



Bill of Materials for the STR-CURRENT-SENSE-GEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1 C3 C5 C7 C9 C11	6	CAP CER 10000PF 50V X7R 0402	10nF	50V	0402	Murata	GCM155R71H103KA55D	Yes	Yes
C2 C4 C6 C8 C10 C12 C13 C14 C15 C16 C23 C30 C31 C34 C41 C43 C44 C46 C47 C51 C53 C54 C56 C61 C63 C67 C73 C75 C76 C77 C78 C83 C84	33	CAP CER 1UF 16V X5R 0402	1uF	16V	0402	Murata	GRM155R61C105KA12	Yes	Yes
C17	1	CAP CER 0.022UF 50V X7R 0402	0.022uF	50V	0402	Murata	GRM155R71H223KA12J	Yes	Yes
C18	1	180 uF Aluminum Electrolytic Capacitor, 50V	180uF	50V	Radial 10x5mm	Wurth	860020675019	Yes	Yes
C19 C29 C45 C50 C57 C65 C72 C80	8	CAP CER 0.1UF 50V X7R 0402	0.1uF	50V	0402	Murata	GCM155R71H104ME02	Yes	Yes
C20 C28	0	DNI	DNI	DNI	DNI			Yes	Yes
C21 C22 C24 C25 C26 C27 C36 C40 C52 C58 C81 C82	0	DNI	DNI	DNI	DNI			Yes	Yes
C32 C49 C62 C79	4	CAP CER 1UF 25V X7R 0603	1uF	25V	0603	Murata	GCM188R71E105KA64	Yes	Yes
C33 C35 C38	3	CAP CER 22UF 10V X5R 0603	22uF	10V	0603	Murata	GRM188R61A226ME15	Yes	Yes
C37 C42	2	CAP CER 10UF 35V X5R 0603	10uF	35V	0603	Murata	GRM188R6YA106MA73	Yes	Yes
C39	1	CAP CER 10UF 50V X7S 1210	10uF	50V	1210	Murata	GCM32EC71H106KA03K	Yes	Yes
C48 C55 C60 C64 C66 C74	6	CAP CER 4.7UF 6.3V X5R 0402	4.7uF	6.3V	0402	Murata	GRM155R60J475ME47D	Yes	Yes
C59	1	CAP CER 10UF 25V X5R 0603	10uF	25V	0603	Murata	GRM188R61E106MA73	Yes	Yes
C68 C71	2	CAP CER 12PF 50V C0G/NP0 0402	12pF	50V	0402	Murata	GJM1555C1H120JB01D	Yes	Yes
C69 C70	2	CAP CER 7.5PF 50V C0G/NP0 0402	7.5pF	50V	0402	Murata	GJM1555C1H7R5CB01D	Yes	Yes
D1 D2 D3 D4 D5 D6 D7 D8 D37	9	Green LED	150060GS75000	3.2V	0603	Wurth Elektronik	150060GS75000	Yes	Yes
D9 D24 D26 D32	4	SOD-323 Schottky Diode	BAT54	30V	SOD-323	ON Semiconductor	BAT54HT1G	No	Yes
D10 D11 D15 D16 D19 D20 D25 D27 D31 D33	0	DNI	DNI		DNI			Yes	Yes
D12 D21 D28 D35 D42	5	DIODE ZENER 15V 250MW SOD923	NZ9F15V	15V	SOD-923	ON Semiconductor	NZ9F15VT5G	No	Yes
D13 D14 D17 D18 D23 D29 D30 D38 D39	0	DNI			DNI			Yes	Yes
D22	0	DNI	DNI		DNI			Yes	Yes
D34	1	Yellow LED	150060YS75000	.2V	0603	Wurth Elektronik	150060YS75000	Yes	Yes
D36	1	Blue LED	150060BS75000	3.2V	0603	Wurth Elektronik	150060BS75000	Yes	Yes
D40	1	Red LED	150060RS75000	2V	0603	Wurth Elektronik	150060RS75000	Yes	Yes
D41	1	ESD Protection Diodes	ESD7L	5.5V	SOT-723	ON Semiconductor	ESD7L5.0	No	Yes
D43 D44	2	Schottky Barrier Diode, 2.0 A, 20 V	NSR20F20NX	20V	DSN2 0603	ON Semiconductor	NSR20F20NX	No	Yes
FB1	1	Ferrite bead 220 Ohm 0805 1LN	220@100M		0805	Wurth Elektronik	782853221	Yes	Yes
J1 J4 J7 J8 J9 J12 J13 J14 J16 J17	10	Standard 1x2pin 100mil Pitch Header	613 002 111 21		1x2pin 100mil	Wurth Elektronik	613 002 111 21	Yes	Yes
J2 J3 J15 J18	4	PLASTIC HEXAGON NUT M3	709940300		M3 Nut	Wurth	709940300	Yes	Yes
J5 J6 J10 J11	4	Rectangle power pad 200x300 mils	DNI		200x300mil			Yes	Yes
J19 J20 J27 J28	4	PLASTIC SPACER STUD METRIC THREAD M3 15MM F-M	971150365		M3 15MM Standoff	Wurth	971150365	Yes	Yes
J21 J22	2	Red Insulated 4mm socket for banana plugs	571-0500		Red Banana Rec	Deltron	571-0500	Yes	Yes

J23 J24	2	Black Insulated 4mm socket for banana plugs	571-0100		Black Banana Rec	Deltron	571-0100	Yes	Yes
J25	1	Standard Arm Cortex Debug Connector	FTSH-105-01-F-DV-K		2x5pin 50mil Cortex Debug	Samtec	FTSH-105-01-F-DV-K	Yes	Yes
J26	1	Mini USB1/2 Type-B Connector	65100516121		Mini USB1/2 B	Würth Elektronik	65100516121	Yes	Yes
JP1	1	Surface Mount High Current Jumper Chip Resistor	6.5A		0402	Stackpole Electronics	HCJ0402ZT0R00	Yes	Yes
Q1 Q2 Q3 Q4 Q5 Q6	6	MOSFET P-CH 30V 21.1A POWER56	FDMS6681Z	-30V	SO8-FL DFN-5	ON Semiconductor	FDMS6681Z	No	Yes
Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q17 Q20 Q23 Q24 Q30 Q31 Q32 Q37 Q42 Q43	19	MOSFET P-CH 60V 1.8A CPH3	CPH3351	60V	SOT23-3	ON Semiconductor	CPH3351-TL-W	No	Yes
Q16 Q22	2	PNP Bipolar Transistor	MMBT3906L		SOT-23-3	ON Semiconductor	MMBT3906L	No	Yes
Q18 Q19 Q21 Q25 Q26 Q33 Q34 Q35 Q36 Q38 Q40 Q41 Q44 Q45 Q46	15	Small Signal MOSFET 60V 340mA 2.5 Ohm Single N-Channel SOT-323	2N7002W	60V	SOT-323	ON Semiconductor	2N7002W	No	Yes
Q27 Q28 Q39	3	Single N-Channel, 40V, 2.0mOhm, 150A	NTMFS5C423NL	40V	SO8-FL DFN-5	ON Semiconductor	NTMFS5C423NLT1G	No	Yes
Q29	1	Small Signal MOSFET 60V 380mA 1.6 Ohm Single N-Channel SOT-23	2N7002K	60V	SOT-23	ON Semiconductor	2N7002K	No	Yes
R1	1	4 Terminal Sense Resistor 0.002 Ohm 1% 3W	0.002		3637	Vishay Dale	WSL36372L000FEA	Yes	Yes
R2 R3 R5 R6 R8 R9 R11 R12 R14 R15 R17 R18	12	RES SMD 4.75 OHM 1% 1/16W 0402	4.75		0402	Vishay Dale	CRCW04024R75FKED	Yes	Yes
R4	1	4 Terminal Sense Resistor 0.001 Ohm 1% 3W	0.001		3637	Vishay Dale	WSL36371L000FEA	Yes	Yes
R7	1	RES SMD 30m OHM 0.5% 1/2W 1206	30m		1206	Ohmite	LVK12R030DER	Yes	Yes
R10	1	RES SMD 150m OHM 0.5% 1/4W 0805	150m		0805	Ohmite	KDV08DR150ET	Yes	Yes
R13	1	RES SMD 3 OHM 0.5% 1/8W 0805	3		0805	Yageo	RT0805DRD073RL	Yes	Yes
R16	1	RES SMD 100 OHM 0.1% 1/4W 1206	100		1206	Panasonic	ERA-8AEB101V	Yes	Yes
R19 R20	2	RES SMD 5K OHM 0.1% 1/20W 0402	5K		0402	Vishay Dale	PNM0402E5001BST1	Yes	Yes
R21 R28	2	RES SMD 2M OHM 0.1% 1/10W 0805	2M		0805	TE Connectivity	CPF0805B2M0E1	Yes	Yes
R22	1	RES SMD 13.7K OHM 0.1% 1/16W 0402	13.7K		0402	Panasonic	ERA-2AEB1372X	Yes	Yes
R23	1	RES SMD 26.7K OHM 0.1% 1/16W 0402	26.7K		0402	Panasonic	ERA-2AEB2672X	Yes	Yes
R24 R25 R26 R27 R31 R37 R39 R44 R49 R55 R56 R59 R60 R63 R78 R79 R80 R87 R92 R96 R97 R102 R104 R106 R109 R115 R119	27	RES SMD 10K OHM 1% 1/16W 0402	10K		0402	Vishay Dale	CRCW040210K0FKED	Yes	Yes
R29 R38	2	RES SMD 10K OHM 1% 1/10W 0603	10K		0603	Vishay Dale	CRCW060310K0FKEA	Yes	Yes
R30 R40 R61	3	RES SMD 100 OHM 1% 1/10W 0603	100		0603	Vishay Dale	CRCW0603100RFKEA	Yes	Yes
R32 R42	2	RES SMD 49.9K OHM 1% 1/16W 0402	49.9K		0402	Vishay Dale	CRCW040249K9FKED	Yes	Yes
R33 R45 R52 R76 R100	5	RES SMD 2K OHM 1% 1/4W 1206	2K		1206	Vishay Dale	CRCW12062K00FKEA	Yes	Yes
R34 R41 R50 R69 R84 R99	6	RES SMD 4.99K OHM 1% 1/16W 0402	4.99K		0402	Vishay Dale	CRCW04024K99FKED	Yes	Yes
R35 R48 R57 R58 R65 R88 R89 R114 R118	9	RES SMD 1K OHM 1% 1/16W 0402	1K		0402	Vishay Dale	CRCW04021K00FKED	Yes	Yes
R36 R47 R54 R82 R108 R120 R121 R122	8	RES SMD 8.87K OHM 1% 1/10W 0603	8.87K		0603	Vishay Dale	CRCW06038K87FKEA	Yes	Yes
R43 R94 R111	3	RES SMD 0 OHM JUMPER 1/16W 0402	0		0402	Vishay Dale	CRCW04020000Z0ED	Yes	Yes
R46 R93 R110	0	DNI	DNI		DNI			Yes	Yes
R51 R68	2	RES SMD 100K OHM 1% 1/16W 0402	100K		0402	Vishay Dale	CRCW0402100KFKED	Yes	Yes
R53	1	RES SMD 499 OHM 1% 1/4W 1206	499		1206	Vishay Dale	CRCW1206499RFKEA	Yes	Yes
R62 R64 R72 R73 R83 R90 R116	7	RES SMD 100 OHM 1% 1/16W 0402	100		0402	Vishay Dale	CRCW0402100RFKED	Yes	Yes
R66	1	RES SMD 7.5K OHM 0.1% 1/16W 0402	7.5K		0402	Panasonic	ERA-2AEB752X	Yes	Yes
R67	1	RES SMD 82.5K OHM 0.1% 1/16W 0402	82.5K		0402	Panasonic	ERA-2AEB8252X	Yes	Yes
R70 R71 R74 R75	4	RES SMD 100m OHM 1% 3W 2512	100m		2512	Bourns Inc.	CRA2512-FZ-R100ELF	Yes	Yes
R77	1	RES SMD 681 OHM 1% 1/16W 0402	681		0402	Vishay Dale	CRCW0402681RFKED	Yes	Yes

R81	1	RES SMD 9.31K OHM 1% 1/16W 0402	9.31K		0402	Vishay Dale	CRCW04029K31FKED	Yes	Yes
R85	1	RES SMD 2.32K OHM 1% 1/16W 0402	2.32K		0402	Vishay Dale	CRCW04022K32FKED	Yes	Yes
R86	1	RES SMD 11K OHM 1% 1/16W 0402	11K		0402	Vishay Dale	CRCW040211K0FKED	Yes	Yes
R91 R113	2	RES SMD 2K OHM 1% 1/16W 0402	2K		0402	Vishay Dale	CRCW04022K00FKED	Yes	Yes
R95	1	RES SMD 10K OHM 0.1% 1/8W 0805	10K		0805	Panasonic	ERA-6AEB103V	Yes	Yes
R98	1	RES SMD 10 OHM 0.1% 1/4W 1206	10		1206	Bourns Inc.	CRT1206-BY-10R0ELF	Yes	Yes
R101	1	RES SMD 1.5K OHM 0.1% 1/16W 0402	1.5K		0402	Panasonic	ERA-2AEB152X	Yes	Yes
R103	1	RES SMD 11.5K OHM 0.1% 1/16W 0402	11.5K		0402	Panasonic	ERA-2AEB1152X	Yes	Yes
R105 R117	2	RES SMD 20K OHM 0.1% 1/16W 0402	20K		0402	Panasonic	ERA-2AEB203X	Yes	Yes
R107 R112	2	RES SMD 10K OHM 0.1% 1/16W 0402	10K		0402	Panasonic	ERA-2AEB103X	Yes	Yes
SW1	1	SWITCH TACTILE SPST-NO 0.05A 12V	434153017835	12V	MOM1 SMD	Würth Elektronik	434153017835	Yes	Yes
TP1 TP2 TP9 TP10	4	PC TEST POINT COMPACT	5016		Test Loop	Keystone	5016	Yes	Yes
TP3 TP4 TP5 TP6 TP7 TP8 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24 TP25 TP26 TP27 TP28 TP29 TP30 TP31 TP32 TP33 TP34 TP35 TP36	32	Passive Probe Tip Tektronix P5050B (Black) Tip	DNI	<Voltage>	0.9mm			Yes	Yes
TP37 TP38 TP39 TP40 TP42	5	Surface Mount 1mm Circle Test Point	DNI		1mm Circle			Yes	Yes
TP41 TP43 TP44 TP45 TP46	5	Passive Probe Tip Tektronix P5050 (Tan) Tip	DNI		0.75mm			Yes	Yes
U1	1	Current-Shunt Monitor, Voltage Output, Bi-Directional Zero-Drift, Gain = 50V/V	NCS213R		SC-70-6	ON Semiconductor	NCS213RSQT2G	No	Yes
U2 U3	2	Current-Shunt Monitor, Voltage Output, Bi-Directional Zero-Drift, Gain = 100V/V	NCS214R		SC-70-6	ON Semiconductor	NCS214RSQT2G	No	Yes
U23 U8	2	Dual Open Drain Output Comparator	NCS3402		SOIC-8	ON Semiconductor	NCS3402DR2G	No	Yes
U4	1	Current-Shunt Monitor, Voltage Output, Bi-Directional Zero-Drift, Gain = 200V/V	NCS210R		SC-70-6	ON Semiconductor	NCS210RSQT2G	No	Yes
U5	1	Current-Shunt Monitor, Voltage Output, Bi-Directional Zero-Drift, Gain = 500V/V	NCS211R		SC-70-6	ON Semiconductor	NCS211RSQT2G	No	Yes
U6	1	Low Power, Zero-Drift Operational Amplifier	NCS333A		SOT23-5	ON Semiconductor	NCS333ASN2T1G	No	Yes
U7 U9 U12 U17 U20 U28	6	TinyLogic NAND Gate	NC7SZ00	1.65-5.5	SOT-23	ON Semiconductor	NC7SZ00M5X	No	Yes
U10	1	Switched Capacitor Voltage Inverter with Shutdown	MAX1720		TSOP-6	ON Semiconductor	MAX1720EUTG	No	Yes
U11	1	100mA 5Vout Charge Pump Regulated 1MHz DC/DC Converter	FAN5602	5V	MLP-8 3x3	ON Semiconductor	FAN5602MP5X	No	Yes
U13 U14 U22 U26	4	Low-Voltage SPST Analog Switch	FSA1157		SC70	ON Semiconductor	FSA1157P6X	No	Yes
U15 U16 U25 U27	4	3MHz, 125uA Low Power Op Amp	NCS20061		TSOP-5	ON Semiconductor	NCS20061SN2T1G	No	Yes
U18	1	7MHz, High Slew Rate, Low Noise, Rail-to-Rail Output, Single Op-Amp	NCS2003		SOT23-5	ON Semiconductor	NCS2003SN2T1G	No	Yes
U19	1	EFM32 Giant Gecko 32-bit Microcontroller	EFM32GG380F1024		QFP100 14x14	Silicon Labs	EFM32GG380F1024G-E-QFP100R	Yes	Yes
U21	1	USB to BASIC UART IC	FT230X		QFN16 4x4	FTDI	FT230XQ-R	Yes	Yes
U24	1	3.3V Voltage Regulator, LDO, Ultra Low Noise, Ultra Low Iq, 500 mA	NCP705		WDFN6	ON Semiconductor	NCP705MT33TCG	No	Yes
Y1	1	Crystals 32.768 kHz 12.5 pF +/-20 PPM -40/+85C	32.768 kHz		2 pin w/ shell	Micro Crystal	MS3V-T1R-32.768kHz-12.5pF-20PPM-TA-QC-Au	Yes	Yes
Y2	1	CRYSTAL 48.0000MHZ 8PF SMD	48MHz		5x3.2mm	NDK	NX5032GA-48.000000MHZ-LN-CD-1	Yes	Yes