

MAX16170 Evaluation Kit

General Description

The MAX16170 evaluation kit (EV kit) evaluates the MAX16170, an automotive protection IC with up to 30kHz active rectification in a 20-pin thin quad-flat no-leads (TQFN) package. It has several test points for device evaluation. The EV kit is fully assembled and tested over the automotive temperature range of -40° C and $+125^{\circ}$ C, and is available with the MAX16170 TP/VY+.

Features and Benefits

- -42V to +76V Input Protection
- +3V to +65V Operating Voltage Range
- Proven 2-Layer 2oz Copper Printed circuit board (PCB)
 Layout
- PCB Pads for Optional Transient Voltage Suppressor (TVS) Diodes
- Automotive Temperature Range: -40°C and +125°C
- Fully Assembled and Tested

Ordering Information appears at end of data sheet.



MAX16170 EV Kit Photo

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MAX16170 Evaluation Kit

Quick Start

Required Equipment

- MAX16170 EV kit
- 65V, 5A DC Power Supply
- 5V, 100mA DC Power Supply
- Electronic Load
- Two Digital Voltmeters (DVM1, DVM2)
- 4-Channel Oscilloscope

Procedure

The EV kit is fully assembled and tested. Follow these steps to verify board operation.

CAUTION: Do not turn on power supply until all connections are completed.

- 1. Verify all jumpers (JP1) are in their default positions, as shown in <u>Table 1</u>.
- 2. Connect the positive terminal of the 65V DC power supply to the VIN banana jack connection and the negative terminal to the PGND banana jack connection.
- 3. Connect the positive terminal of the 5V DC power supply to VEXT test point and the negative terminal to GPND test point.
- 4. Connect the positive terminal of the electronic load to the VOUT banana jack connection and the negative terminal to the PGND banana jack connection.
- 5. Connect DVM1 to VOUT and PGND test points.
- 6. Connect DVM2 to IOUT and PGND test points.
- 7. Enable the power supply.
- 8. Verify that $V_{OUT} = V_{IN} = 12V$ and $\overline{FLT} = \overline{FETOK} = 5V$ by using an oscilloscope probe. (LED D3 and D4 are OFF).
- 9. Increase the V_{IN} voltage to more than 45V.
- 10. Verify that V_{OUT} goes down and $\overline{FLT} = 0V$ by using an oscilloscope probe. (LED D3 is ON).
- 11. Decrease the V_{IN} voltage to lower than 40V.
- 12. Verify that V_{OUT} goes high and \overline{FLT} = 5V by using an oscilloscope probe. (LED D3 is OFF).
- 13. Decrease the V_{IN} voltage lower than 7.5V.
- 14. Verify that V_{OUT} goes down and $\overline{FLT} = 0V$ by using an oscilloscope probe. (LED D3 is ON).
- 15. Increase the V_{IN} voltage to more than 10V.
- 16. Verify that V_{OUT} goes high and \overline{FLT} = 5V by using oscilloscope probe. (LED D3 is OFF).
- 17. Increase the V_{IN} voltage to 12V.
- 18. Enable the DC loader and set the load current to 1A.
- 19. Verify that DVM2 is connected to IOUT and PGND test points reads about 1.65V.
- 20. Increase the load current to more than 4A.
- 21. Verify that V_{OUT} goes down and FLT = 0V by using an oscilloscope probe. (LED D3 is ON)
- 22. Disconnect the DC loader.
- 23. Short jumper J7 to enter sleep
- 24. Verify that $\overline{FLT} = 0V$ by using oscilloscope probe. (LED D3 is ON)
- 25. Increase the V_{IN} voltage to 30V.
- 26. Verify V_{OUT} is 24V~28V around.
- 27. Short jumper J6.
- 28. Verify V_{OUT} is ~29.3V.
- 29. Disable the power supply and default set all jumpers.

JUMPER	DEFAULT	FEATURE
J3	1-2	1-2: Enabled V_{EN} = V_{IN} , 2-3: Disabled V_{EN} = GND
J10	OPEN	OPEN: Normal, SHORT: Disable OC feature
J8	OPEN	OPEN: Normal, SHORT: Disable OC response delay
J6	OPEN	OPEN: SLP CMP low, SHORT: SLP CMP high
J7	OPEN	OPEN: Normal, SHORT: Enable sleep mode

Table 1. Jumper Connection Guide

Detailed Description

The MAX16170 EV kit evaluates the MAX16170, an ideal diode controller and protection device that protects systems against fault conditions such as reverse current, reverse voltage, undervoltage, overvoltage, and negative transients, and helps designers to evaluate the operation and performance of the MAX16170. The external N-channel MOSFETs (Q1 and Q2) emulate an ideal diode and switcher under the MAX16170's control. A resistor's divider (R11, R12, and R14) is used to set the undervoltage threshold and overvoltage threshold of V_{IN} . A resistor (R13) and a capacitor (C7) are used to set the overcurrent threshold and response delay time separately. A sensor resister (R1) detects the load current and current output from the I_{OUT} pin to indicate the load current lineally. Two LEDs indicate FLT and FETOK output visually.

Power Supply

The EV kit can be powered by two power providers, one for the normal operation between VIN and PGND and another for the external pull high power source between VEXT and PGND when the \overline{FLT} , \overline{FETOK} , and SLP test points are used. The V_{EXT} should not be greater than 5V.

Shutdown Input (SHDN)

The EV kit provides a jumper (J3) to enable or disable the MAX16170. See <u>Table 1</u> for J3 jumper settings. Pulling SHDN to ground allows the MAX16170 to enter the shutdown mode and cut the loader off. EN test point provides a way to be controlled externally.

Fault Condition Output

The EV kit provides an FLT test point to indicate the work condition. Once any fault event is triggered, the FLT is pulled down. The fault events contain UVLO, undervoltage, overvoltage, overcurrent, reverse, sleep mode, thermal shutdown, and active shutdown.

FET Condition Output

The MAX16170 EV kit provides a FETOK test point to indicate the FET condition. After MAX16170 is powered, its startup initialization achieves the FET detection program. Once any fault status of both MOSFETs is detected, FETOK is pulled down. MOSFET's fault status includes the short circuit and open circuit failure modes.

Clamp Selection

The EV kit provides a jumper (J6) and an optional CMP test point to set OUT's voltage options to clamp in the sleep mode. See <u>Table 1</u> for the J6 jumper settings.

Sleep Mode

The EV kit provides a jumper (J7) and an SLP test point to set the MAX16170 to enter the sleep mode. See <u>Table 1</u> for the J7 jumper settings. The sleep mode is activated using an active high logic input through jumper J7 or test point SLP.

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CSA Feature

The MAX16170 EV kit provides a fixed setting for the CSA feature of the MAX16170. The current sensor resistor (R1) is $5m\Omega$, output resistor (R8) to ground is $33k\Omega$, and input resistor (R2) is 100Ω . The test point (I_{OUT}) is an output to provide the voltage level for current.

The following equation calculates the output voltage on I_{OUT} to the actual load current.

$$V_{IOUT} = \frac{I_{OUT} \times R1 \times R8}{R2} = \frac{I_{OUT} \times 5m\Omega \times 33k\Omega}{100\Omega} = 1.65 \times I_{OUT}$$

VIOUT is the IOUT's voltage in unit of Volt (V), and IOUT is the load current in unit of Ampere (A).

Soft Start

While the MAX16170 enables the soft-start mode, GATE2 is driven by a constant pull-high current to charge the soft-start capacitor. So, the soft-start time is determined by the soft-start capacitor (C9) connected between the GATE2 and ground.

Once the soft-start begins, assume the load current is constant in an application, the OUT capacitor C_{OUT} is charged to the output voltage V_{OUT} by an approximate constant current I_{CHG} , and its total current must not exceed the overcurrent threshold.

Following is the sample recommended to get the start0up time t_{SS} and GATE capacitor C_{GATE}.

$$t_{SS} = \frac{C_{OUT} \times V_{OUT}}{I_{CHG}} = \frac{C_{GATE} \times (V_{OUT} + V_{GS(TH)})}{I_{GATE}}$$
$$C_{GATE} = C_{OUT} \times \frac{I_{GATE}}{I_{CHG}} \times \frac{V_{OUT}}{(V_{OUT} + V_{GS(TH)})}$$

V_{GS(TH)} is the gate threshold voltage of MOSFET, and I_{GATE} is fixed at an approximate average of 20µA.

Optional Components

The EV kit features optional components to evaluate the MAX16170 in a system.

Two clamp diodes (D1 and D2) limit the application's DC input voltage range. If two clamp diodes (D1 and D2) are installed, the EV kit can also clamp the positive and negative transients for some automotive standard tests.

A linear regulator (U4, C8, and R17) can provide an additional pullup source for FETOK and FLT outputs.

Note: These optional components are not necessary for the proper operation of the MAX16170 but are provided to optimize system operation, facilitate testing, and evaluate the IC.

Ordering Information

PART	ТҮРЕ	
MAX16170EVKIT#	EV Kit	

#Denotes RoHS-compliant.

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MAX16170 EV Kit Bill of Materials

C1, C3 2 0.1UF: 10%: 230/: X7R: CERAMIC C2 1 MURATX: GRM3GR2PE 104KW03 C2 1 TDK: C3216XTR24105K160AA MURATX: GCH3GR2X105KE01 TAIYO YUDEN: HMK316B7105KL1 C4 1 TDK: C3216XTR24105K160AA C4 1 TDK: C3216XTR24105K160AA C5 1 100(F); 25%; 100: XUMINUM-ELECTROLYTIC PANASONIC: EEV-FK2A101 0.1UF; 10%; 6.3.Y, SRR: CBRAMIC C6 1 MURATA: GRM155R00104KA01 KEMET: C0402C104K9PAC 100(F); 10%; 100: YUT6X C7, C9 2 KEMET: C0403(12K16AC C7, C9 2 KEMET: C0403(12K16AC D3, D4 2 C0576-NR-1 GATE1, GATE2 2 KEYSTONE: 5004 J3 1 SULLINS: PC023SAAN J6, J7 2 CONNECTOR SULLINS: PEC023AAN MACHINE FABRICATED KEYSTONE: 5001 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 CONNECTOR <th>PART</th> <th>QTY</th> <th>DESCRIPTION</th>	PART	QTY	DESCRIPTION
Ori, Col 2 MURATA, GRM31CR22E104(W03) C2 1UF; 10%; 100V, XEX, CERAMIC C2 1 TDK: C3216X7R2A105K160AA MURATA, GRM31CR22A105KE01 TAIYO YUDEL; HMK318B7105KLH C4 1 TDF: C3216X7R2A105K126AA C5 1 PANASONIC: EEV-FA20105K126AA C6 1 DIOUF; 20%; 100V, ALUMINUM-ELECTROLYTIC PANASONIC: EEV-FA20104KA01 KEMET: C0003C102K136AC C6 1 MURATA: GRM15R60104KA01 KEMET: C0003C102K13AC KEMET: C0003C102K13AC C7, C9 2 KEMET: C0003C102K13AC CDLY, CP, EN, FETOK, FLT, IOUT 6 KEYSTONE: 5002 D3, D4 2 LED J3 1 CONNECTOR J4, J7 2 CONNECTOR	C1 C3	2	0.1UF; 10%; 250V; X7R; CERAMIC
C2 1UF: 10%: 100V, X7R; CERAMIC C2 TDK: C3216X72A105K160AA MURATA:: SCH31C872A105K160AA MURATA:: SCH31C872A105K160AA C4 1UF: 10%: 25V; X5R; CERAMIC C4 1UF: 10%: 25V; X5R; CERAMIC C5 1000PF; 20%; 100V, ALUMINUM-ELECTROLYTIC PANASONIC: EEV-FK2A101 0.1UF; 10%; 63V; X5R; CERAMIC C6 1MURATA:: GRM155860.104KA01 KEMET: C0403C102K19PAC 1000PF; 10%; 100V; C0G; CERAMIC C7, C9 2 KEMET: C0403C102K19PAC C1, C9 1EST POINT KEVSTONE: 5002 1000PF; 10%; 100V; C0G; CERAMIC CDLY, CP, EN, FETGK, FLT, IOUT 6 TEST POINT KEVSTONE: 5002 1000PF; 10%; 100V; C0G; CERAMIC 100V; C0G; CERAMIC J3 1 CONNECTOR 100VER J3 1 CONNECTOR 100VER J6, J7 2 SULLINS: PEC02SAN 100VER MH1-MH4 4 KEVSTONE: 5002 100VER PGND, PGND7, VIN, VOUT 4 CONNECTOR 10VER PGND, PGND7, VIN, VOUT 4 <		2	MURATA: GRM31CR72E104KW03
C2 1 TDK: C3216X7R24105K160AA MURTA: GCH3107Z4105KE01 TAIYO YUDEN: HMK31687105KLH C4 1 10F; 10%; 25V; X5R; CERAMIC C5 1 100UF; 20%; 10V; ALUMINUM-ELECTROLYTIC PANASONIC: EEV-KZA101 0.1UF; 10%; 53V; X5R; CERAMIC C6 1 MURTA: GRM156801104KA01 C6 1 MURTA: GRM156801104KA01 C7, C9 2 KEMET: C0403C102K16AC C1V, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 LED CONNECTOR J3 1 SULLINS: PEC03SAAN J6, J7 2 CONNECTOR J6, J7 2 CONNECTOR MH1-MH4 4 MACMINE FABRICATED MH1-MH4 4 KEYSTONE: 5004 Q1, Q2 2 CONNECTOR PGND, PGND7, VIN, VOUT 4 EMERSON NETWORK POWER: 108-0740-001 PGND4, PGND6 3 TEST POINT KEYSTONE: 5001 CONNECTOR Q1, Q2 2 ON SEMICATED PGND4, PGND6 3 </td <td></td> <td></td> <td>1UF; 10%; 100V; X7R; CERAMIC</td>			1UF; 10%; 100V; X7R; CERAMIC
MURATA: GCH31CR72A105KE11 TAINO VUDEN: HMX31687105KLH C4 1 UF; 10%; 25V; XSR; CERAMIC C5 1 00UF; 20%; S0V; XSR; CERAMIC C5 1 0.10UF; 20%; 100V; ALUMINUM-ELECTROLYTIC PANASONIC: EEV-FK2A101 C6 1 MURATA: GRM155R60.104KA01 KEMET: C0402C10KSPAC C6 1 MURATA: GRM155R60.104KA01 KEMET: C0402C10KSPAC C7, C9 2 KEMET: C0402C104K9PAC CDLY, CP, EN, FETOK, FLT, IOUT 6 KEYSTONE: 5002 D3, D4 2 LED CORKM: LS 0076-NR-1 GATE1, GATE2 2 XEYSTONE: 5002 J3 1 CONNECTOR J6, J7 2 SULINS: PECO2SAN MH1-MH4 4 KEYSTONE: 5002 PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND4, PGND6 3 TEST POINT KEYSTONE: 5001 <td>C2</td> <td>1</td> <td>TDK: C3216X7R2A105K160AA</td>	C2	1	TDK: C3216X7R2A105K160AA
C4 TAIVO YUDEN: HMK31687105KLH C4 1 TUP: 10%; 250%; VSR; CERAMIC C5 1 100UF; 20%; 100V; ALUMINIUM-ELECTROLYTIC PANASONIC: EEV-FK2A101 0.1UF; 10%; 50.3V; XSR; CERAMIC C6 1 MURTA: GRM:INSER0J104KA01 KEMET: C0402C104K9PAC KEMET: C0402C104K9PAC C7, C9 2 KEMET: C0403C102K16AC TDK: C1608C0G2A102K080AA TDK: C1608C0G2A102K080A CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 LED OSRAM: LS Q976-NR-1 GATE1, GATE2 2 KEVSTONE: 5004 J3 1 SULLINS: FEC03SAAN J6, J7 2 CONNECTOR J6, J7 2 CONNECTOR MH1-MH4 4 KEYSTONE: 5002 PGND, PGND7, VIN, VOUT 4 EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND6 3 TEST POINT KEYSTONE: 5001 KEYSTONE: 5001 PGND1, PGND7, VIN, VOUT 4 EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND6 3 TEST POINT	02	I	MURATA: GCH31CR72A105KE01
C4 1 TUF; 10%; 25V; X5R; CERAMIC C5 1 TORUF; 20%; 100V; ALUMINUM-ELECTROLYTIC C6 1 I0UUF; 20%; 100V; ALUMINUM-ELECTROLYTIC C6 1 MURATA; CRM155R60.104KA01 KEMET; C04022G104K9PAC 1000PF; 10%; 100V; C0G; CERAMIC C7, C9 2 KEMET; C0402G2104K9PAC C0LY, CP, EN, FETOK, FLT, IOUT 6 KEVSTONE: 5002 D3, D4 2 LED D3, D4 2 OSRAM: LS 0976-NR-1 GATE1, GATE2 2 KEVSTONE: 5002 J3 1 SULLINS: PEC03SAAN J6, J7 2 CONNECTOR J6, J7 2 SULLINS: PEC03SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR Q1, Q2 2 POWER MOSFET Q1, Q2 2 ON SEMICONUCTOR: NVD6824NLT4G-VF01 Q1, Q2 2 ON SEMICONUCTOR: NVD6824NLT4G-VF01			TAIYO YUDEN: HMK316B7105KLH
C5 1 TDK: C2012XSR1E105K125AA C5 1 PANASONIC: EEV-FK2A101 C6 1 0.1UF; 10%: 100V: ALUMINUM-ELECTROLYTIC PANASONIC: EEV-FK2A101 0.1UF; 10%: 100V: C0G; CERAMIC C6 1 MURATA: GRMIDSGR0J104KA01 KEMET: C0402C104K9PAC 1000V: C0G; CERAMIC C7, C9 2 KEMET: C0402C104K9PAC C0LY, CP, EN, FETOK, FLT, IOUT 6 ItEST POINT KEVSTONE: 5002 1 CONNECTOR D3, D4 2 LED OSRAM: LS 0976-NR-1 GATE1, GATE2 2 J3 1 SULLINS: PCC03SAAN J4 CONNECTOR SULLINS: PCC03SAAN MH1-MH4 4 KEYSTONE: 5004 MH1-MH4 4 KEYSTONE: 5001 PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND1, PGND2, VEXT, VINZ, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: S001 KEYSTONE: S001 R1 <td>C4</td> <td>1</td> <td>1UF; 10%; 25V; X5R; CERAMIC</td>	C4	1	1UF; 10%; 25V; X5R; CERAMIC
C5 100UF; 20%; 100V; ALUMINUM-ELECTROLYTIC PANASONUC: EEV-FR2A101 0.1UF; 10%; 6.3V; X5R; CERAMIC C6 1 MURATA: GRM155R60J104KA01 C6 1 MURATA: GRM155R60J104KA01 C7, C9 2 KEMET: C0402C104K9PAC C7, C9 2 KEMET: C0603C102K16AC CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 EED OSRAM: LS 0976-NR-1 GATE1, GATE2 2 KEYSTONE: 5004 J3 1 CONNECTOR J4, J7 2 CONNECTOR J6, J7 2 CONNECTOR SULLINS: PEC03SAAN SULLINS: PEC03SAAN MH1-MH4 4 KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR GATE1, Q2 2 ON SEMICONDUCTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR GULINS: PEC02SAAN CONNECTOR GULINS: PEC02SAAN CONNECTOR Q1, Q2 2 ON SEMICONDUCTOR: 108-0740-001 PGND1, PGND2, VEXT, VINZ, VOUT2 5			TDK: C2012X5R1E105K125AA
CO PANASONIC: EEV-FK2A101 0.1UF; 10%; 63V; XSR; CERAMIC 0.6 0.1UF; 10%; 63V; XSR; CERAMIC C6 1 MURATA: GRM155R60J104KA01 KEMET: C0402C104K8PAC C7, C9 2 KEMET: C0603C102K16AC TDK: C1608C0G2A102K080AA CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 D3, D4 2 KEYSTONE: 5004 GATE1, GATE2 2 KEYSTONE: 5004 CONNECTOR SULLINS: PECOSSAAN GONNECTOR J6, J7 2 MH1-MH4 4 MCHIN: PEORSAAN CONNECTOR SULLINS: PECOSSAAN MH1-MH4 4 MCHONETOR SULLINS: PECOSSAAN CONNECTOR SULLINS: PECOSSAAN MH1-MH4 4 MCHONETRE 0020 PGND, VIN, VOUT	C5	1	100UF; 20%; 100V; ALUMINUM-ELECTROLYTIC
C6 1 0.1UF; 10%; 6.3V; S5R; CERAMIC C6 1 MURATA: CRMISSR60104KA01 KEMET: C0402C104K9PAC 1000PF; 10%; 100V; C0G; CERAMIC C7, C9 2 KEMET: C0603C102K16AC D01UF; 10%; 610V; C0G; CERAMIC KEMET: C0603C102K16AC CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 LED OSRAM: LS 0976-INR-1 GATE1, GATE2 2 KEYSTONE: 5004 J3 1 CONNECTOR J4 CONNECTOR SULLINS: PC03SAAN J6, J7 2 SULLINS: PC02SAAN MH1-MH4 4 KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS Q1, Q2 2 ON SEMICONDUCTOR: NVD8824NLT4G-VF01 Q1, Q2 2 ON SEMICONDUCTOR: NVD8824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/.25PPM R1 1 100; 5%; 0402 R4, R5			PANASONIC: EEV-FK2A101
C6 MURATA: GRM15SR60J104KA01 KEMET: C0402C104K9PAC C7, C9 2 1000PF; 10%; 100V; C0G; CERAMIC C7, C9 2 KEMET: C0603C102K1GAC TDK: C1608C062A102K080AA TEST POINT CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT GATE1, GATE2 2 TEST POINT GATE1, GATE2 2 TEST POINT J3 1 SULLINS: FCC03SAN J6, J7 2 CONNECTOR J6, J7 2 CONNECTOR SULLINS: FEC02SAAN MH1-MH4 MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND4.PGND6 3 TEST POINT KEYSTONE: 9032 CONNECTOR SUBLINS: FEC02SAN PGND4.PGND6 3 TEST POINT Q1, Q2 VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4.PGND6 3 TEST POINT KEYSTONE: 5001 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728			0.1UF; 10%; 6.3V; X5R; CERAMIC
KEMET: C0402C104K9PAC C7, C9 1000PF; 10%; 100V; C0G; CERAMIC CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEWET: C0603C102k1GAC D3, D4 2 D3, D4 2 OSRAW: LS 0976-NR-1 GATE1, GATE2 2 J3 1 CONNECTOR J3 1 CONNECTOR J1 CONNECTOR SULLINS: PEC03SAAN MH1-MH4 4 MCHINE FABRICATED KEYSTONE: 3002 PGND, PGND7, VIN, VOUT 4 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MCCONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND4.PGND6 3 TEST POINT KEYSTONE: 3002 POWER MOSFET Q1, Q2 2 POWER MOSFET Q1, Q2 2 Q1 00;5%; 0402 R3 1 R4 100;5%; 0	C6	1	MURATA: GRM155R60J104KA01
C7, C9 2 1000PF; 10%; 100V; C0G; CERAMIC CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 LED D3, D4 2 OSRAM: LS 0976-INR-1 GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 CONNECTOR J3 1 CONNECTOR J6, J7 2 SULLINS: PEC02SAAN MH1-MH4 4 KEYSTONE: 5002 PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9032 PGND1, PGND4, VIN, VOUT 4 CONNECTOR PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 WEICO WIRE: 9020 BUSS PGND4, PGND6 3 TEST POINT R1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R4, R5 2 2K; 0.10%; 0402 R4 1 3K; 1%; 0402			KEMET: C0402C104K9PAC
C7, C9 2 KEMET: C0603C102K1GAC TDK: C1608C0G2A102K080AA TEST POINT CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT D3, D4 2 LED OSRAM: LS Q976-NR-1 CONNECTOR GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 CONNECTOR J3 1 CONNECTOR J6, J7 2 CONNECTOR SULLINS: PEC02SAAN SULLINS: PEC02SAAN MH1-MH4 4 KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND, PGND7, VIN, VOUT 4 CONNECTOR PGND4.PGND6 3 TEST POINT KEYSTONE: 9032 CONNECTOR Q1, Q2 2 POWER MOSFET Q1, Q2 2 POWER MOSFET Q1, Q2 2 POWER MOSFET Q1, Q2 1 100; 5%; 0402 R1 1 STACKPOLE ELECTRONICS: CSSH2728FT5L00 R4, R5 2 2 K; 0.10%; 0402 R4, R5 2 2 K; 0.10%; 040			1000PF; 10%; 100V; C0G; CERAMIC
TDK: C1608C002A102K080AA CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 D3, D4 2 LED OSRAM: LS Q976-NR-1 GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 J3 1 CONNECTOR SULLINS: PCC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND4-PGND6 3 TEST POINT KEYSTONE: 9032 Q1, Q2 2 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 100; 5%; 0402 R3 1 11; 1%; 0402 R4, R5 2 2 R6, R9, R10, R13, R14 5 100%; 5%; 0402 R11 1 820K; 1%; 0402 R11 1 320K; 1%; 0402 R11 1 <td>C7, C9</td> <td>2</td> <td>KEMET: C0603C102K1GAC</td>	C7, C9	2	KEMET: C0603C102K1GAC
CDLY, CP, EN, FETOK, FLT, IOUT 6 TEST POINT KEYSTONE: 5002 D3, D4 2 LED OSRAM: LS Q976-NR-1 GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 J3 1 CONNECTOR SULLINS: PCC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND4-PGND6 3 TEST POINT KEYSTONE: 9032 Q1, Q2 2 POWER WORSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R4, R5 2 2K; 0.10%; 0402 R4, R5 2 2K; 0.10%; 0402 R1 1 33K; 1%; 0402 R1 1 100; 5%; 0402 R4, R5 2 2K; 0.10%; 0402 R4, R5 2 2K; 0.10%; 0402 R1 10K; 5%; 0402 10K; 5%;			TDK: C1608C0G2A102K080AA
Ober, EN, Peron, Pero, Pe		6	TEST POINT
D3, D4 2 LED OSRAM: LS Q976-NR-1 GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 J3 1 CONNECTOR SULLINS: PEC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND4, PGND6 3 TEST POINT KEYSTONE: 9032 Q1, Q2 2 WEICO WIRE: 9020 BUSS Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R4, R5 2 2K; 0.10%; 0402 R11 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R1 10K; 5%; 0402 100K; 5%; 0402 R11 1 820K; 1%; 0402 R11 1	CDET, CF, EN, FETOR, FET, IOOT	0	KEYSTONE: 5002
DS, D4 2 OSRAM: LS Q976-NR-1 GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 J3 1 CONNECTOR SULLINS: PEC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR SULLINS: PEC02SAAN PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND4, PGND6, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2 K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R14 1	D2 D4	n	LED
GATE1, GATE2 2 TEST POINT KEYSTONE: 5004 J3 1 CONNECTOR SULLINS: PCC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 </td <td>D3, D4</td> <td>2</td> <td>OSRAM: LS Q976-NR-1</td>	D3, D4	2	OSRAM: LS Q976-NR-1
GATE1, GATE2 2 KEYSTONE: 5004 J3 1 CONNECTOR SULLINS: PCC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R4 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5		0	TEST POINT
J3 1 CONNECTOR SULLINS: PCC03SAAN J6, J7 2 SULLINS: PCC03SAAN MH1-MH4 2 SULLINS: PCC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND4.PGND6 3 TEST POINT KEYSTONE: 9020 BUSS PGND4.PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 ON SEMICONDUCTOR: NVD6824NLT4G-VF01 Q1, Q2 2 ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R4 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R4 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402	GATET, GATEZ	2	KEYSTONE: 5004
J3 1 SULLINS: PCC03SAAN J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R4, R5 2 2K; 0.10%; 0402 R4 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R11 1 100%; 5%; 0402 R11 1 100%; 5%; 0402 R11 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 <	10		CONNECTOR
J6, J7 2 CONNECTOR SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R4 1 32K; 1%; 0402 R1 1 820K; 1%; 0402 R1 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 </td <td>J3</td> <td>I</td> <td>SULLINS: PCC03SAAN</td>	J3	I	SULLINS: PCC03SAAN
36, 37 2 SULLINS: PEC02SAAN MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R8 1 33K; 1%; 0402 R11 1 82K; 1%; 0402 R11 1 82K; 1%; 0402 R11 1 82K; 1%; 0402 R11 1 10K; 5%; 0402 R11 1 82K; 1%; 0402 R11 1 47K; 5%; 0402 R12 1 47K; 5%; 0402 R13 2 10K; 1%; 0402 R14 5 10K; 5%; 0402	16 17	C	CONNECTOR
MH1-MH4 4 MACHINE FABRICATED KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000	JO, J7	2	SULLINS: PEC02SAAN
IMH I-IMI4 4 KEYSTONE: 9032 PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R11 1 820K; 1%; 0402 R11 1 10K; 5%; 0402 R11 1 10K; 5%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 <td></td> <td>4</td> <td>MACHINE FABRICATED</td>		4	MACHINE FABRICATED
PGND, PGND7, VIN, VOUT 4 CONNECTOR EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R1 1 820K; 1%; 0402 R1 1 10K; 5%; 0402 R1 1 10K; 5%; 0402 R1 1 32K; 1%; 0402 R11 1 820K; 1%; 0402 R11 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000		4	KEYSTONE: 9032
PGND, PGND, VIN, VOOT 4 EMERSON NETWORK POWER: 108-0740-001 PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R11 1 820K; 1%; 0402 R12 1 10K; 5%; 0402 R11 1 820K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION		1 1 1 1 2 6 2 6 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 2 5 1 2 5 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 <td>CONNECTOR</td>	CONNECTOR
PGND1, PGND2, VEXT, VIN2, VOUT2 5 WEICO WIRE: 9020 BUSS PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R1 1 820K; 1%; 0402 R1 1 820K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R14 1 820K; 1%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	FGIND, FGIND7, VIN, VOUT		EMERSON NETWORK POWER: 108-0740-001
PGND4-PGND6 3 TEST POINT KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	PGND1, PGND2, VEXT, VIN2, VOUT2	5	WEICO WIRE: 9020 BUSS
PGND4-PGND6 3 KEYSTONE: 5001 Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB: MAX16170 EVALUATION KIT		2	TEST POINT
Q1, Q2 2 POWER MOSFET ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB MAX16170 EVALUATION KIT	PGIND4-PGIND6	3	KEYSTONE: 5001
Q1, Q2 2 ON SEMICONDUCTOR: NVD6824NLT4G-VF01 R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R12 1 47K; 5%; 0402 Q1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	01.03	0	POWER MOSFET
R1 1 0.005; 1%; 2728; +/-25PPM STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB: MAX16170 FVALUATION KIT	Q1, Q2	2	ON SEMICONDUCTOR: NVD6824NLT4G-VF01
R1 I STACKPOLE ELECTRONICS: CSSH2728FT5L00 R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 FVALUATION KIT	P1	1	0.005; 1%; 2728; +/-25PPM
R2 1 100; 5%; 0402 R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 FVALUATION KIT	RI I	1	STACKPOLE ELECTRONICS: CSSH2728FT5L00
R3 1 1K; 1%; 0402 R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 FVALUATION KIT	R2	1	100; 5%; 0402
R4, R5 2 2K; 0.10%; 0402 R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	R3	1	1K; 1%; 0402
R6, R9, R10, R13, R14 5 10K; 5%; 0402 R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	R4, R5	2	2K; 0.10%; 0402
R8 1 33K; 1%; 0402 R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB: MAX16170 FVALUATION KIT	R6, R9, R10, R13, R14	5	10K; 5%; 0402
R11 1 820K; 1%; 0402 R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	R8	1	33K; 1%; 0402
R12 1 47K; 5%; 0402 R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 FVALUATION KIT	R11	1	820K; 1%; 0402
R15, R16 2 100K; 5%; 0402 U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	R12	1	47K; 5%; 0402
U1 1 MAX16170 VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	R15, R16	2	100K: 5%: 0402
VIN3, VOUT3 2 TEST POINT KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT	U1	1	MAX16170
VIN3, VOUT3 2 KEYSTONE: 5000 PCB 1 PCB:MAX16170 EVALUATION KIT			TEST POINT
PCB 1 PCB:MAX16170 FVALUATION KIT	VIN3, VOUT3	2	KEYSTONE: 5000
	PCB	1	PCB:MAX16170 EVALUATION KIT

MAX16170 Evaluation Kit

MAX16170 EV Kit Schematic Diagram



MAX16170 Evaluation Kit

MAX16170 EV Kit PCB Layout Diagrams



MAX16170 EV Kit Component Placement Guide—Top Silkscreen



MAX16170 EV Kit PCB Layout—Top View

MAX16170 Evaluation Kit



MAX16170 EV Kit PCB Layout—Bottom View

MAX16170 Evaluation Kit

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	
0	04/23	Initial release	_



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