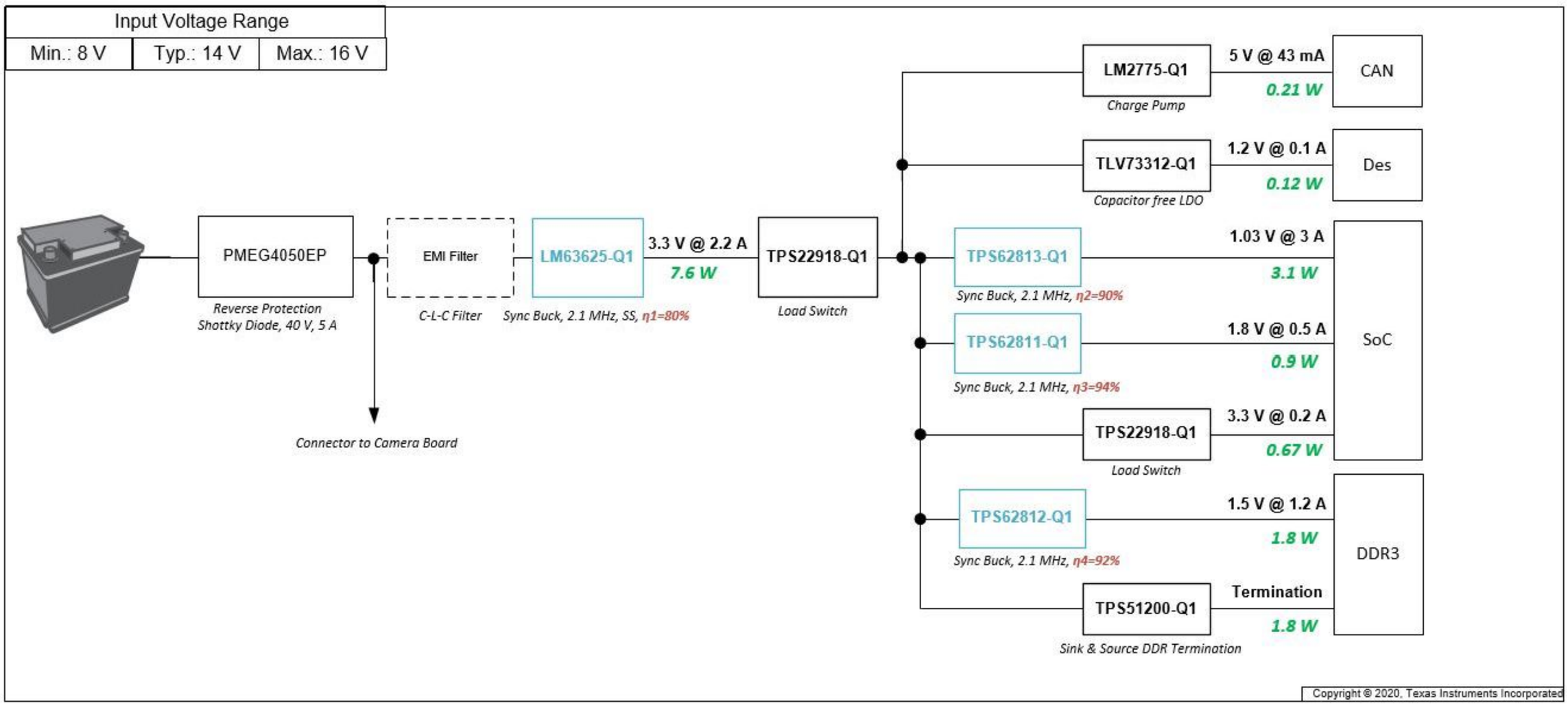
| Revision History | | | | |
|---|---|---|---|---|
| Rev | ECN # | Approved Date | Approved by | Notes |
| A | N/A | 10/29 | I.Weiss | *** PRELIMINARY SCHEMATIC **** |
| B | | 11/29 | I.Weiss | *** Add Electrolytic Caps, Layout **** |





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|---|---|---|---|
| Orderable: ChangeMe in variant | | Designed for: Public Release | Mod. Date: 11/29/2019 |
| TID #: N/A | | Project Title: Automotive Power Supply for Monitoring System | |
| Number: PMP30785 | Rev: B | Sheet Title: | |
| SVN Rev: Not in version control | | Assembly Variant: 001 | Sheet: 1 of 4 |
| Drawn By: | | File: PMP30785RevB_Cover.SchDoc | Size: B |
| Engineer: I.Weiss | | Contact: http://www.ti.com/support | |

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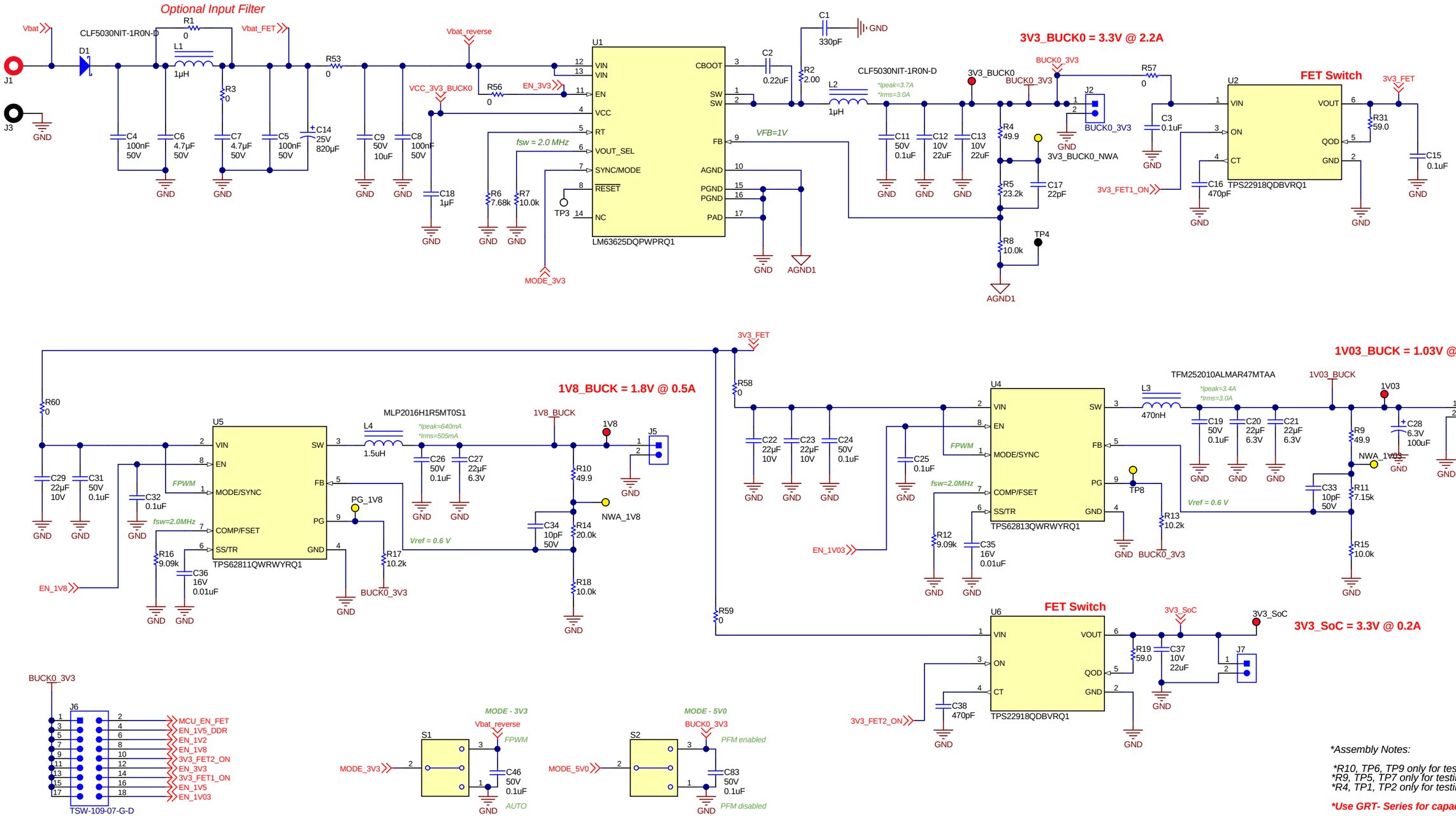
# Supply for SoC - E2

**Input Voltage:**
**8V ... 16V (14V typ)**




*Assembly Notes:

*R10, TP6, TP9 only for testing
*R9, TP5, TP7 only for testing
*R4, TP1, TP2 only for testing

***Use GRT- Series for capacitors**



| | | | |
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| Number: PMP30785 | Rev: B | Sheet Title: | |
| SVN Rev: Not in version control | | Assembly Variant: 001 | Sheet: 2 of 4 |
| Drawn By: | | File: PMP30785RevB_SoC.SchDoc | Size: B |
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# Supply for DDR3

**1V5_BUCK = 1.5V @ 1.2A**

**3V3_FET**

3V3_FET — R63 0

U12 TPS62812QWRWYRQ1
- VIN, EN, MODE/SYNC, COMP/FSET, SS/TR, SW, FB, PG, GND
- L7 680nH (TFM322512ALMAR68MTAA, *Ipeak=1.5A, *Irms=1.2A)
- C64 22µF 10V; C65 22µF 10V; C66 50V 0.1uF
- C67 0.1uF
- FPWM; fsw=2.0MHz
- EN_1V5
- R42 9.09k; C69 16V 0.01uF
- PG_1V5_BUCK; R43 10.2k; BUCK0_3V3
- C61 50V 0.1uF; C62 22µF 6.3V
- Vref = 0.6 V
- 1V5_BUCK; R40 49.9; 1V5_BUCK_NWA
- C68 10pF 50V; R41 15.0k; R44 10.0k
- J12 1V5_BUCK

## Termination

1V5_BUCK — J14 — VLDO_REF

R64 0

U13 TPS51200QDRCRQ1
- VIN, PGOOD, EN, REFIN, VLDOIN, VO, VOSNS, REFOUT, EP, GND, PGND
- PG_1V5_DDR; R45 102k
- EN_1V5_DDR
- VLDO_REF; R49 10.1k; R50 10.1k; C75 1nF 25V
- VLDOIN; C76 10µF 25V; C77 10µF 25V
- C70 4.7µF 25V
- C74 100nF 16V
- VTTREF
- C71 10µF 25V; C72 10µF 25V; C73 10µF 25V
- 1V5_DDR — J16

# Supply for DES

**1V2_LDO = 1.2V @ 100 mA**

R30 0

U15 TLV73312PQDRVRQ1
- IN, EN, NC, NC, OUT, GND, PAD
- C80 1µF 10V
- Optional
- C81 1µF 10V
- 1V2_LDO — J18
- EN_1V2

# Connect to CAM

OUT_ECU — J8 PEC06SAAN

C39 50V 10uF; C45 50V 10uF; C54 560nF 10V

# Vbat_FET

Vbat_FET — C10 25V 820µF; C30 50V 0.1uF

R20 0

U3 TPS1H200AQDGNRQ1
- VS, IN, FAULT, DIAG_EN, CL, OUT, DELAY, GND, PAD
- MCU_EN_FET; R22 10k; R24 10k; R26 10k; R27 10k
- CL=1A; R28 499

MCU Control — J19

# Supply for CAN

BUCK0_3V3 — R21 0

U14 LM2775QDSGTQ1
- VIN, EN, PFM, OUTDIS, VOUT, C1+, C1-, GND, GND
- C78 10µF 10V
- MODE_5V0
- OUTDIS=High Z
- C82 1µF 10V
- 5V0_CP — 5V0_CP = 5V @ 43 mA
- C79 10µF 10V
- J17 5V0_CP



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|---|---|---|
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| TID #: N/A | Project Title: Automotive Power Supply for Monitoring System | |
| Number: PMP30785 Rev: B | Sheet Title: | |
| SVN Rev: Not in version control | Assembly Variant: 001 | Sheet: 3 of 4 |
| Drawn By: | File: PMP30785RevB_DDR_CAN.SchDoc | Size: B |
| Engineer: I.Weiss | Contact: http://www.ti.com/support | |

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FID1 FID2 FID3

PCB Number: PMP30785
PCB Rev: A

PCB
LOGO
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| Variant/Label Table | |
|---|---|
| Variant | Label Text |
| 001 | ChangeMe! |
| 002 | ChangeMe! |
| | |
| | |
| | |
| | |
| | |

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.



| | | | |
|---|---|---|---|
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| Number: PMP30785 | Rev: B | Sheet Title: | |
| SVN Rev: Not in version control | | Assembly Variant: 001 | Sheet: 4 of 4 |
| Drawn By: | | File: PMP30785RevB_Hardware.SchDoc | Size: B |
| Engineer: I.Weiss | | Contact: http://www.ti.com/support | |

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