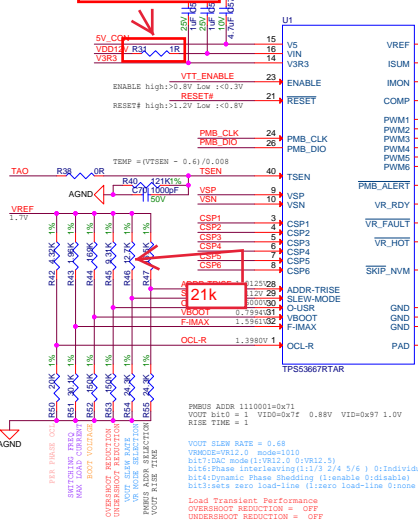




$I_{pp} = (I_{MAX}/n) \times V_{RIPPLE} = (240/6) \times 26.7\% = 10.68\text{ A}$
 $V_{RIPPLE} = 250 \times 500$
 $L_{AV} = dt/Ip$
 $= (VIN \times (1 - D) \times VOUT) \times VOUT / (Fsw \times VIN \times I_{pp})$
 $= (12.6 \times (0.88) \times 0.88 / 500000) \times 12.6 / (6.10.68$
 $= 153\text{uh}$

0402 package ok



$R_{sum} = R_{L1} / (n \times (I_{sum} \times R_{DCR_{L1}}))$
 $= 0.25\text{mohm} / (0.5 \times 5\text{mohm} \times 1/6) = 0.4\text{K}$

BaseFoot 032D
 MAX_VDD_Current:197A
 AC_Transient_Current_Step:80A
 Sloop_Margin:25mV
 Sloop: 0.25mohm
 VDD_000:880mV
 VDD_001:880mV
 VDD_002:880mV
 VDD_100:775mV
 VDD_101:875mV
 VDD_102:825mV
 VDD_111:925mV

$R_{sum} = 0.85V \times (I_{max} \times R_{ext} \times F)$
 $= 0.85V \times (240 \times 3\text{mohm} \times 1/33000)$
 $= 24.3\text{K}$

compensation zero at 19.7 kHz and the compensator pole at 1.65 MHz:

Skipip-nm <=20K pinstrap
 Skipip-nm >=100K NVM

PMB0S ADDR:1110001+0x71
 VOUT bit0 = 1 VDD0=0x7f 0.88V VDD0x97 1.0V
 RISE TIME = 1

$V_{OUT_SLEW_RATE} = 0.68$
 $V_{RMS_VOUT} = 0.2$ mode=1010
 $bit7: DAC \text{ mode}(1:VR12, 0:VR11, 3)$
 $bit8: Phase \text{ interference}(1:2/4, 2/4, 5/6, 0:Individual)$
 $bit4: Dynamic \text{ Phase \text{ Shedding}}(1:enable, 0:disable)$
 $bit3: Auto \text{ load-Load}(1:enable, 0:disable)$
 $bit2: Auto \text{ Load-Load}(1:enable, 0:disable)$

Load Transient Performance
 OVERSHOOT REDUCTION = OFF
 UNDERSHOOT REDUCTION = OFF

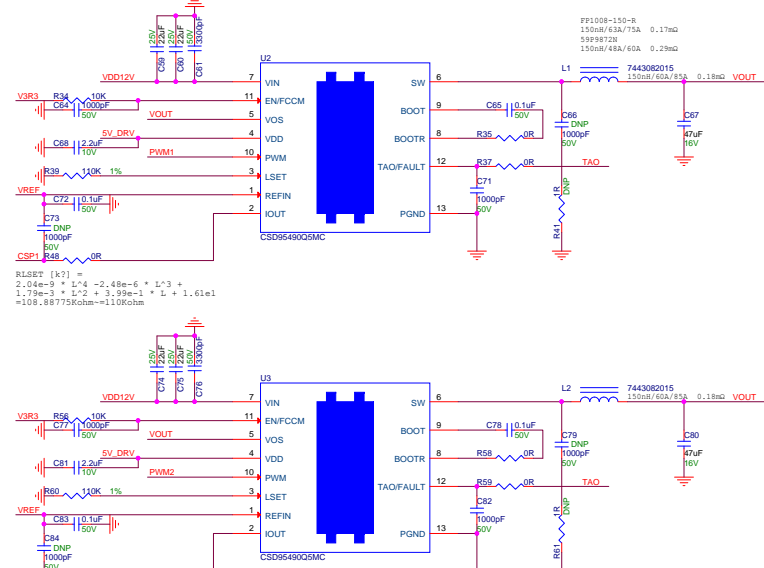
VBOOT = 0.88V VDD0x7f+0111_111_1

SWITCHING FREQ = 500KHz
 MAX_LOAD_CURRENT = 239.85A ~>240A I_max(VF_max/VREF)*236 = 0.3
 ESR_parallel = 68n

24.3k and 6800pF

u = UNDERSHOOT <> OVERSHOOT
 Tau=80ns
 $Q_{v1}/2 \times \tau \times I_{step1}/2 \times 180ns \times 80 \times 47.20\text{u}$
 $Tau=222ns$
 $Q_{v1}/2 \times \tau \times I_{step1}/2 \times 222ns \times 80 = 88.88\text{u}$

$C_{out_ripple} = (P \times P \times \Delta V_{out} \times (DCI)) \times (10.68A / (8 \times 500000 \times 0.01 \times 0.9) \times 296.67\text{u})$
 $C_{out} = (delta \text{ Vout}(ACI) \times I_{step}(DCI)) \times 257\text{u}(0.05 \times 39 \times 80 = 0.25\text{mohm}) \times 113.88\text{u}$
 $C_{out} / (delta \text{ Vout}(ACI) \times I_{step}(DCI)) = 88.88\text{u} / (0.05 \times 39 \times 80 = 0.25\text{mohm}) = 1367.4\text{uF}$



Add one more 22uF/0805 cap here replace 3.3nF cap with 1uF/0402/25V.

the package for R and C here are 0402

Add 2.2 ohm series resistor for 5V_DRV

These changes applies to all powerstages.

