

Application for single AC stage input

	Vin	220 Vac	
Vin range	Vinnom	390 Vdc	
输入电压参数	Vinmin	360 Vdc	=Vinnom*1.414*0.9*0.85
	Vinmax	420 Vdc	=Vinnom*1.414*1.1
Output information	Vo	12 Vdc	
输出参数	Io	18.5 A	
	Vf	0.56 Vdc	
	Po	232.36 W	=(Vo+Vf)*Io
Frequency information	Fr	100 KHz	
normalized frequency	Xmax	1.5	
开关频率参数	Fmax	150 KHz	=Xmax*Fr
	Fstart	250 KHz	=Fr*2.5
HB midpoint estimated parasitic capacitance	Coss	80 pF	
Cstray an additional	Cstray	10 pF	
Minimum dead time	Td	200 nS	
conversion ratio	Mnom	0.032205128	=(Vo+Vf)/Vinnom
增益	Mmin	0.029904762	=(Vo+Vf)/Vinmax
	Mmax	0.034888889	=(Vo+Vf)/Vinmin
a at nominal voltage	a	15.52547771	=(0.9 <sup>~</sup> 1.1)/2/Mnom
Calculate k so that the converter will work at xmax at zero load and max. input voltage	k	7.222222222	=2*a*Mmin/(1-2*a*Mmin)*(1-1,
physical turn ratio	Kmax	10	
	Knom	7.222222222	=MIN(k, Kmax)
Qmax1, to stay in the ZVS effective load resistance: Qmax2, to ensure ZVS at zero load.	Nn	14.55076378	=a*(knom/(1+knom)) <sup>^</sup> 0.5
	Qmax1	0.859609822	=1/(knom*2*a*Mmax)*(((2*a*Mr
	Re	121.0824771	=8*a <sup>^</sup> 2*Vo/(3.1415927 <sup>^</sup> 2*Io)
	Qmax2	0.618741429	=(3.1415927/4)*(1/((1+knom) <sup>^</sup>
Choose Qs, such that Qs =< min(Qmax1, Qmax2) will work at min.input voltage and max. load.	Qs	0.587804357	=0.95*MIN(Qmax1, Qmax2)
	Xmin	0.939648464	=(1/(1+knom*(1-(1/(2*nn*Mmax
Min switching frequency	Fmin	93.96484642 KHz	=Fr*Xmin
Resonant tank calculation	Zr	71.17280759	=Re*Qs
	Cs	22.36176233 nF	=10 <sup>^</sup> 6/(2*3.1415927*Fr*Zr)
	Ls	113.2750397 uH	=Zr*1000/(2*3.1415927*Fr)
	Lp	818.0975093 uH	=k*Ls

Parameters of L6599

Cf 470 pF  
Rfmin 7.547714759 Kohm =  $10^6 / (3 * Cf * Fmin)$   
Rfmax 12.65669518 Kohm =  $Rfmin / (Fmax / Fmin - 1)$   
Rss 4.545256898 Kohm =  $Rfmin / (Fstart / Fmin - 1)$   
Css 0.6600287 uF =  $3 / Rss$

0.464286  
0.439189

311.08

正常输入电压

最小输入电压

最大输入电压

输出电压

输出电流

输出二极管的正向压降

输出功率

谐振网络的谐振频率

最大工作频率

起机频率

最小死区时间

正常增益

最小增益

最大增益

等效圈比

$\sqrt{X_{max}^2}$

$n_{ax}^2 / ((2 * n_n * M_{max})^2 - 1) + k_{nom})^{0.5}$

$* X_{max}) * (T_d * 1000) / (R_e * (2 * C_{oss} + C_{stray}))$

$x)^{(1 + (Q_s / Q_{max1})^4)}^{0.5}$