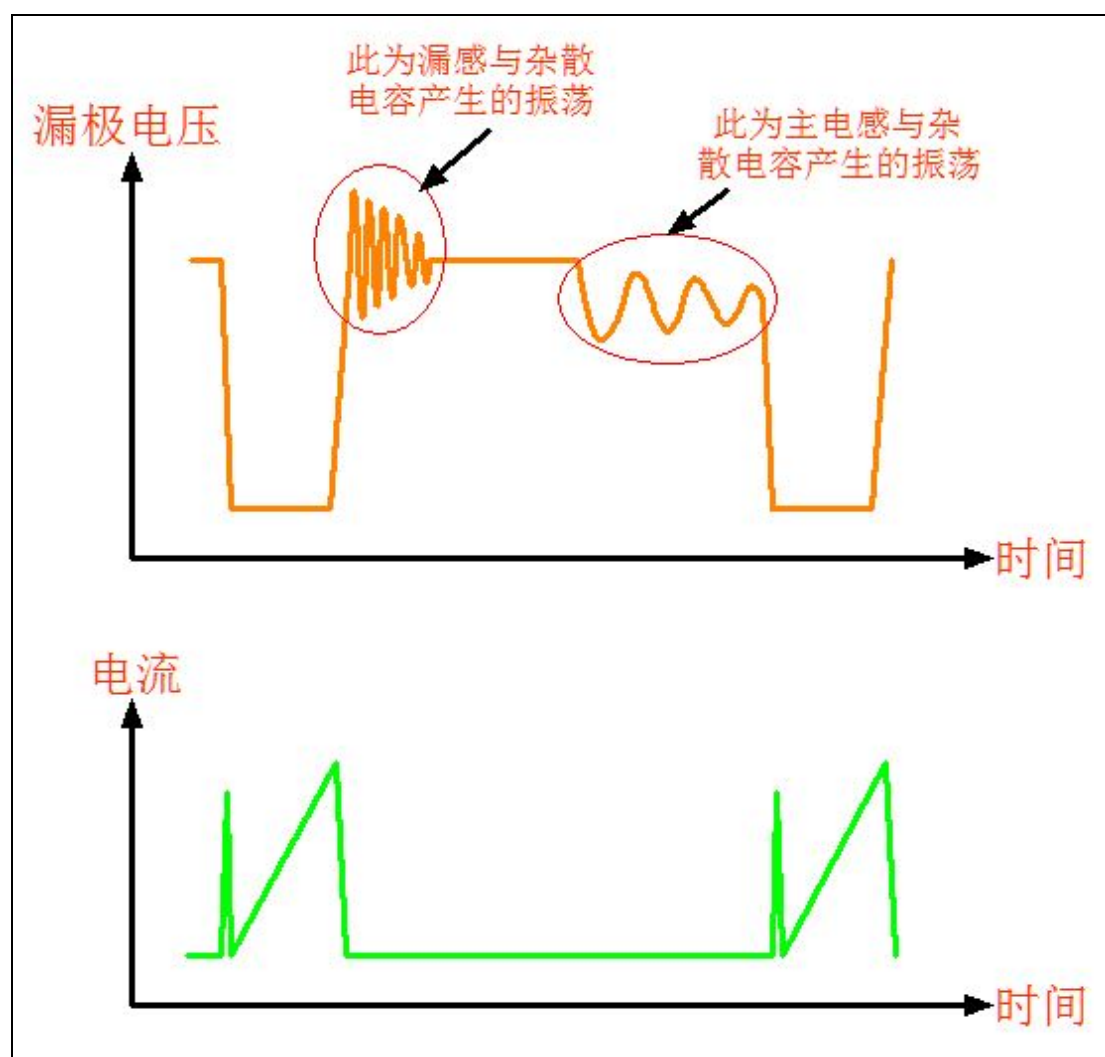
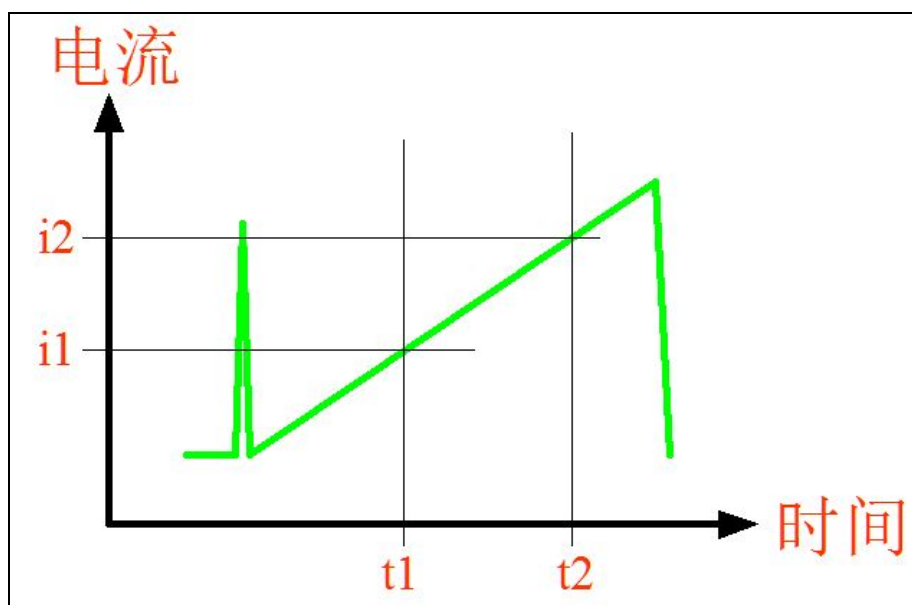
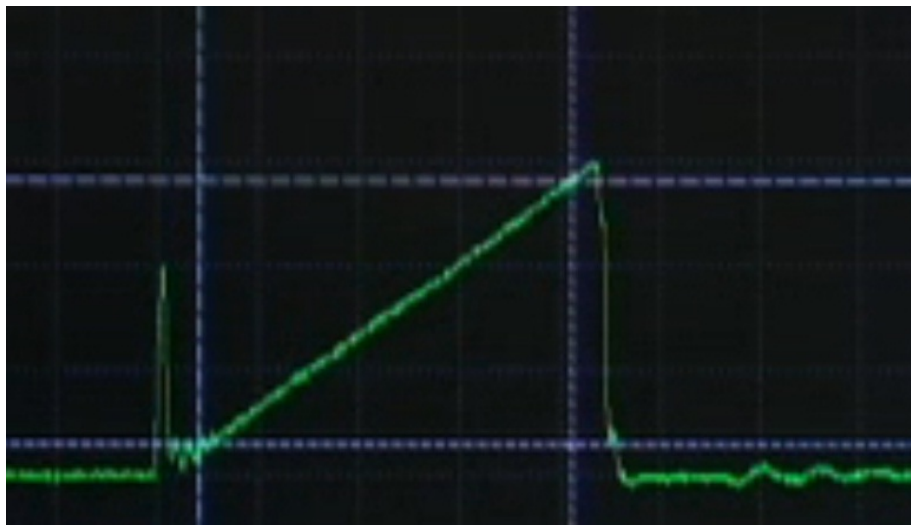


这种方式测试出的漏感值和杂散电容最接近实际使用情况。用此法测试出的参数比用电桥测试出的参数更实用。以下测试是在反激拓扑中进行的。

示波器测试波形如下(电流断续模式下)



1: 用示波器测高频变压器主电感



由示波器可得以下参数: (在三角波斜坡上取任意段即可)

$$V_{DC}=320V$$

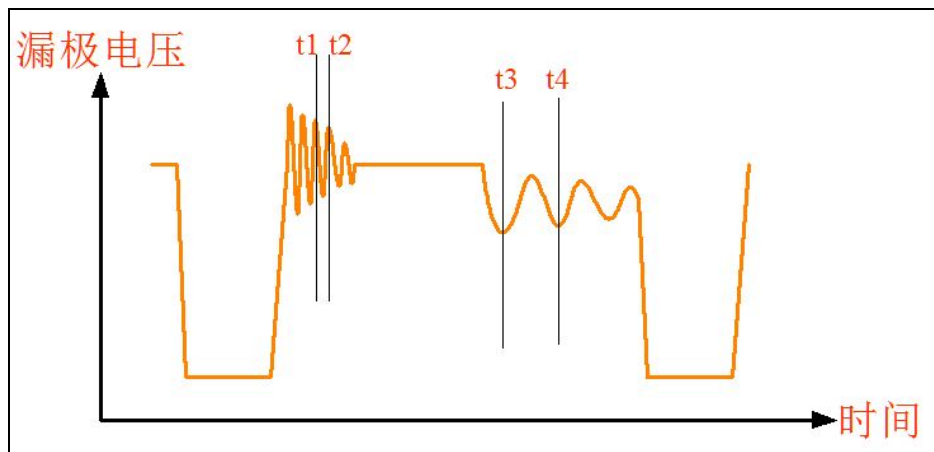
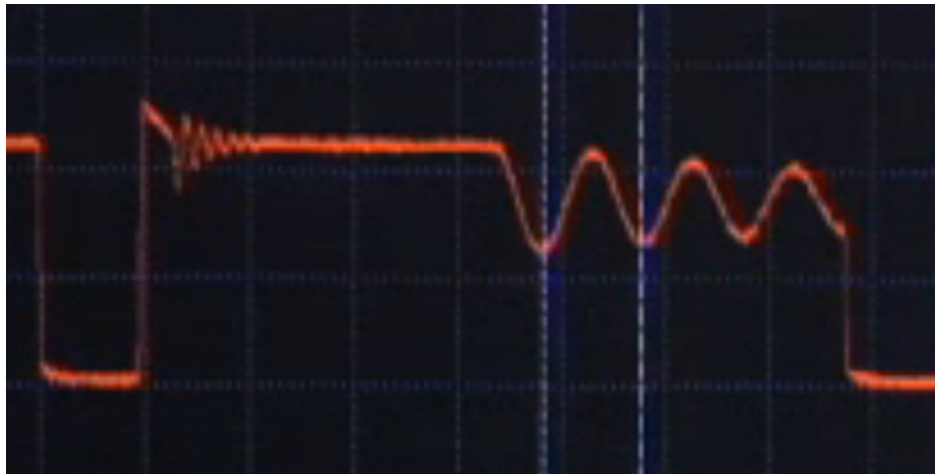
$$\Delta t=t_2-t_1=1.85\mu S$$

$$\Delta i=i_2-i_1=504mA$$

由式 $V=L(di/dt)$ 可得:

$$L_m=V(dt/di)=320 \times (1.85/504)=1.17mH$$

2: 用示波器测高频变压器杂散电容



由示波器测出频率

$$f_1 = 1/(t_4 - t_3) = 525 \text{ KHz}$$

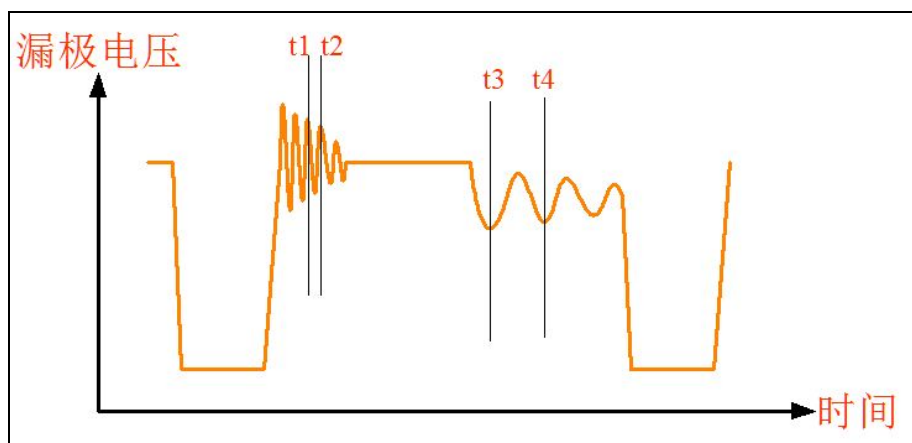
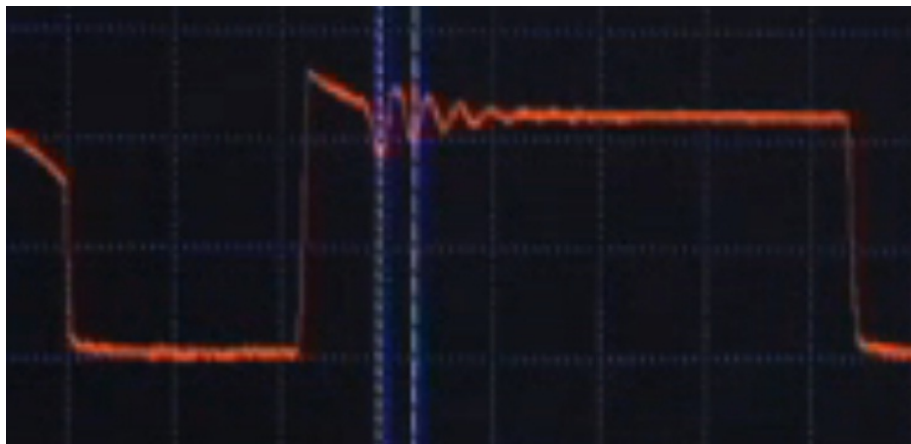
且已算出 $L_m = 1.17 \text{ mH}$

由式 $C = 1/[2 \pi f]^2 \times L$

可得杂散电容:

$$C_r = 1/[2 \pi \times 525 \times 10^3]^2 \times 1.17 \times 10^{-3}] = 78.5 \text{ pF}$$

3: 用示波器测高频变压器漏电感



由示波器测出频率

$$f_2 = 1/(t_2 - t_1) = 3\text{MHz}$$

且已算出杂散电容 $C_r = 78.5\text{pF}$

$$\text{由式 } L = 1/[(2\pi f)^2 \times C]$$

可得漏感:

$$L_r = 1/[(2\pi \times 3 \times 10^6)^2 \times 78.5 \times 10^{-12}] = 35.8\mu\text{H}$$