filament switch circuit

5 V TTL
BNC input

330
4N35
opto-isolator

2.2 k

V = 9 Volt battery
decay time = 1 μs
rise time = 2 μs
I(max ave) = 7 A
I(max peak) = 100 A

IRF542

heater bias
filament bias

filament switch circuit

current in banana (red)

filament circuit

current out banana (black)