6 Bill of Materials

Table 4. Bill of Materials

bq24600 -001	bq24620 -002	bq24640 -003	RefDes	Value	Description	Size	Part Number	MFR
1	0	0	U1	BQ24600RVA	IC, 28V Synchronous Switchmode Charge Management	QFN16[RVA]	BQ24600RVA	TI
0	1	0	U1	BQ24620RVA	IC, 28V Synchronous Switchmode Charge Management	QFN16[RVA]	BQ24620RVA	TI
0	0	1	U1	BQ24640RVA	IC, 28V Synchronous Switchmode Charge Management	QFN16[RVA]	BQ24640RVA	TI
6	6	6	C1,C12,C14,C15 ,C17,C22	0.1uF	Capacitor, Ceramic, 50V, X7R, 10%	603	C1608X7R1H104K	TDK
2	2	2	C23, C24	22nF	Capacitor, Ceramic, 50V, X7R, 10%	603	Std	TDK
1	1	1	C21	22p	Capacitor, Ceramic, 50V, X7R, 10%	603	Std	TDK
0	0	0	C16	DNP	Capacitor, Ceramic, 50V, X7R, 10%	603	Std	TDK
0	0	0	C25	DNP	Capacitor, Ceramic, 50V, X7R, 10%	603	Std	TDK
5	5	5	C5,C13,C18,C19 ,C20	1.0uF	Capacitor, Ceramic, 50V, X7R, 10%	1206	C3216X7R1H105K	TDK
1	1	1	C2	2.2uF	Capacitor, Ceramic, 50V, X7R, 10%	1206	C3216X7R1H225K	TDK
0	0	0	C8,C9	DNP	Capacitor, Ceramic, 50V, X5R, 20%	1210	Std	Vishay
6	6	6	C3,C4,C6,C7,C1 0,C11	10uF	Capacitor, Ceramic, 50V, X5S, 20%	1812	UMK432C106MM-T	Taiyo Yuden
2	2	2	D4,D10	1N4148W	Diode, Signal, 300-mA, 75-V, 350-mW	SOD-123	1N4148W	Diodes
3	3	3	D9,D13,D14	BZT52C15	Diode, Zener, Planar Power, 15V	SOD-123	BZT52C15	Diodes
2	2	2	D11,D12	BZX84B15-V	Diode, Zener, 15-V, 300-mW	SOT-23	BZX84B15-V	Diodes
0	0	0	D8	DNP	Diode, Zener, xx-V, 300-mW	SOT-23	BZX84Bxx-x	Diodes
0	0	0	D2	DNP	Diode, Schottky, 1A, 30V	SMB	MBRS130TR	IR
2	2	2	D5,D7	Green	Diode, LED, Green, 2.1V, 20mA, 6mcd	603	LTST-C190GKT	Lite On
1	1	1	D6	Red	Diode, LED, Red, 1.8V, 20mA, 20mcd	603	LTST-C190CKT	Lite On
2	2	2	D1,D3	ZLLS350	Diode, Schottky, 1.16A, 40-V	SOD-523	ZLLS350	Zetex
0	1	0	L1	8.2uH	Inductor, IHLP5050EZERxxxM01	0.51 x 0.52 inch	IHLP5050EZERxxxM01	Vishay
1	0	0	L1	3.3uH	Inductor, IHLP5050EZERxxxM01	0.51 x 0.52 inch	IHLP5050EZERxxxM01	Vishay
0	0	1	L1	6.8uH	Inductor, IHLP5050EZERxxxM01	0.51 x 0.52 inch	IHLP5050EZERxxxM01	Vishay
2	2	2	JP4,JP5	PEC02SAAN	Header, Male 2-pin, 100mil spacing,	0.100 inch x 2	PEC02SAAN	Sullins
3	3	3	JP1–JP3	PEC03SAAN	Header, Male 3-pin, 100mil spacing,	0.100 inch x 3	PEC03SAAN	Sullins
5	5	5	SJ1–SJ5	929950-00	Shorting jumpers, 2-pin, 100mil spacing,		929950-00	3M/ESD
2	2	2	R8,R13	0	Resistor, Chip, 1/16W, 5%	402	Std	Std

Table 4. Bill of Materials (continued)

bq24600 -001	bq24620 -002	bq24640 -003	RefDes	Value	Description	Size	Part Number	MFR
1	0	1	R10	9.31K	Resistor, Chip, 1/16W, 1%	402	Std	Std
0	1	0	R10	2.2K	Resistor, Chip, 1/16W, 1%	402	Std	Std
1	0	1	R11	430K	Resistor, Chip, 1/16W, 1%	402	Std	Std
0	1	0	R11	6.8K	Resistor, Chip, 1/16W, 1%	402	Std	Std
1	1	1	R1	100	Resistor, Chip, 1/16W, 1%	402	Std	Std
1	1	1	R5	100K	Resistor, Chip, 1/16W, 1%	402	Std	Std
1	1	1	R4	200K	Resistor, Chip, 1/16W, 1%	402	Std	Std
1	1	1	R6	499k	Resistor, Chip, 1/16W, 1%	402	Std	Std
0	0	0	R26	DNP	Resistor, Chip, 1/16W, 1%	402	Std	Std
1	1	1	R28	1k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	1	1	R30	4.7	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	1	1	R27	10	Resistor, Chip, 1/16W, 1%	603	Std	Std
3	3	3	R22–R24	2.21k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	1	1	R18	22.1K	Resistor, Chip, 1/16W, 1%	603	Std	Vishay
1	1	1	R12	100k	Resistor, Chip, 1/16W, 1%	603	Std	Std
2	2	2	R7,R25	200k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	1	1	R9	499k	Resistor, Chip, 1/16W, 1%	603	Std	Std
0	0	0	R20	DNP	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	1	1	R3	2M	Resistor, Chip, 1/10W, 1%	805	Std	Std
3	3	3	R15,R16,R21	100K	Resistor, Chip, 1/10W, 1%	805	Std	Std
1	1	0	R14	909K	Resistor, Chip, 1/10W, 1%	805	Std	Std
0	0	1	R14	845K	Resistor, Chip, 1/10W, 1%	805	Std	Std
1	1	1	R29	10	Resistor, Metal Film, 1/4 watt, 5%	1206	Std	Std
2	2	2	R17,R19	3.9	Resistor, 1/2W, 5%	1210	Std	Std
1	1	1	R2	0.01	Resistor, Chip, 1/2W, 1%	2010	WSL2010R0100FEA	Vishay, Dale
2	2	2	J2,J4	ED555/3DS	Terminal Block, 3-pin, 6-A, 3.5mm	0.41 x 0.25 inch	ED555/3DS	OST
1	1	1	J5	ED1516	Terminal Block, 4 pin, 6A, 3.5mm	0.55 x 0.25 inch	ED1516	OST
1	1	1	J1	ED1609-ND	Terminal Block, 2 pin, 15A, 5.1mm	0.40 x 0.35 inch	ED1609	OST
1	1	1	J3	ED2227	Terminal Block, 4 pin, 15A, 5.1mm	0.80 x 0.35 inch	ED2227	OST
1	1	1	TP17	GND	Test Point, Black, Thru Hole Color Keyed	0.100 x 0.100 inch	5001	Keystone
0	0	0	TP1–TP4, TP6–TP8, TP12, TP13		Test Point, 0.020 Hole			

Table 4. Bill of Materials (continued)

bq24600 -001	bq24620 -002	bq24640 -003	RefDes	Value	Description	Size	Part Number	MFR
8	8	8	TP5, TP15, TP16, TP18–TP22	CHGEN,ISET,REGN ,STAT,TS,VCC,VRE F,~PG	Test Point, White, Thru Hole Color Keyed	0.100 x 0.100 inch	5002	Keystone
4	4	4	TP9–TP11,TP14	131-4244-00	Adaptor, 3.5-mm probe clip (or 131-5031-00)	0.200 inch	131-4244-00	Tektronix
1	1	1	Q7	2N7002DICT	MOSFET, N-ch, 60-V, 115-mA, 1.2-Ω	SOT23	2N7002DICT	Vishay-Liteon
1	1	1	Q6	2N7002DICT	MOSFET, N-ch, 60V, 115mA, 1.2Ω	SOT23	2N7002DICT	Vishay-Liteon
2	2	2	Q8, Q9	NDS0605	MOSFET,P-ch, -60 V, 180-mA, 5 Ω	SOT-23	NDS0605	Vishay
3	3	3	Q1–Q3	Si4401BDY	MOSFET, PChan, –40V, –8.7A, 21mΩ	PWRPAK S0-8	Si4401BDY	Vishay
1	1	1	Q4, Q5	SiR426DP	MOSFET, NChan, 40V, 30A, 12.5 mΩ	PWRPAK S0-8	SiR426DP	Vishay
4	4	4			6-32 NYL nuts	NY HN 632	H620-ND	Building Fasteners
4	4	4	ST1–ST4	4816	STANDOFF M/F HEX 6-32 NYL 0.500"	sf_thvt_325_rnd	4816	Keystone
1	1	1	PCB	HPA421	4x4.25 inch 4 layer 2oz. PCB	4x4.25 inch	PCB	

IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers (“Buyers”) who are developing systems that incorporate TI semiconductor products (also referred to herein as “components”). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer’s systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. **TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.** TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER’S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI’s terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI’s terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers’ products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers’ products and applications, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer’s safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI’s goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or “enhanced plastic” are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have ***not*** been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265