Linear Regulator
Application Information

IC Product Name	BD00GA3WEFJ
Topology	LDO Linear Regulator
Type	Voltage source

	Input	Output
1	4.5V to 14V	1.8V, 300mA *1
2	4.5V to 14V	2.5V, 300mA *1
3	4.5V to 14V	3.0V, 300mA *1
4	4.5V to 14V	3.3V, 300mA *1
5	6.9V to 14V	6.0V, 300mA *1
6	8.9V to 14V	8.0V, 300mA *1

*1 Not to exceed power dissipation.

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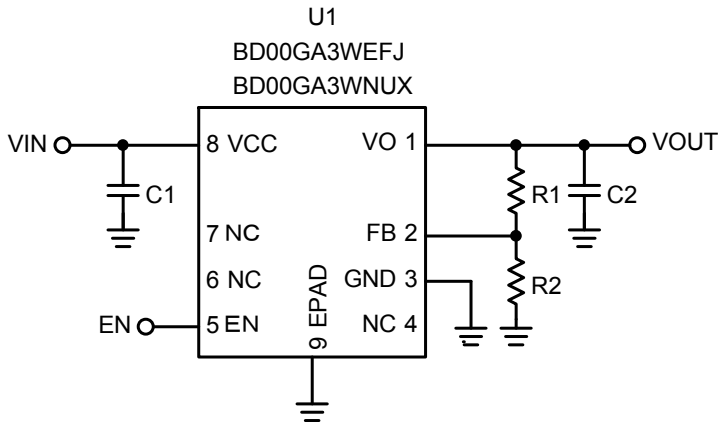
Typical Application Circuit



EN terminal setting

Terminal state	IC operation
2.4V ～ 14V	Normal operation
0V ～ 0.8V	Power down

Output voltage setting

$$V_{OUT} = \frac{R_1 + R_2}{R_2} \times 0.8\ [V]$$

Input/output voltage conditions are required to satisfy the following equations:

$$V_{OUT} = 1.5V \sim (V_{IN} - 0.9)V \quad \text{at } I_O = 300mA$$

$$(V_{IN} - 0.9) \leq 13V$$

The use of resistors with $R_1 + R_2$=1kΩ to 90kΩ recommended.

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Bill of Materials

1. V_O=1.8V (V_{IN}=4.5V to 14V)

Count	Reference Designator	Type	Value	Description	Manufacturer Part Number	Manufacturer	Configuration (mm)
1	C1	Ceramic Capacitor	2.2μF	25V, B, ±10%	GRM31MB31E225KA92	MURATA	3216
1	C2	Ceramic Capacitor	2.2μF	6.3V, B, ±10%	GRM188B30J225KE18	MURATA	1608
1	R1	Resistor	15kΩ	0.063W, 50V, 1%	MCR01MZPF1502	ROHM	1005
1	R2	Resistor	12kΩ	0.063W, 50V, 1%	MCR01MZPF1202	ROHM	1005
1	U1	IC	-	LDO Linear Regulator	BD00GA3WFEJ	ROHM	HTSOP-J8
					BD00GA3WNUX		VSON008X2030

2. V_O=2.5V (V_{IN}=4.5V to 14V)

Count	Reference Designator	Type	Value	Description	Manufacturer Part Number	Manufacturer	Configuration (mm)
1	C1	Ceramic Capacitor	2.2μF	25V, B, ±10%	GRM31MB31E225KA92	MURATA	3216
1	C2	Ceramic Capacitor	2.2μF	6.3V, B, ±10%	GRM188B30J225KE18	MURATA	1608
1	R1	Resistor	51kΩ	0.063W, 50V, 1%	MCR01MZPF5102	ROHM	1005
1	R2	Resistor	24kΩ	0.063W, 50V, 1%	MCR01MZPF2402	ROHM	1005
1	U1	IC	-	LDO Linear Regulator	BD00GA3WFEJ	ROHM	HTSOP-J8
					BD00GA3WNUX		VSON008X2030

3. V_O=3.0V (V_{IN}=4.5V to 14V)

Count	Reference Designator	Type	Value	Description	Manufacturer Part Number	Manufacturer	Configuration (mm)
1	C1	Ceramic Capacitor	2.2μF	25V, B, ±10%	GRM31MB31E225KA92	MURATA	3216
1	C2	Ceramic Capacitor	2.2μF	10V, B, ±10%	GRM219B11A225KA01	MURATA	2012
1	R1	Resistor	33kΩ	0.063W, 50V, 1%	MCR01MZPF3302	ROHM	1005
1	R2	Resistor	12kΩ	0.063W, 50V, 1%	MCR01MZPF1202	ROHM	1005
1	U1	IC	-	LDO Linear Regulator	BD00GA3WFEJ	ROHM	HTSOP-J8
					BD00GA3WNUX		VSON008X2030

4. V_O=3.3V (V_{IN}=4.5V to 14V)

Count	Reference Designator	Type	Value	Description	Manufacturer Part Number	Manufacturer	Configuration (mm)
1	C1	Ceramic Capacitor	2.2μF	25V, B, ±10%	GRM31MB31E225KA92	MURATA	3216
1	C2	Ceramic Capacitor	2.2μF	10V, B, ±10%	GRM219B11A225KA01	MURATA	2012
1	R1	Resistor	7.5kΩ	0.063W, 50V, 1%	MCR01MZPF7501	ROHM	1005
1	R2	Resistor	2.4kΩ	0.063W, 50V, 1%	MCR01MZPF2401	ROHM	1005
1	U1	IC	-	LDO Linear Regulator	BD00GA3WFEJ	ROHM	HTSOP-J8
					BD00GA3WNUX		VSON008X2030

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■ Bill of Materials (continued)

5. V_O=6.0V (V_{IN}=6.9V to 14V)

Count	Reference Designator	Type	Value	Description	Manufacturer Part Number	Manufacturer	Configuration (mm)
1	C1	Ceramic Capacitor	2.2μF	25V, B, ±10%	GRM31MB31E225KA92	MURATA	3216
1	C2	Ceramic Capacitor	2.2μF	16V, B, ±10%	GRM219B31C225KA87	MURATA	2012
1	R1	Resistor	13kΩ	0.063W, 50V, 1%	MCR01MZPF1302	ROHM	1005
1	R2	Resistor	2kΩ	0.063W, 50V, 1%	MCR01MZPF2001	ROHM	1005
1	U1	IC	-	LDO Linear Regulator	BD00GA3WFEJ	ROHM	HTSOP-J8
					BD00GA3WNUX		VSON008X2030

6. V_O=8.0V (V_{IN}=8.9V to 14V)

Count	Reference Designator	Type	Value	Description	Manufacturer Part Number	Manufacturer	Configuration (mm)
1	C1	Ceramic Capacitor	2.2μF	25V, B, ±10%	GRM31MB31E225KA92	MURATA	3216
1	C2	Ceramic Capacitor	2.2μF	16V, B, ±10%	GRM31MB11C225KA35	MURATA	3216
1	R1	Resistor	27kΩ	0.063W, 50V, 1%	MCR01MZPF2702	ROHM	1005
1	R2	Resistor	3kΩ	0.063W, 50V, 1%	MCR01MZPF3001	ROHM	1005
1	U1	IC	-	LDO Linear Regulator	BD00GA3WFEJ	ROHM	HTSOP-J8
					BD00GA3WNUX		VSON008X2030

■ Precautions for use

(1) This document provides the BOM for evaluation boards. Small parts can also be selected for resistor, and capacitor.

(2) When miniaturizing a resistor, consider decrease in rated power and withstand voltage.

(3) When miniaturizing a ceramic capacitor, consider decrease in withstand voltage. In addition, the capacity may be decreased by DC bias characteristics, and the desired characteristics may not be obtained.

(4) If ceramic capacitor models differ even when they have the same capacity and withstand voltage, the capacity may be decreased by DC bias characteristics depending on the model, and desired characteristics may not be obtained. Be sure to check the DC bias characteristics.

(5) This circuit constant is the value for our evaluation board. It may be necessary to adjust the constant for the actual board. Carry out suitable evaluations.

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