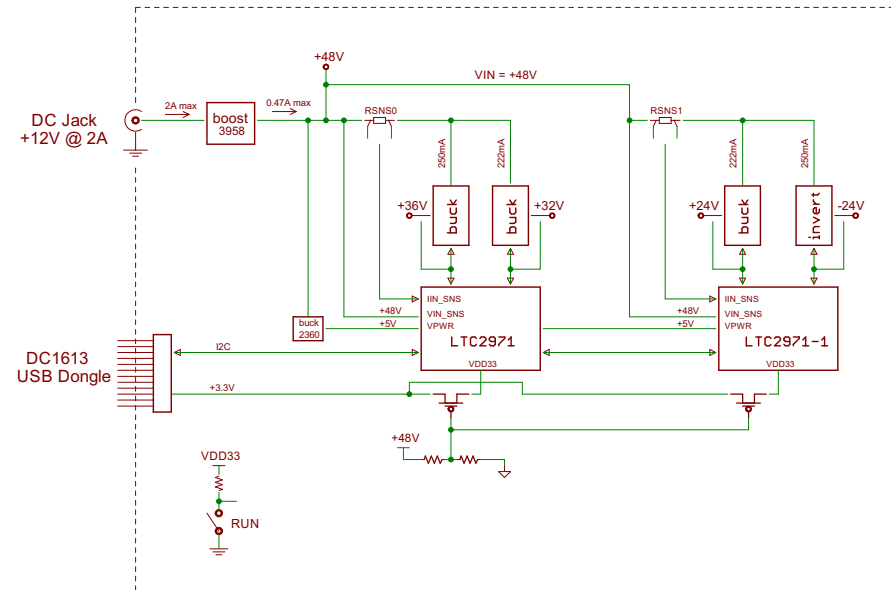


REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

BLOCK DIAGRAM



CH0: boost (7101) +36V @ 0.3A
 CH1: buck (3991) +32V @ 0.3A
 CH2: buck (8630) +24V @ 0.4A
 CH3: invert (3758) -24V @ 0.4A

ASSUMPTIONS:

1. All buck and boost regulators 90% efficient at full load.
2. Inverting regulator 85% efficient at full load.
3. Input DC jack currents based on two outputs fully loaded.

CUSTOMER NOTICE

LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE

THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS

APPROVALS

PCB DES. MIKE P.

APP. ENG. MIKE P.



1630 McCarthy Blvd.
 Milpitas, CA 95035
 Phone: (408) 422-1300
 www.analog.com

TITLE: LTC2971 DUAL-CHANNEL
 60V POWER SYSTEM MANAGER

SIZE IC NO. LTC2971
 B DEMO CIRCUIT 2875A

REV: 1

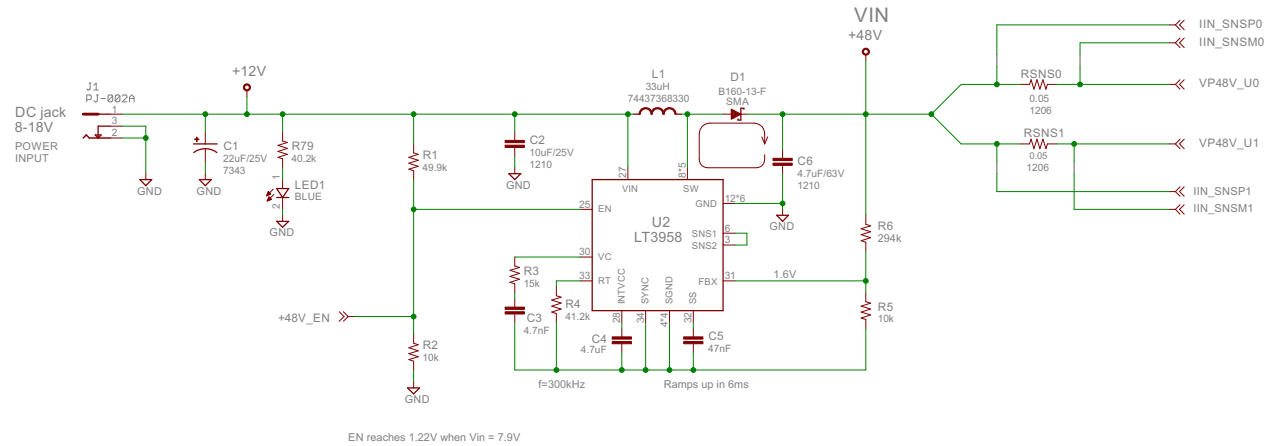
SCALE = NONE

DATE:

SHEET: 1/9

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LT3958 INPUT SUPPLY +48V



Serves as input supply to power the 4 managed channels

UNLESS OTHERWISE SPECIFIED:

1. ALL RESISTORS ARE 1% 0603.
2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE

LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE

THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS

APPROVALS

PCB DES. MIKE P.

APP ENG. MIKE P.



1630 McCarthy Blvd.
Folsom, CA 95630
Phone: (480) 422-1900
www.analog.com

TITLE: LTC2971 DUAL-CHANNEL
60V POWER SYSTEM MANAGER

SIZE B IC NO. LTC2971
DEMO CIRCUIT 2875A

REV: 1

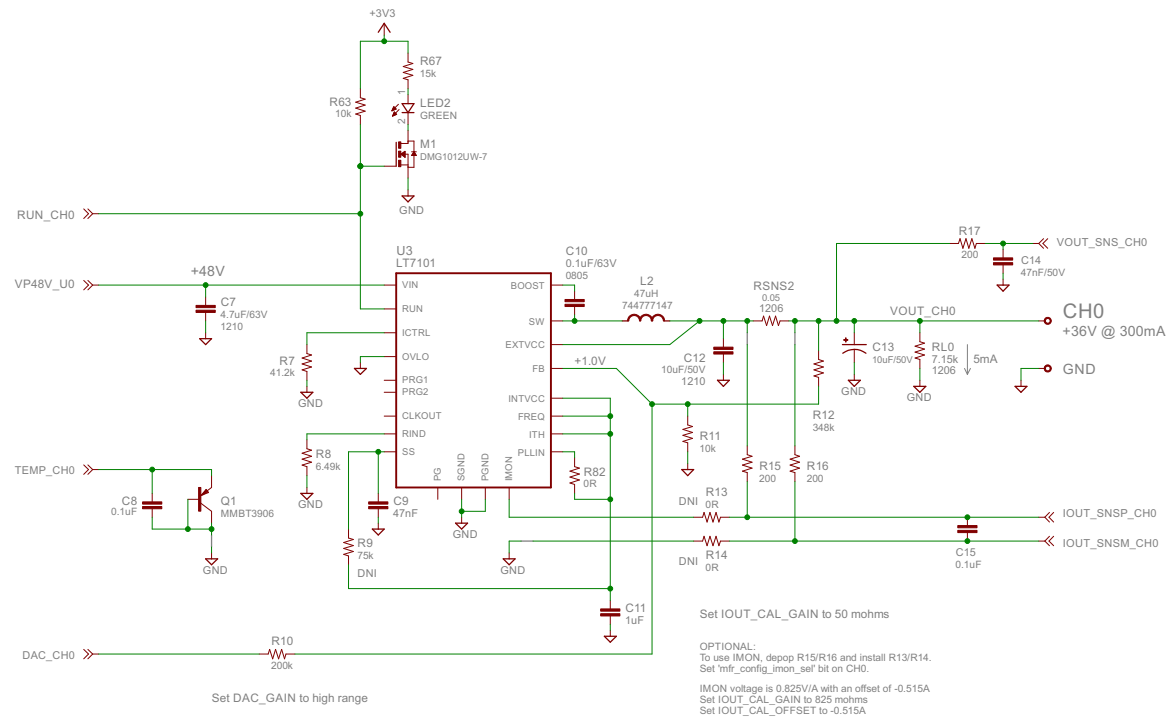
SCALE = NONE

DATE:

SHEET: 2/9

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LT7101 POWER STAGE, VOUT= +36V



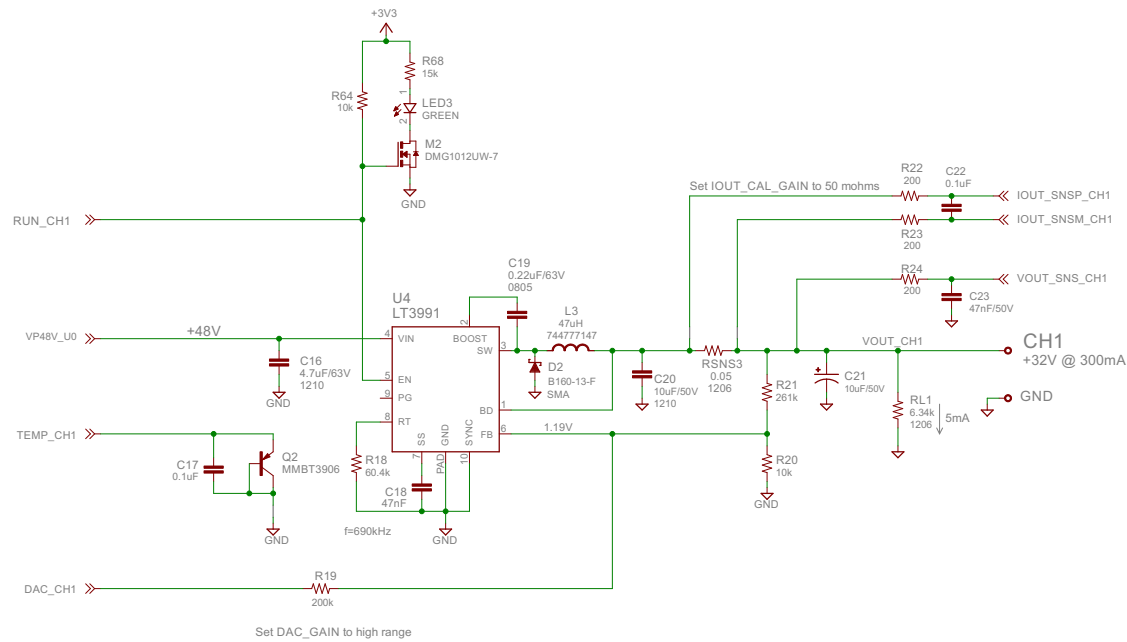
UNLESS OTHERWISE SPECIFIED:

1. ALL RESISTORS ARE 1% 0603.
2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE		APPROVALS		ANALOG DEVICES		POWER BY LINEAR		1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408) 422-1900 www.analog.com	
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		PCB DES.	MIKE P.			TITLE: LTC2971 DUAL-CHANNEL 60V POWER SYSTEM MANAGER			
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		APP ENG.	MIKE P.			SIZE	IC NO.	LTC2971	REV:
						B		DEMO CIRCUIT 2875A	1
		SCALE = NONE		DATE:				SHEET:	3/9

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LT3991 POWER STAGE, VOUT= +32V



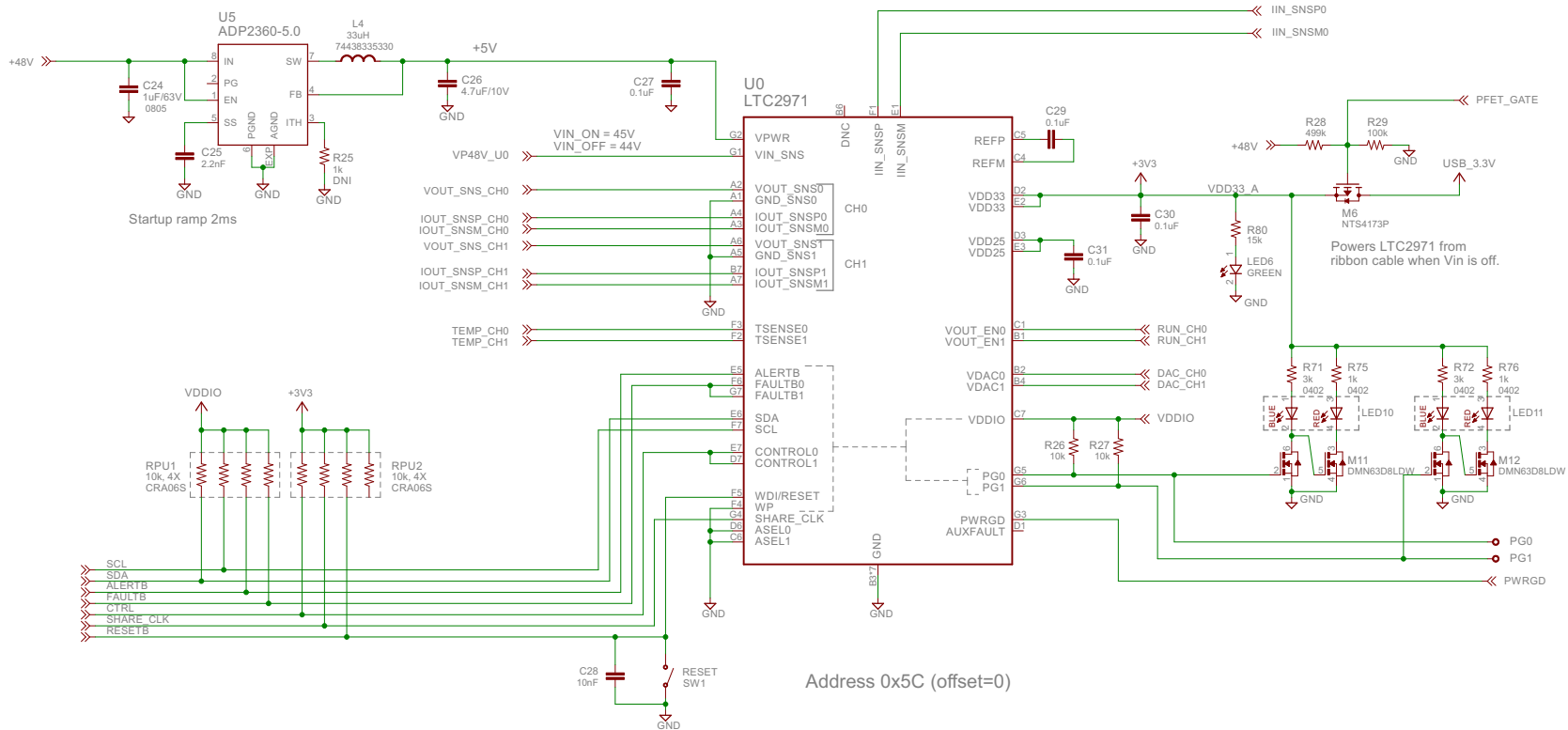
- UNLESS OTHERWISE SPECIFIED:
1. ALL RESISTORS ARE 1% 0603.
 2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE		APPROVALS		ANALOG DEVICES A DIVISION OF ANALOGIC CORPORATION	POWER BY LINEAR	1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408) 422-1300 www.analog.com
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		PCB DES. MIKE P.				
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		APP ENG. MIKE P.		SIZE B	IC NO. LTC2971 DEMO CIRCUIT 2875A	REV: 1
SCALE = NONE		DATE:		SHEET: 4/9		

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LTC2971 2-CHANNEL +/- 60V POWER SYSTEM MANAGER

ADP2360 Step-Down +48V to +5V
to power the LTC2971 devices



Address 0x5C (offset=0)

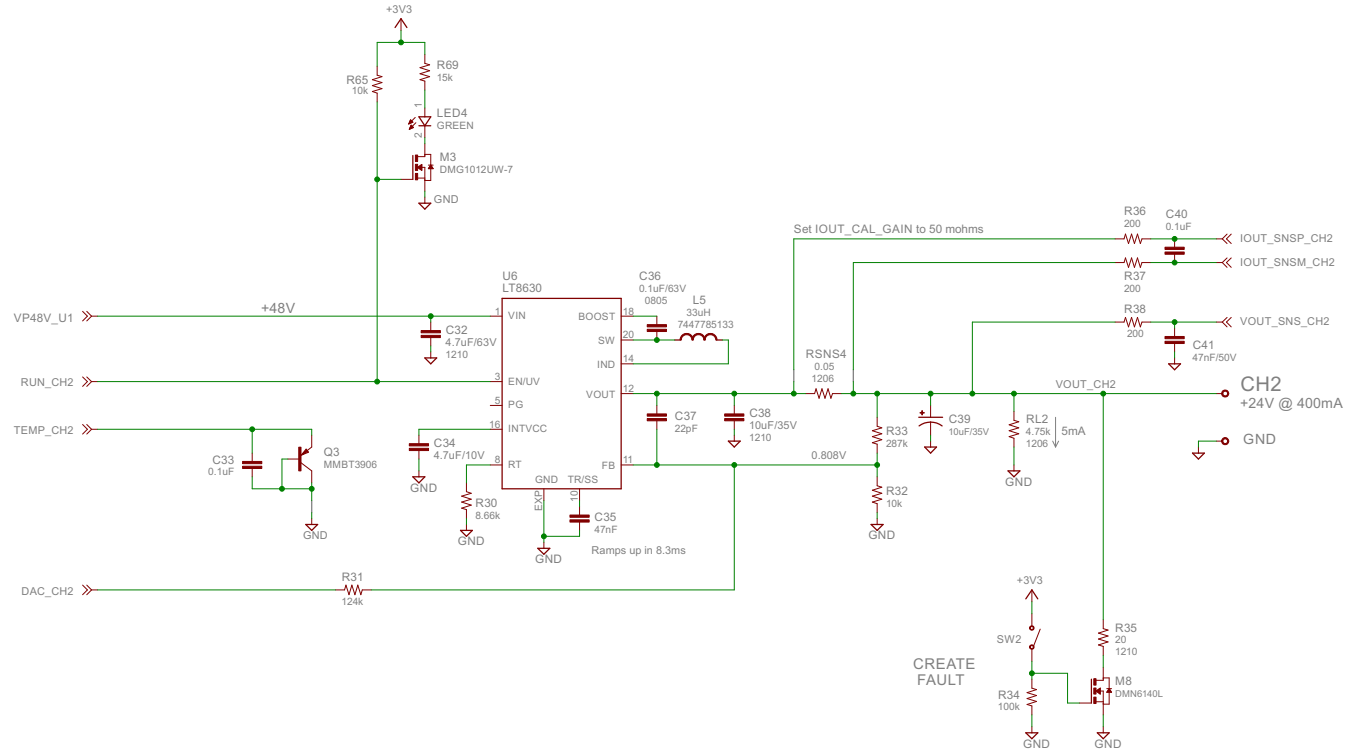
UNLESS OTHERWISE SPECIFIED:

1. ALL RESISTORS ARE 1% 0603.
2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE		APPROVALS		ANALOG DEVICES		POWER BY LINEAR		1630 McCarthy Blvd. Folsom, CA 95630 Phone: (480) 422-1900 www.analog.com		
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		PCB DES.	MIKE P.	TITLE: LTC2971 DUAL-CHANNEL 60V POWER SYSTEM MANAGER		SIZE	IC NO.	LTC2971	REV:	1
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		APP ENG.	MIKE P.	SCALE = NONE		DATE:	SHEET: 5/9			

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LTC8630 POWER STAGE, VOUT = +24V



UNLESS OTHERWISE SPECIFIED:

1. ALL RESISTORS ARE 1% 0603.
2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE

LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.

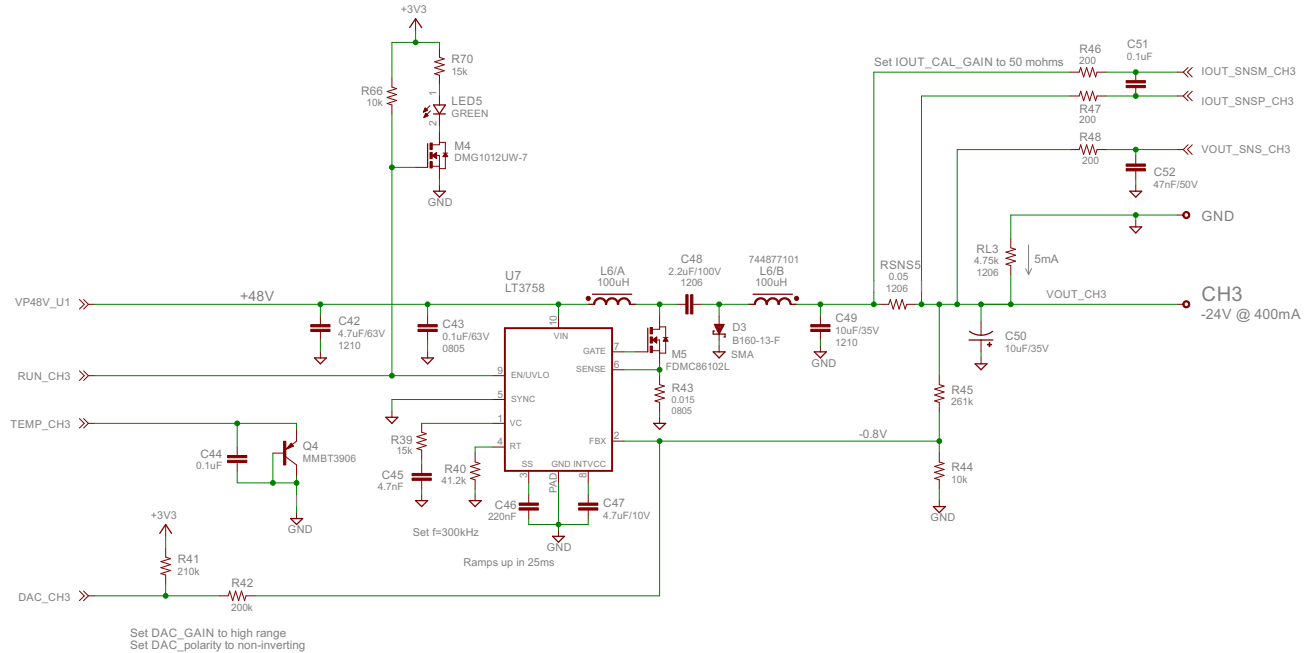
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.

APPROVALS	
PCB DES.	MIKE P.
APP ENG.	MIKE P.
SCALE	NONE
DATE:	

				1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408) 422-1300 www.analog.com	
TITLE: LTC2971 DUAL-CHANNEL 60V POWER SYSTEM MANAGER					
SIZE	IC NO.	LTC2971		REV:	1
B	DEMO CIRCUIT 2875A				
SHEET: 6/9					



REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LT3758 POWER STAGE, VOUT = -24V



UNLESS OTHERWISE SPECIFIED:

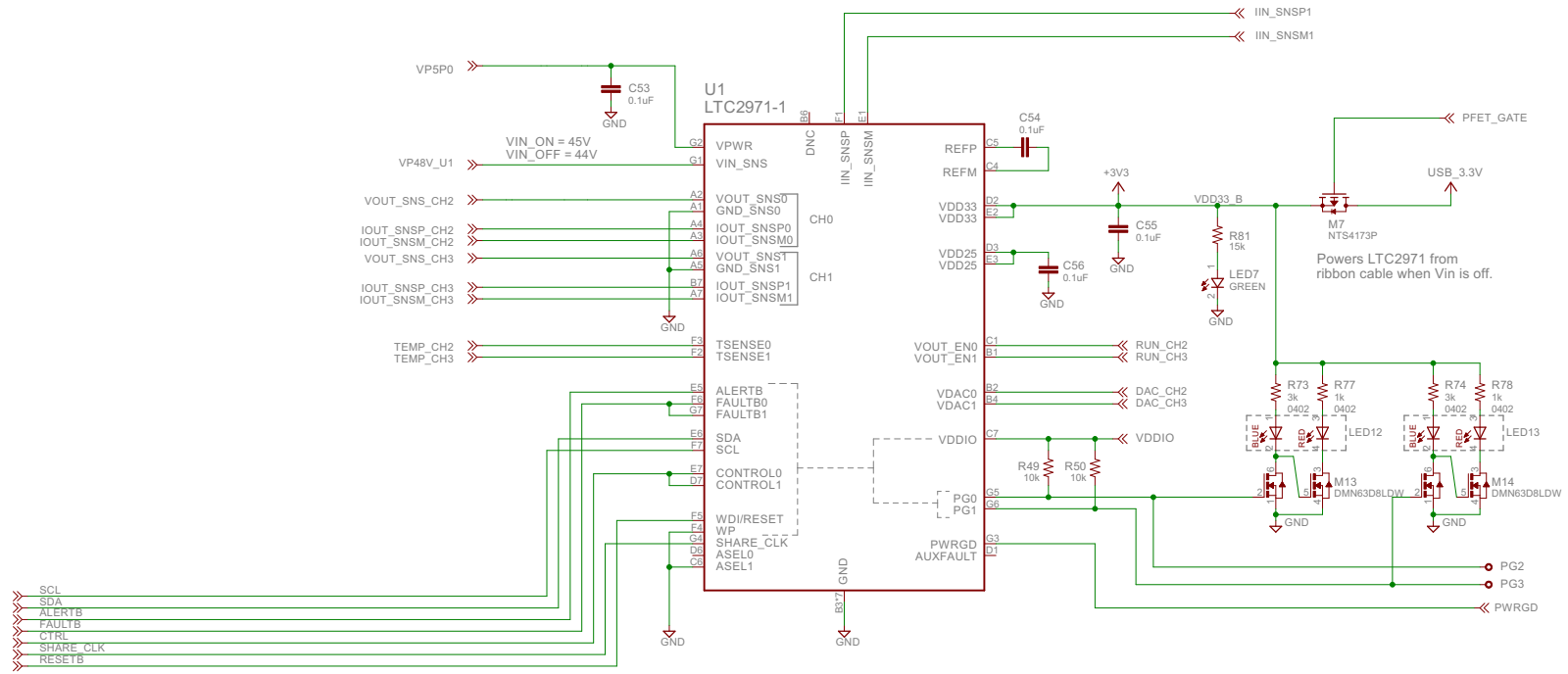
1. ALL RESISTORS ARE 1% 0603.
2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE		APPROVALS		 	1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408) 422-1900 www.analog.com
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE. THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		PCB DES. MIKE P.			
		APP ENG. MIKE P.		SIZE: B	IC NO.: LTC2971 DEMO CIRCUIT 2875A
		SCALE = NONE		DATE:	REV: 1 SHEET: 7/9

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019

LTC2971-1

2-CHANNEL +/- 60V POWER SYSTEM MANAGER



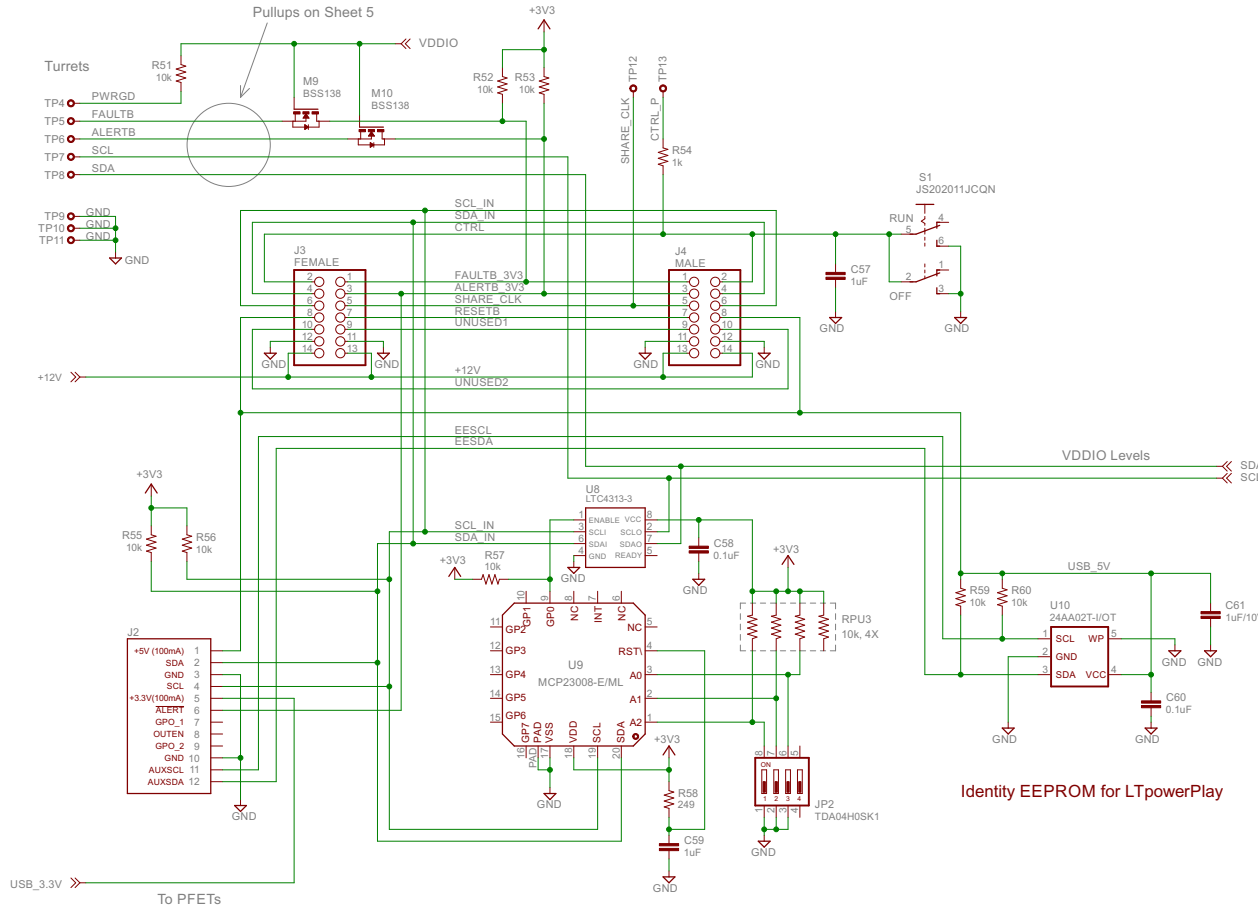
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UNLESS OTHERWISE SPECIFIED:

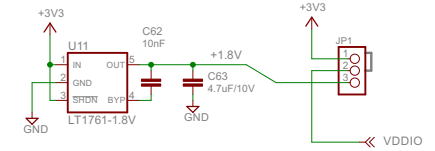
1. ALL RESISTORS ARE 1% 0603.
2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE		APPROVALS			1630 McCarthy Blvd. Folsom, CA 95630 Phone: (916) 422-1900 www.analog.com	
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		PCB DES. MIKE P.	APP ENG. MIKE P.		TITLE: LTC2971 DUAL-CHANNEL 60V POWER SYSTEM MANAGER	
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		SCALE = NONE	DATE:	SIZE IC NO.	LTC2971 DEMO CIRCUIT 2875A	REV: 1
				SHEET: 8/9		

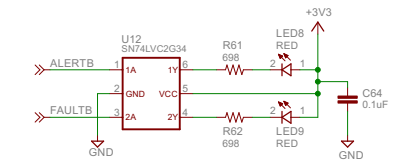
REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	1	PROTOTYPE	MIKE P.	9-5-2019



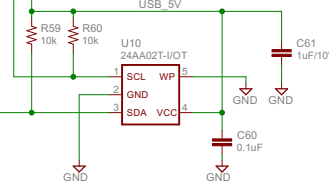
VDDIO Strapping



ALERTB and FAULTB Indicators



Identify EEPROM for LTPowerPlay



UNLESS OTHERWISE SPECIFIED:
 1. ALL RESISTORS ARE 1% 0603.
 2. ALL CAPACITORS ARE 25V 0603.

CUSTOMER NOTICE		APPROVALS			1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408) 422-1900 www.analog.com
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		PCB DES. MIKE P.			
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		APP ENG. MIKE P.			
TITLE: LTC2971 DUAL-CHANNEL 60V POWER SYSTEM MANAGER				SIZE IC NO. LTC2971 REV: 1	
SCALE = NONE				SHEET: 9/9	