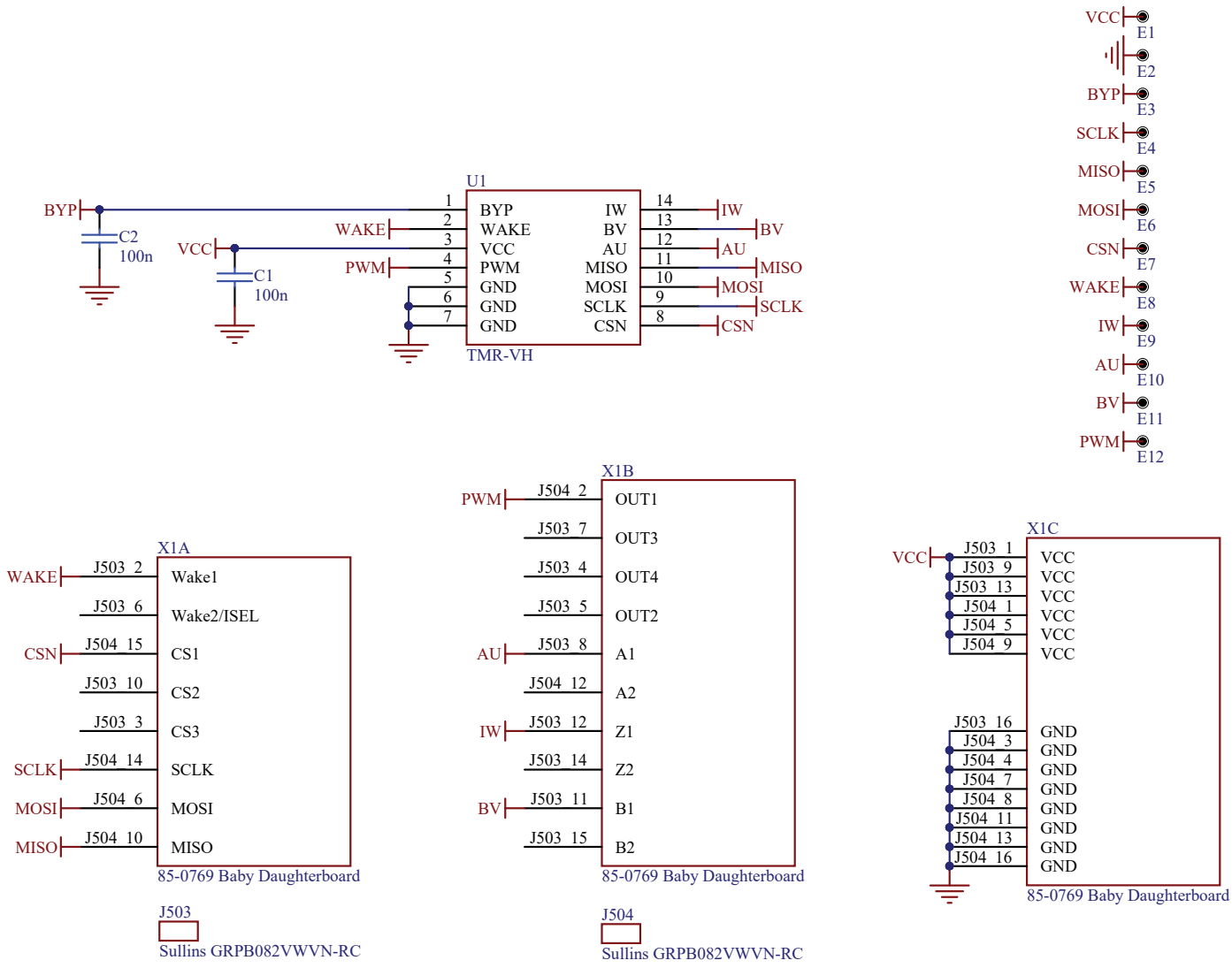

Figure 6: A33110 (A33115) Socketed Granddaughter Board, Single Die

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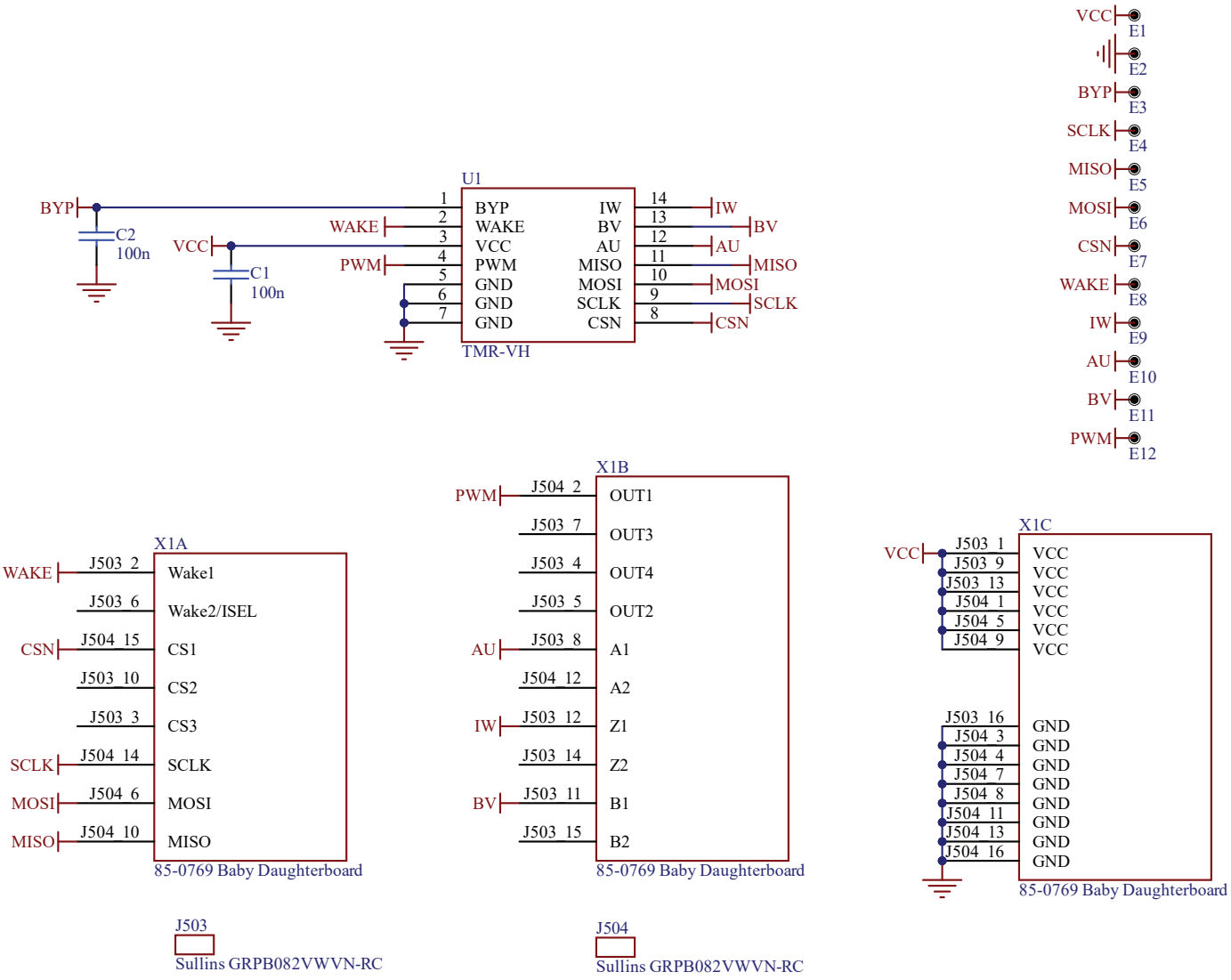

Figure 7: A33110 (A33115) Surface-Mount Granddaughter Board, Single Die

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LAYOUT

ASEK-20 Evaluation Kit

For the layout of the ASEK-20 evaluation kit, refer to the ASEK-20-T-KIT quick start user guide available for download from the Allegro software portal (registration required) at:
https://registration.allegromicro.com/downloads/ASEK-20%2FpartSupportFile%2FUM_ASEK-20-Quick-Guide_GS_FINAL_R3-V11.pdf

A33110 (A33115) Programming Subkit

The A33110 (A33115) programming subkit comprises a daughter board, a socketed granddaughter board, and a surface-mount granddaughter board. The layout of each board is shown in Figure 8 through Figure 11, respectively.

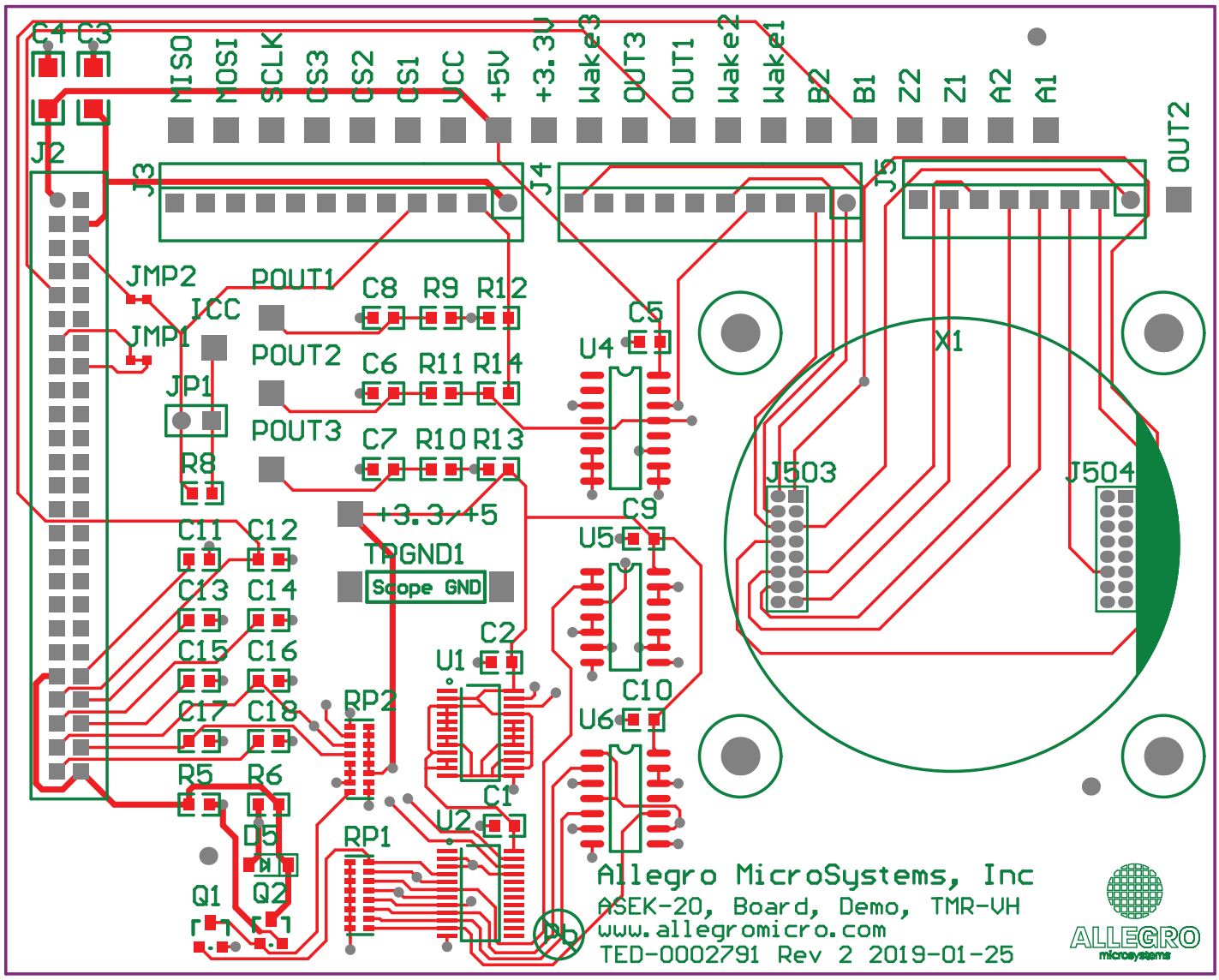

Figure 8: A33110 (A33115) Daughter Board (1 of 2)

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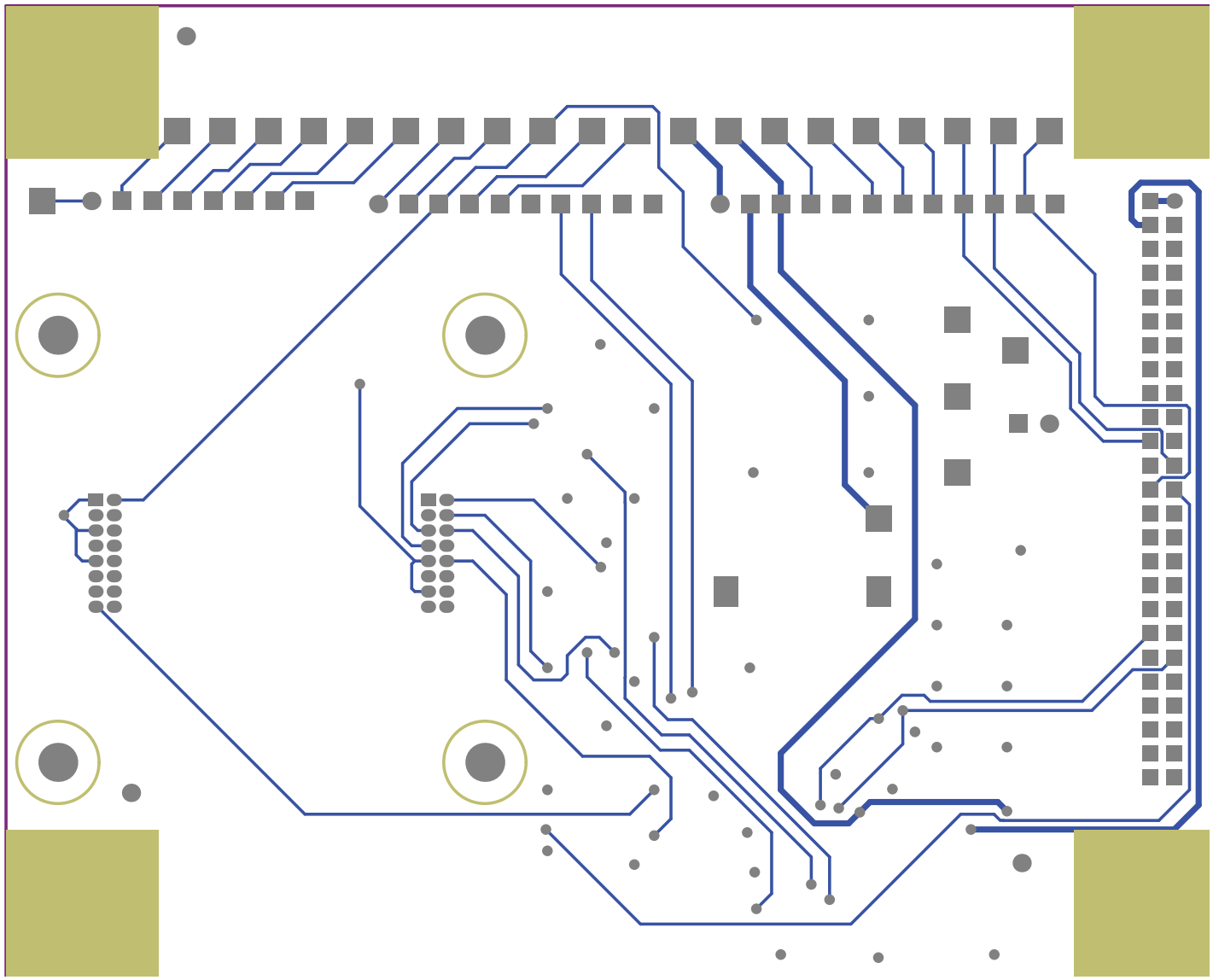

Figure 9: A33110 (A33115) Daughter Board (2 of 2)

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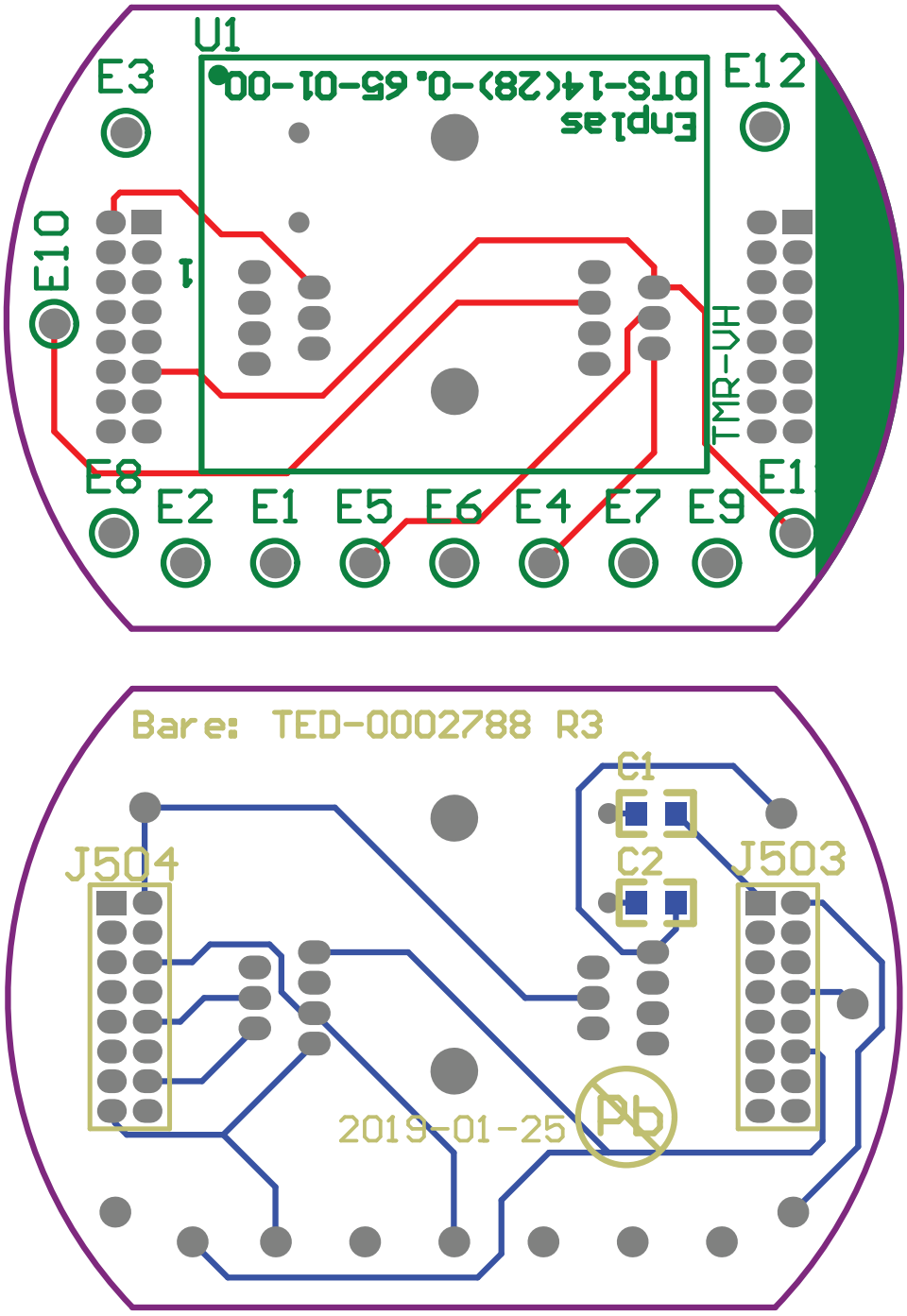

Figure 10: A33110 (A33115) Socketed Granddaughter Board, Single Die

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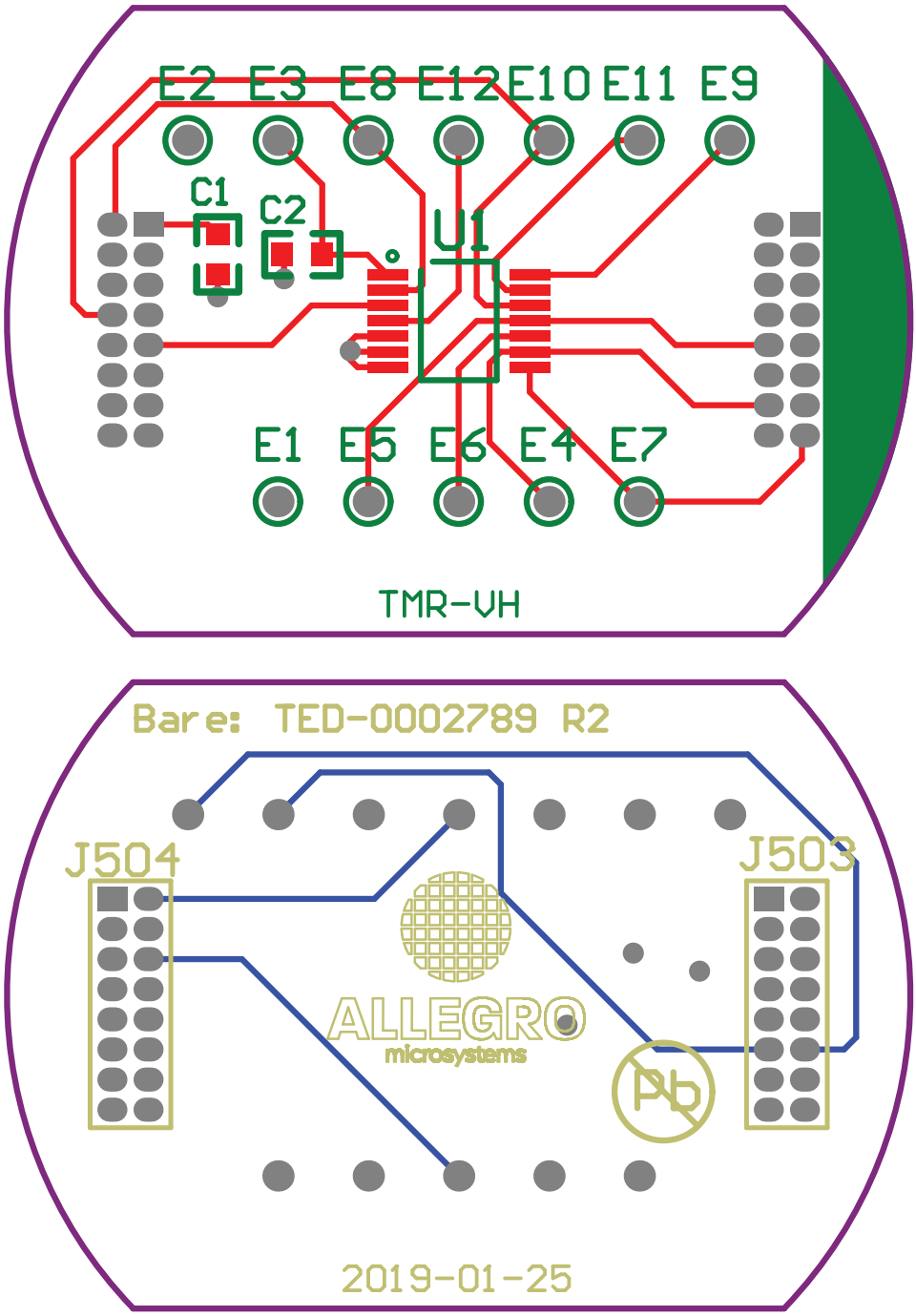

Figure 11: A33110 (A33115) Surface-Mount Granddaughter Board, Single Die

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BILL OF MATERIALS

ASEK-20 Evaluation Kit

For the ASEK-20 evaluation kit bill of materials, refer to the ASEK-20-T-KIT quick-start user guide available for download from the Allegro software portal (registration required) at:

https://registration.allegromicro.com/downloads/ASEK-20%2FpartSupportFile%2FUM_ASEK-20-Quick-Guide_GS_FINAL_R3-V11.pdf

A33110 (A33115) Programming Subkit (For Use with ASEK-20 Evaluation Kit)

The ASEK33110/A33115 programming subkit comprises a daughter board, a socketed granddaughter board, and a surface-mount granddaughter board, as shown in Table 2. The bill of materials for each board is detailed in Table 3 through Table 5.

Table 2: A33110 (A33115) Programming Subkit

Item	Qty	Description	Manufacturer	Part Number
1	1	ASEK-20, Board, Demo, DChan Angle 1 (see Table 3)	Allegro	TED-0002791
2	1	ASEK TMR-VH, Board, Demo, Granddaughter Board, TSSOP14, Socket (see Table 4)	Allegro	TED-0002788
3	1	ASEK TMR-VH, Board, Demo, Granddaughter Board, TSSOP14 (see Table 5)	Allegro	TED-0002789

Table 3: A33110 (A33115) Daughter Board [1]

Item	Qty	Description	Reference	Manufacturer	P/N
1	8	capacitor, 0603, mono, C0G, 50 V, 47 pF	C11, C12, C13, C14, C15, C16, C17, C18	AVX	06035A470JAT2A
2	5	capacitor, 0603, mono, X7R, 25 V, 100 nF	C1, C2, C5, C9, C10	Kemet	C0603C104K3RACTU
3	11	do not install	C3, C4, C6, C7, C8, J3, J4, J5, JP1, R5, R6		
4	3	resistor, 0603, 100 mW, thick film, 1%, 4.75 kΩ	R12, R13, R14	Panasonic	ERJ-3EKF4751V
5	4	jumper, 0603, 0 Ω jumper	R8, R9, R10, R11	Panasonic	ERJ-3GEY0R00V
6	2	resistor array, SMT, 8 isolated, 10 kΩ	RP1, RP2	CTS	742C163103JP
7	1	diode, sod-123, MBR0540	D5	Micro Semi	MBR0540-TP
8	1	transistor, sot-23, NFET, 2N7002	Q1	Fairchild	2N7002
9	1	transistor, sot-23, PFET, BSS84	Q2	Fairchild	BSS84
10	2	IC, TSSOP-24, I2C buss extender	U1, U2	TI	PCA9555PWR
11	2	IC, SO-14, quad OR	U5, U6	Fairchild	MM74HC32M
12	1	IC, SOIC-16, MUX/DEMUX 8X1	U4	NXP	74HCT4051D,118
13	1	connector, through, straight, gold plating, 50 circuit, 2 mm × 2 mm	J2	Molex	87831-5020
14	2	connector, through, 0.05-inch pitch, dual row, gold, 16 pins	J503, J504	Sullins	LPPB082CFFN-RC
15	4	rubber feet, 3M SJ-5518 (black), 64 per measure	RB1, RB2, RB3, RB4	3M	SJ-5518(BLACK)
16	25	testpoint, through, compact, for 62 mil PCB, any color	+3.3/+5, +3.3V, +5V, A1, A2, B1, B2, CS1, CS2, CS3, MISO, MOSI, OUT1, OUT2, OUT3, POUT1, POUT2, POUT3, SCLK, VCC, Wake1, Wake2, Wake3, Z1, Z2	Keystone	5005
17	1	testpoint, through, compact, for 62 mil PCB, red	ICC	Keystone	5005
18	1	jumper, through, used as scope gnd, bend from 18g wire, install 0.25 inches above PCB	TPGND1		
19	1	PCB [2]	PCB		

[1] All components are RoHS compliant. Unless otherwise noted, the component listed may be replaced with another component that matches the description provided.

[2] This component shall not be replaced with another component.

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Table 4: A33110 (A33115) Socketed Granddaughter Board, Single Die [1]

Item	Qty	Description	Designator	Manufacturer	Part Number
1	1	socket, through-hole, TSSOP-14	U1	Enplas	OTS-14(28)-0.65-01
2	2	capacitor, 0603, mono, X7R, 50 V, 100 nF	C1, C2	AVX	06035C104K4T2A
3	2	connector, through, 0.05-inch pitch, dual row, gold, 16 pins	J503, J504	Sullins	GRPB082VWVN-RC
4	1	PCB [2]	PCB1		

[1] Unless noted otherwise, the component listed may be replaced with another component that matches the description provided.
[2] This component shall not be replaced with another component.

Table 5: A33110 (A33115) Surface-Mount Granddaughter Board, Single Die [1]

Item	Qty	Description	Designator	Manufacturer	Part Number	Digikey
1	1	do not install	U1	Allegro		
2	2	capacitor, 0603, mono, X7R, 50 V, 100 nF	C1, C2	AVX	06035C104K4T2A	478-5309-1-ND
3	2	connector, through, 0.05-inch pitch, dual row, gold, 16 pins	J503, J504	Sullins	GRPB082VWVN-RC	S9015E-08-ND
4	1	PCB [2]	PCB1			

[1] Unless noted otherwise, the component listed may be replaced with another component that matches the description provided.
[2] This component shall not be replaced with another component.

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RELATED LINKS

- The quick-start user guide for the ASEK-20-T-KIT and software are available for download from the Allegro software portal (registration required) at:
  https://registration.allegromicro.com/downloads/ASEK-20%2FpartSupportFile%2FUM_ASEK-20-Quick-Guide_GS_FINAL_R3-V11.pdf
- The datasheet and other resources for the A33110 precision TMR angle sensor with integrated diagnostics are available for download from the A33110 product page at:
  https://www.allegromicro.com/en/products/sense/linear-and-angular-position/motor-position-sensors-2d/a33110
- The datasheet and other resources for the A33115 precision TMR angle sensor with integrated diagnostics and turns counter is available for download from the A33115 product page at:
  https://www.allegromicro.com/en/products/sense/linear-and-angular-position/motor-position-sensors-2d/a33115

APPLICATION SUPPORT

For applications support, visit https://www.allegromicro.com/en/about-allegro/contact-us/technical-assistance and navigate to the appropriate region.

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Revision History

Number	Date	Description
–	August 26, 2025	Initial release

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