

UCC24630 Question
Look at UCC 24630 data sheet page4.

6.1 Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted) ⁽¹⁾

		MIN	MAX	UNIT
V _{VDD}	Bias supply voltage, VDD	-0.3	30	V
I _{DRV}	Continuous gate current sink, DRV		50	mA
I _{DRV}	Continuous gate current source, DRV		-50	mA

Is this value small? With this current, I think that it can not drive the FET for rectification.

6.6 Timing Requirements

Over operating free-air temperature range, V_{VDD} = 12 V, T_A = -40°C to 125°C, T_A = T_J (unless otherwise noted)

PARAMETER		TEST CONDITION	MIN	TYP	MAX	UNIT
DRV						
t _R	DRV high-side rise time	V _{VDD} = 12 V, C _L = 3.3 nF, V _{DRV} = 2 V to 8 V		27	54	ns
		V _{VDD} = 5 V, C _L = 3.3 nF, V _{DRV} = 1 V to 4 V		50	100	ns
t _F	DRV low-side fall time	V _{VDD} = 12 V, C _L = 3.3 nF, V _{DRV} = 8 V to 2 V		20	54	ns
		V _{VDD} = 5 V, C _L = 3.3 nF, V _{DRV} = 4 V to 1 V		15	50	ns

Calculating from this table

t_R: typ → CV = It

I = CV/t = 3.3n*(8-2)/27n = 733[mA]

t_F

I = CV/t = 3.3n*(8-2)/20n = 990[mA]

I think that you have this ability only.

Actually, how much capacity does UCC 24630 have?

UCC24612: IVGPU=1A

IVGPD=4A

There is description.