This application note provides recommendations for the enable design to operate VisIC's V22N65A & V22S65A ALL-Switch.

Description of Enable Operation

The enable circuit is based on a Vcc voltage monitor. It ensures that GaN transistor will be enabled in accordance with the internal Vcc UV of the Driver, and Gate threshold voltage of the GaN transistor.
On *turn on Fig.2:* Vcc voltage is rising up from 0 to 15V. At 9-9.5V the Vcc voltage monitor send Enable signal to the ALL Switch, at 12-12.5V UV function inside the driver turns the driver to operation mode.
On *turn off fig.3:* Vcc voltage is falling down to zero. at 10-11V, UV function inside driver turns driver to *off* mode, At 9-9.5V the Vcc voltage monitor sends disable signal to shut down GaN transistor.
The threshold voltage of the GaN transistor is at 7.5V.

turn on/off voltage of monitor enable circuit:

GaN threshold voltage < **Enable voltage** < internal UV of driver

Figure 1 is a simple schematic application for the Enable circuit.

BOM:

U1	ISO-Driver	SI826
Q1	ALL Switch	VN22N65A
Q2	NPN transistor	DRC3113ZOL or eq.
C1	Ceramic capacitor X7R	10uf 25V
R1	resistor	2 ohm 2w 5%
R2	resistor	1k 0.2w 5%
R3	resistor	10k 0.2w 5%
D1	reference diode	BZT52H-B9V1 2% or eq.

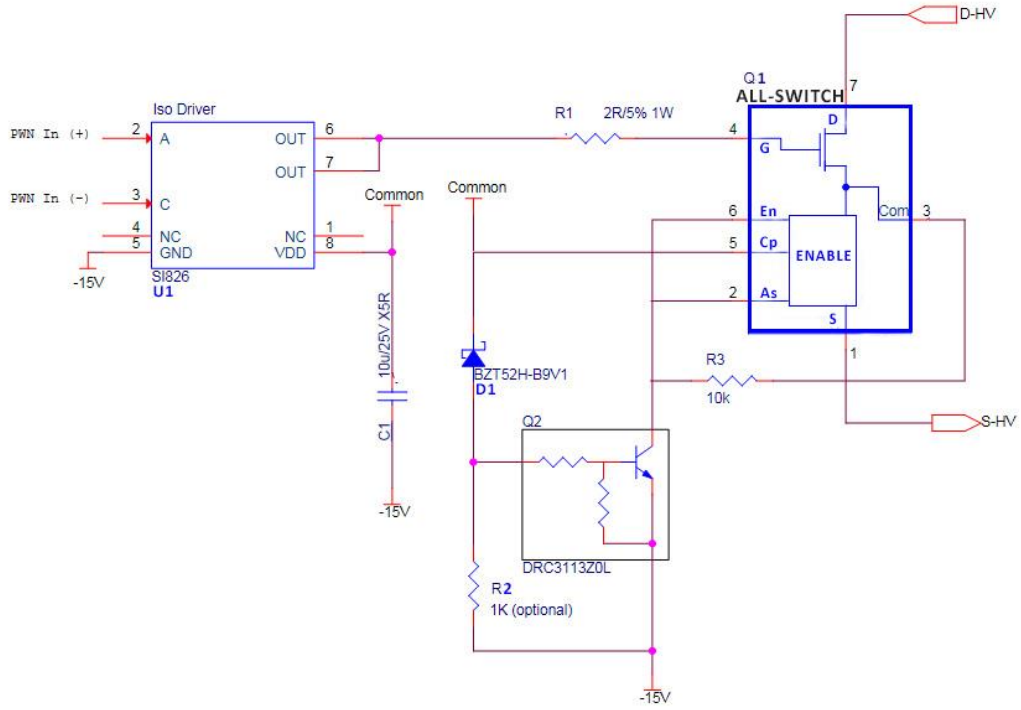

Figure 1

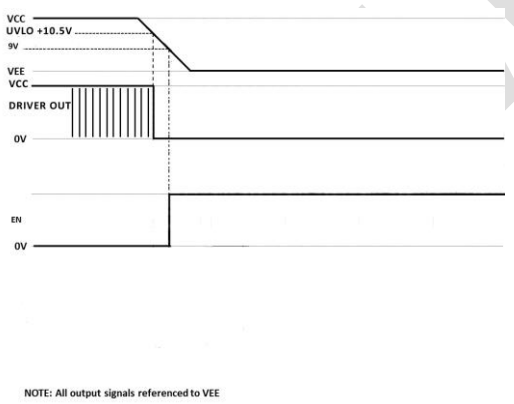

Figure 3. Turn Off (voltages are ref. to -15V)

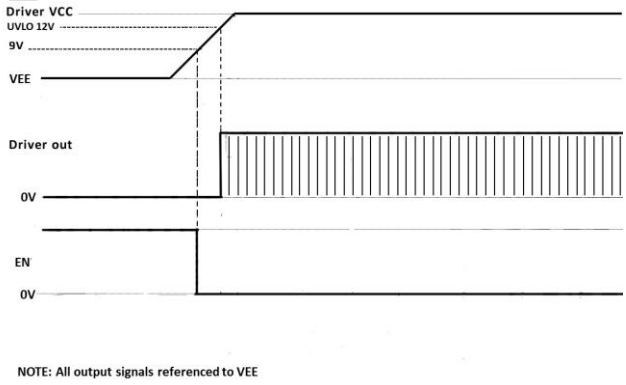

Figure 2. Turn On (Voltages are ref. to -15V)