



CS Xfmr T1:
 Irms = 6.75Arms -> Pv 35mW
 Ipri = 7.60A + 1.064Apk (pri) + 1.235Apk (sec refl) = 9.94Apk
 /100 = 99mApk @36Vin
 Ucsmin = 430mV
 -> apparent res. 430mV/99mA -20% for transient

XFR T2:
 Npri : Nsec = 4 : 1
 Npri : Naux = 4 : 2
 Lpri = 100uH, di(pri) = 1.064Ap @36Vin

replaced clamping by RC snubber
 C1 DNP
 R1 DNP

35.34Arms
 39.26Apk
 8.52App
 estimated windings losses <1.25W
 estimated total losses L1 <1.50W

estimated total effcy:
 - losses per FET around 1W, by 6xFETs results in 6W
 - dead time losses Schottky D3 160mW
 - losses clamping Q3 124mW
 - losses xfmr T2 2W
 - losses ind L1 1.5W
 - losses xfmr T1 35mW + 36mW R6)
 - losses primary drv 60mW
 - losses secondary drv. 336mW
 - housekeeping losses U1, U2, U3 300mW (out of bias/Vout)
 - bias losses R8, R10 46mW
 = losses around 11W, needs thermal interface
 = efficiency around 94%

duty cycle = 62.59% @ 34Vin (UVLO)
 59.11% @ 36Vin
 29.56% @ 72Vin

*** sync. rectifier FETs ***
 place RC snubber closest to SR

*** low side control FETs ***

RevC:
 - if there is no need for REMOTE SENSE go for rugged TL431
 - keep in mind that TL103 is between NEXFETs and magnetics:
 1) so do a proper choice for placement
 2) root a solid ground shielding around this E/A

Assembly RevC:
 1) C104 backpacked R17, same C105/R28
 2) C103, C106 directly at IC pins, use 0402
 3) C102, directly at IC pins, THT across IC
 4) R102, scratch copper trace
 5) C101/R101 left of Q2

NOTES:
 1) R32 for test purposes only
 2) full load needs airflow >200l/m (1m/s)
 25A w/ convectional cooling
 3) parts des >100 placed externally

Title			Active Clamp Forward, 5V / 35Amax		
Size	Number	PMP5711		Rev	C
Date	05/26/2011	Drawn by	B.Geck		
Filename	PMP5711RevC_PADS.sch	Sheet	1	of	1



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