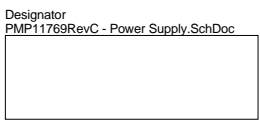


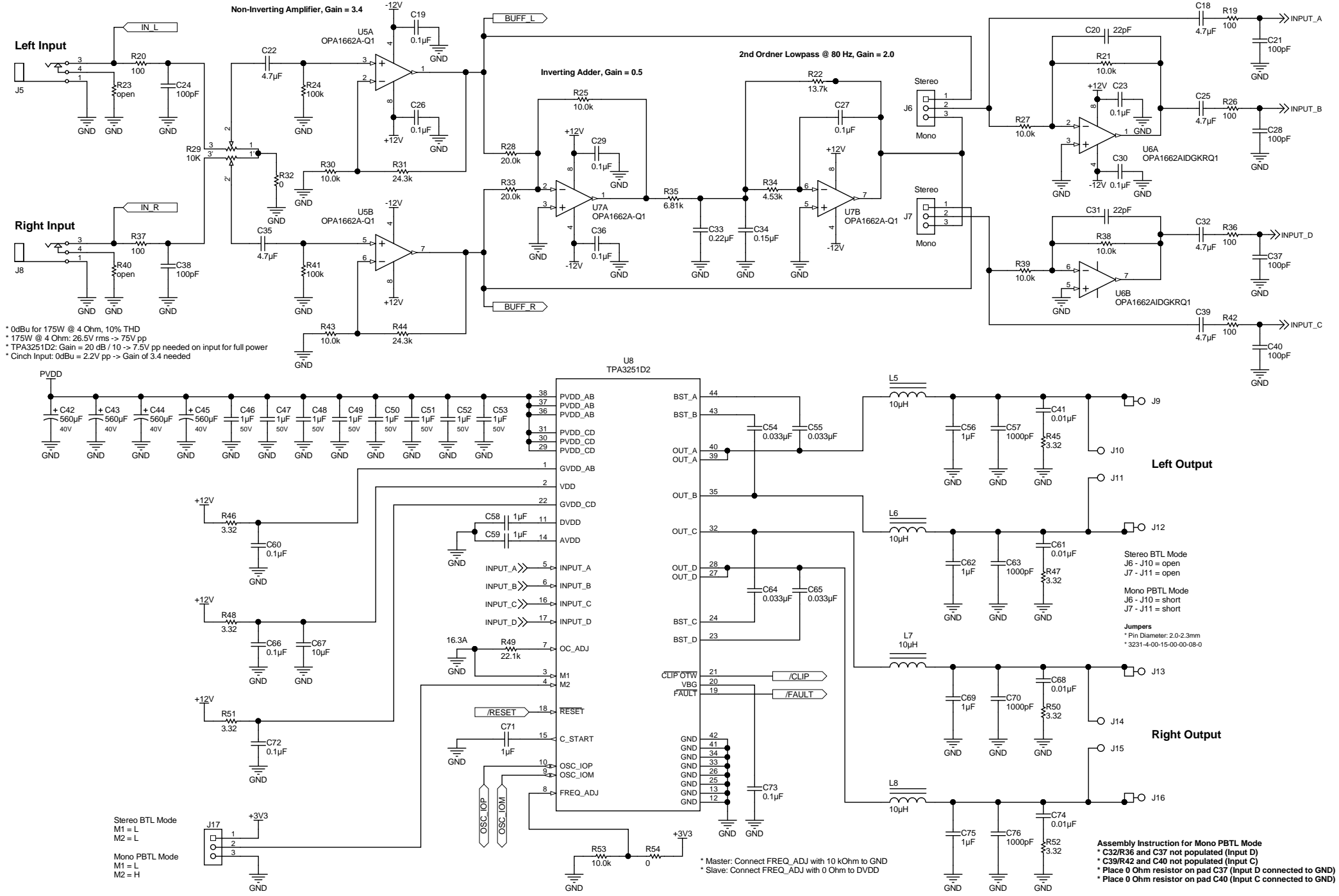
Connect pull-up resistor R7 (47.5k) to +3.3V instead of 12V



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Orderable: EVM orderable	Designed for: Public Release	Mod. Date: 2/20/2017
TID #: TID	Project Title: Automotive Audio Amplifier	
Number: PMP11769	Rev: C	Sheet Title: System
SVN Rev: Version control disabled	Assembly Variant: [No Variations]	Sheet 1 of 4
Drawn By: Matthias Ulmann	File: PMP11769RevC - System.SchDoc	Size: A3
Engineer: Matthias Ulmann	Contact: http://www.ti.com/support	





* 0dBu for 175W @ 4 Ohm, 10% THD
 * 175W @ 4 Ohm: 26.5V rms -> 75V pp
 * TPA3251D2: Gain = 20 dB / 10 -> 7.5V pp needed on input for full power
 * Cinch Input: 0dBu = 2.2V pp -> Gain of 3.4 needed

Stereo BTL Mode
 M1 = L
 M2 = L

Mono PBTL Mode
 M1 = L
 M2 = H

Stereo BTL Mode
 J6 - J10 = open
 J7 - J11 = open

Mono PBTL Mode
 J6 - J10 = short
 J7 - J11 = short

Jumpers
 * Pin Diameter: 2.0-2.3mm
 * 3231-4-00-15-00-08-0

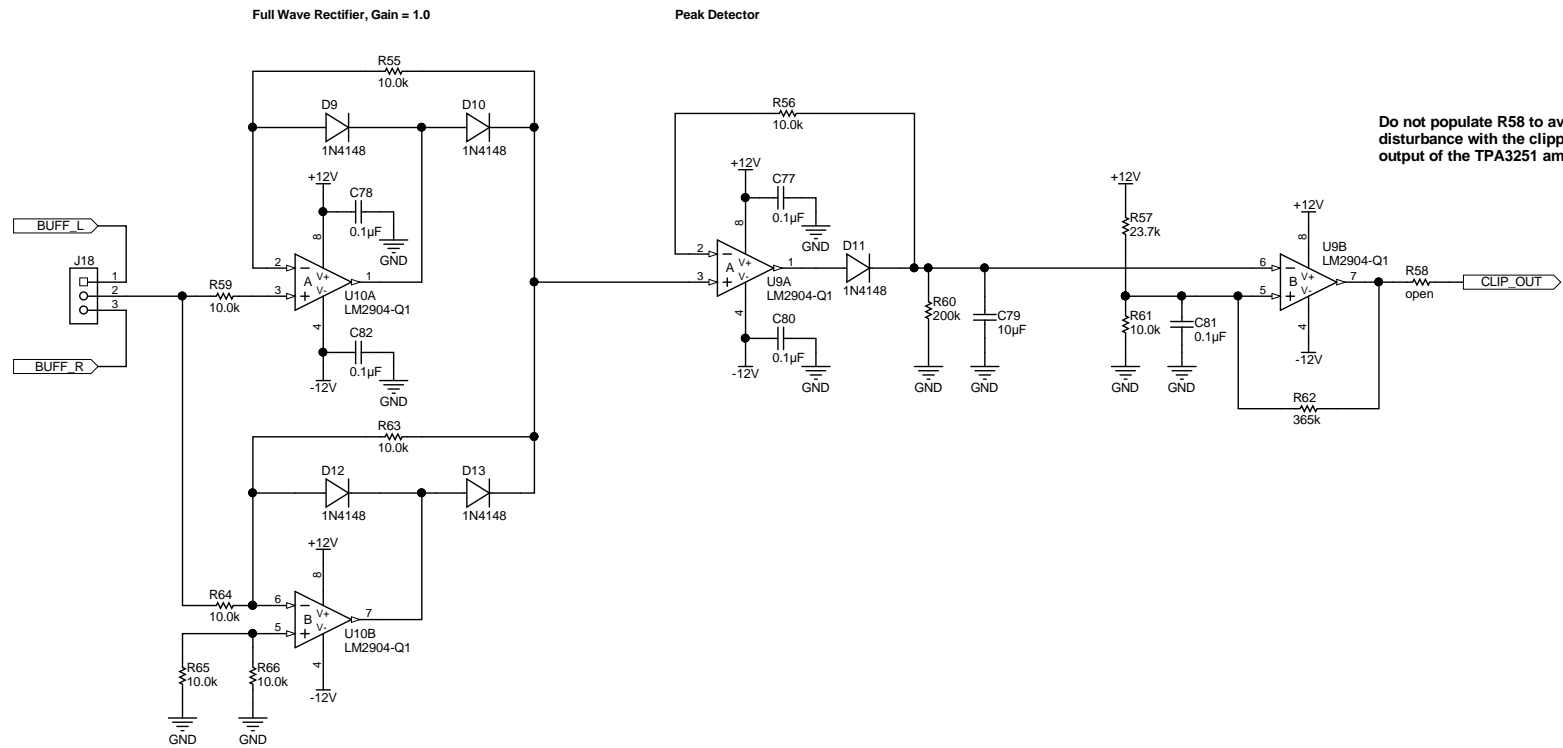
Assembly Instruction for Mono PBTL Mode
 * C32/R36 and C37 not populated (Input D)
 * C39/R42 and C40 not populated (Input C)
 * Place 0 Ohm resistor on pad C37 (Input D connected to GND)
 * Place 0 Ohm resistor on pad C40 (Input C connected to GND)

* Master: Connect FREQ_ADJ with 10 kOhm to GND
 * Slave: Connect FREQ_ADJ with 0 Ohm to DVDD

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TID #: TID	Project Title: Automotive Audio Amplifier	
Number: PMP11769	Rev: C	Sheet Title: Amplifier
SVN Rev: Version control disabled	Assembly Variant: [No Variations]	Sheet 2 of 4
Drawn By: Matthias Ulmann	File: PMP11769RevC - Amplifier_SchDoc	Size: A3
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Orderable: EVM orderable	Designed for: Public Release	Mod. Date: 2/20/2017
TID #: TID	Project Title: Automotive Audio Amplifier	
Number: PMP11769	Rev: C	Sheet Title: Clipping Detector
SVN Rev: Version control disabled	Assembly Variant: [No Variations]	Sheet 3 of 4
Drawn By: Matthias Ulmann	File: PMP11769RevC - Clipping Detector.SchDoc	Size: A3
Engineer: Matthias Ulmann	Contact: http://www.ti.com/support	

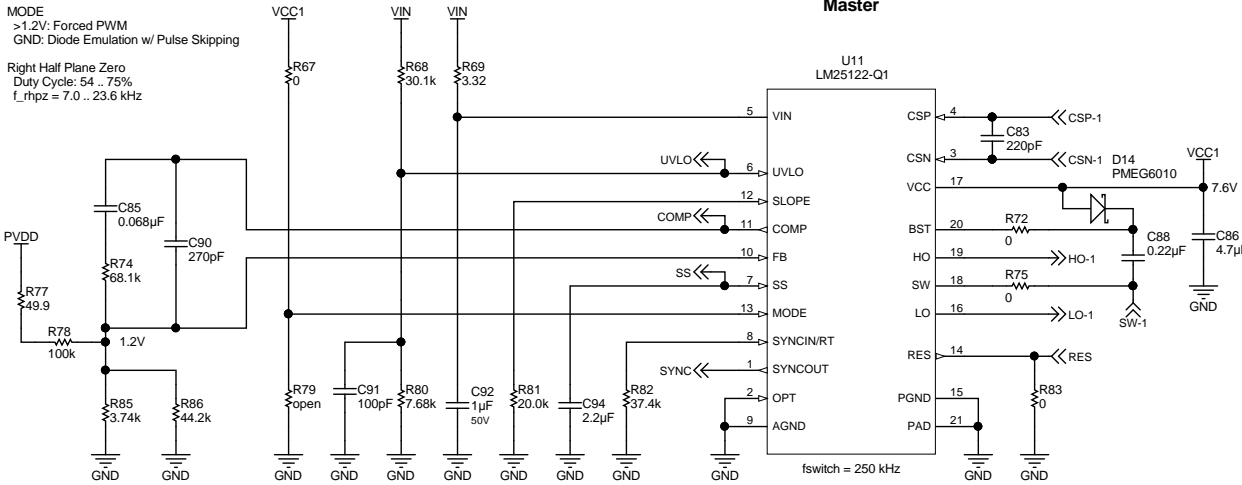


UVLO
Start @ 5.9V
Stop @ 5.6V

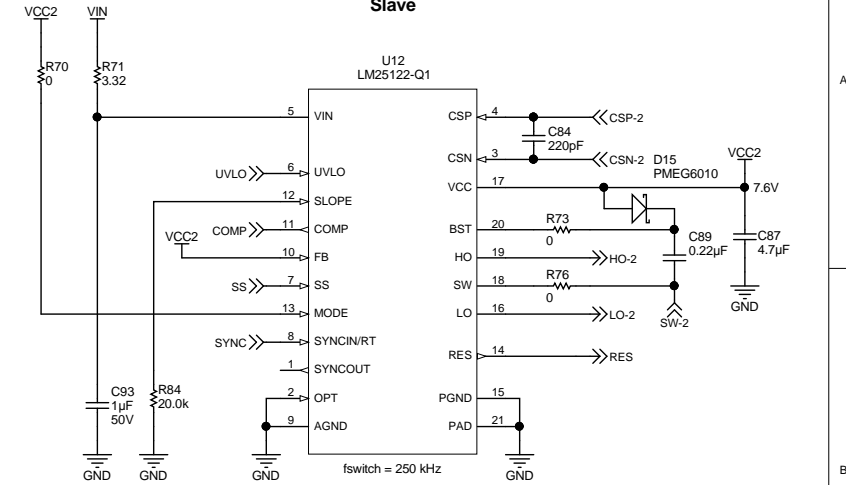
MODE
>1.2V: Forced PWM
GND: Diode Emulation w/ Pulse Skipping

Right Half Plane Zero
Duty Cycle: 54 .. 75%
 $f_{rhpz} = 7.0 .. 23.6$ kHz

Boost Controller Master



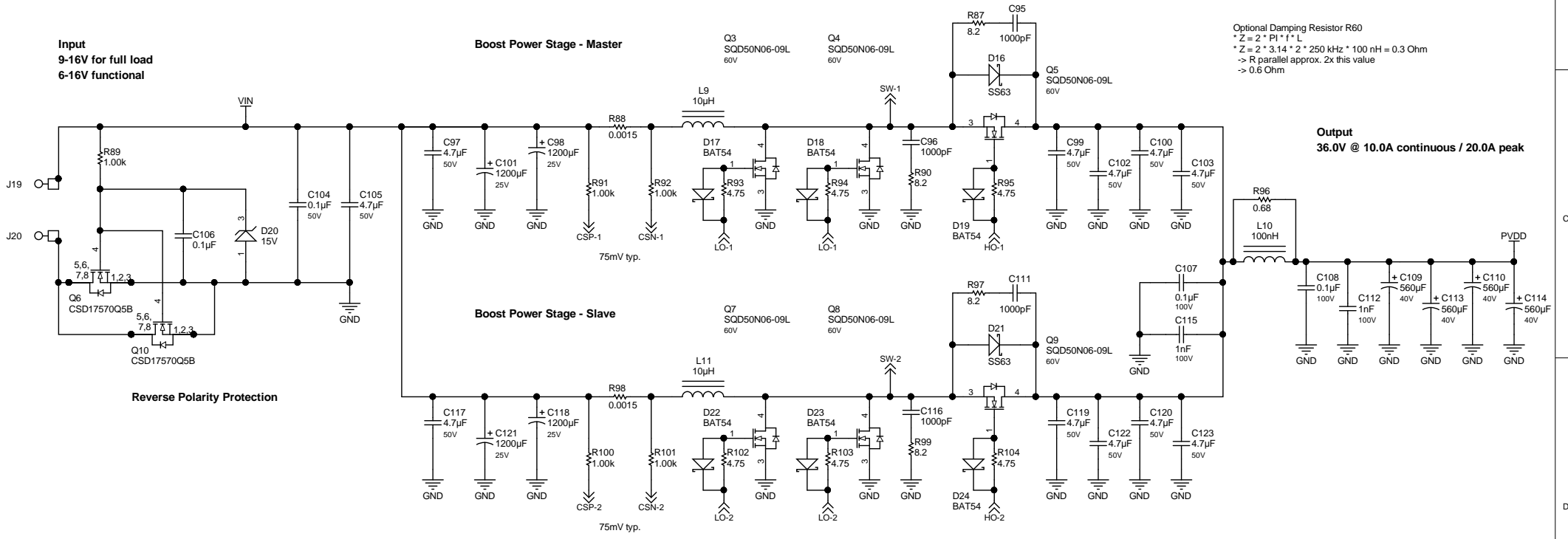
Boost Controller Slave



Input
9-16V for full load
6-16V functional

Boost Power Stage - Master

Q3 SOD50N06-09L 60V
Q4 SOD50N06-09L 60V



Optional Damping Resistor R60
 $Z = 2 * \pi * f * L$
 $Z = 2 * \pi * 3.14 * 2 * 250 \text{ kHz} * 100 \text{ nH} = 0.3 \text{ Ohm}$
-> R parallel approx. 2x this value
-> 0.6 Ohm

Output
36.0V @ 10.0A continuous / 20.0A peak

Reverse Polarity Protection

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TID #: TID	Project Title: Automotive Audio Amplifier	
Number: PMP11769	Rev: C	Sheet Title: Power Supply
SVN Rev: Version control disabled	Assembly Variant: [No Variations]	Sheet 4 of 4
Drawn By: Matthias Ulmann	File: PMP11769RevC - Power Supply_SchDoc	Size: A3
Engineer: Matthias Ulmann	Contact: http://www.ti.com/support	



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