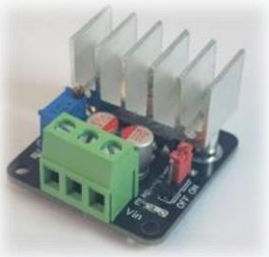
Fy1400-Buck_Adj

Imax = 10A, Vin = 4.5V~18V, Vo = 3V~6V, Buck

➢ Description



This module can provide 3V~6V adjustable voltage output under a wide voltage input of 4.5V-18V, with a maximum output current of 10A. The input voltage of the module needs to be higher than the output voltage in order to function properly. Both input and output are equipped with power indicator lights, high-quality solid-state capacitors are selected, and heat dissipation fins are installed to ensure that the module can work stably and reliably for a long time; Equipped with M3 fixing holes for easy external fixation of modules.

➢ Electrical Characteristics

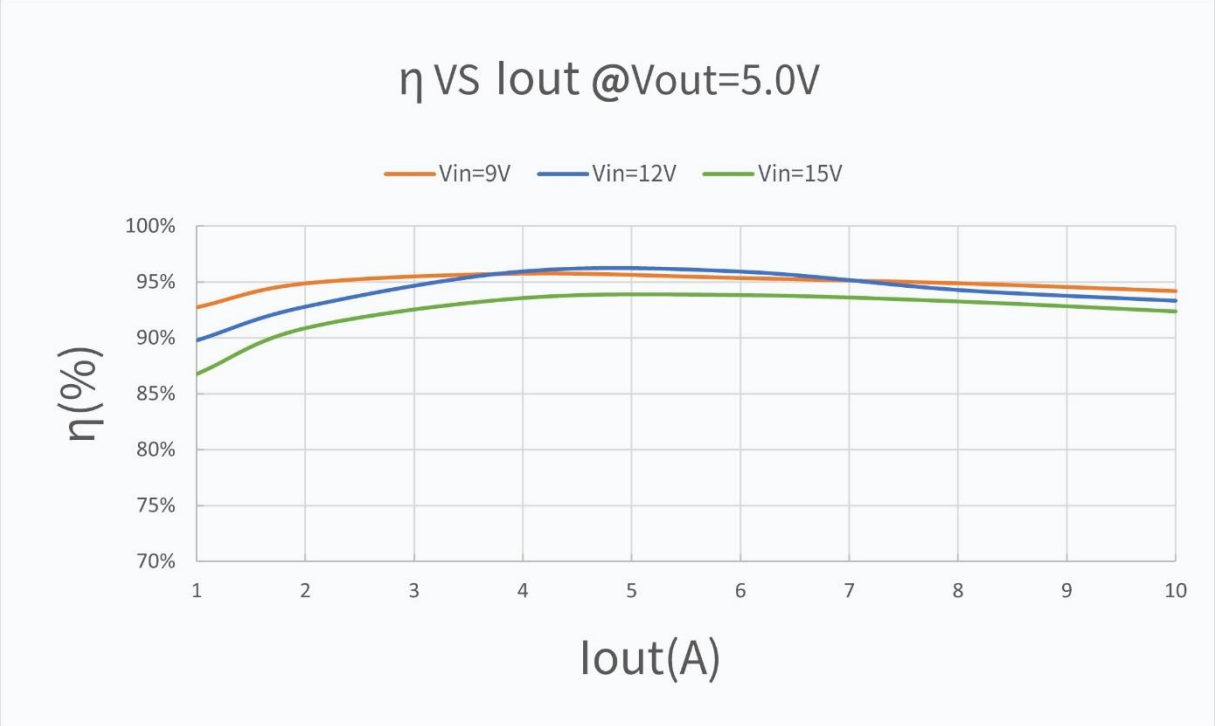
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	Vin	_	4.5	_	18	V
Output Voltage	Vout	Iout=0 mA	3.0	_	6.0	V
Output Current	Iout1	Vin=2.5V	_	_	10	A
Efficiency	η	_	_	_	96	%
Ripple Voltage①	Vpp1	Iout=0 A	_	30	35	mV
	Vpp2	Iout= 6A	_	40	50	mV
	Vpp3	Iout= 10A	_	50	65	mV
QuiescentCurrent	Id1	7V≤Vin≤18V / Iout=0mA Vo =5V	_	_	50	mA

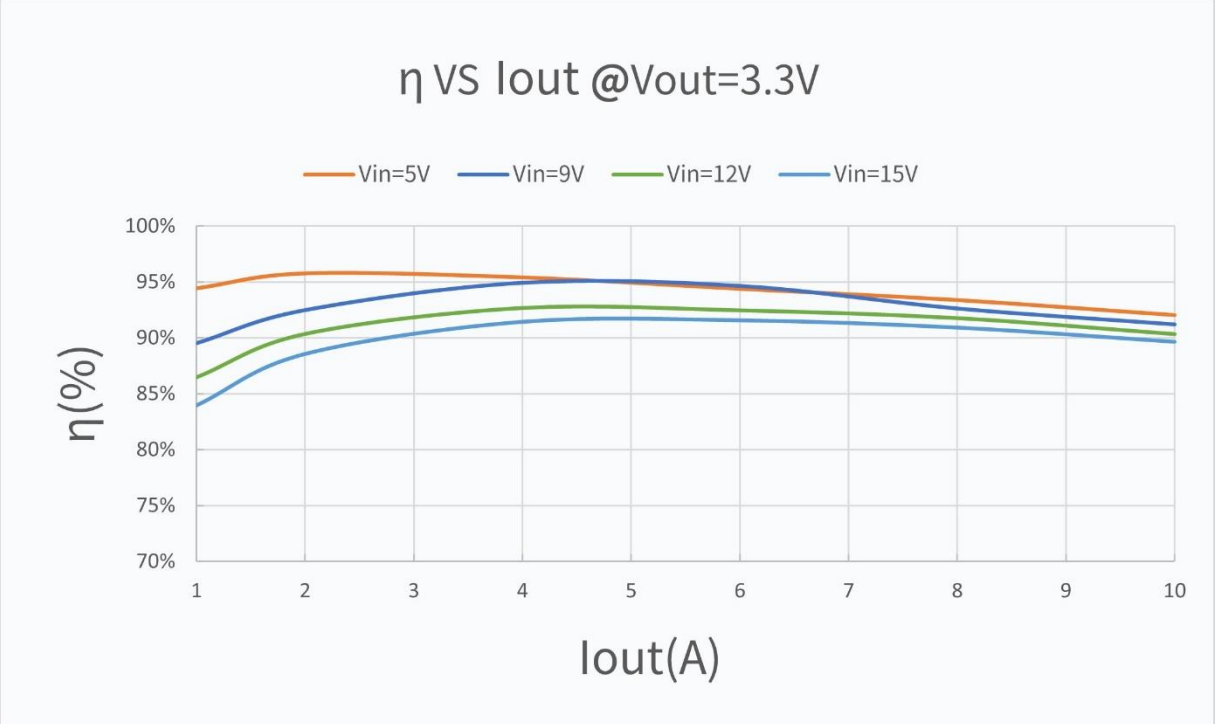
① The recommended working voltage is less than 20V, and the maximum input voltage of the module is 24V. Once exceeded, the module is easily burned.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
	Id2	5V≤Vin≤18V / Iout=0mA Vo =3.3V	–	–	40	mA
FastTransient	Vpp4	Vin=9V / Iout:1A->5A Vo =5V / f = 1KHz	–	200	–	mV
	Vpp5	Vin=12V/ Iout:1A->5A Vo =5V / f = 1KHz	–	150	–	mV
	Vpp6	Vin=15V/ Iout:1A->5A Vo =5V / f = 1KHz	–	130	–	mV
	Vpp7	Vin=5V / Iout:1A->5A Vo =3.3V / f = 1KHz	–	130	–	mV
	Vpp8	Vin=9V / Iout:1A->5A Vo =3.3V / f = 1KHz	–	100	–	mV
	Vpp9	Vin=12V/ Iout:1A->5A Vo =3.3V / f = 1KHz	–	85	–	mV
	Vpp10	Vin=15V/ Iout:1A->5A Vo =3.3V / f = 1KHz	–	80	–	mV
Load Regulation	–	|Vout(full load)- Vout(no load)|*100% /Vout(no load)	–	–	2	%
Line Regulation	–	|Vout(max)- Vout(min)|② *100% /Vout(no load)	–	–	1	%
Temperature Rise	ΔT1	@25 ℃ room temperature 10 minutes Iout = 8A	–	–	50	℃
	ΔT2	@25 ℃ room temperature 10 minutes Iout = 10A	–	–	70	℃
Storage Temperature	–	–	-10	–	+50	℃
Operating Temperature	–	–	-40	–	+105	℃

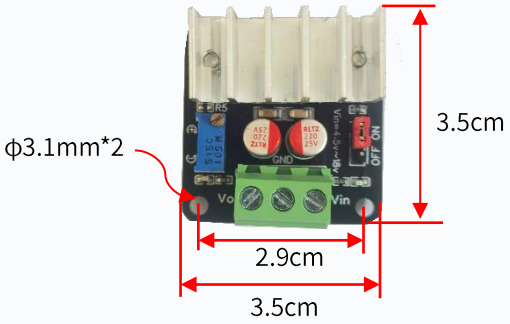
② Vout(max)：When fully loaded, adjust the input voltage to slowly change within the full voltage range, and record the maximum output voltage value. Similarly, Vout (min) is the minimum output voltage value recorded.

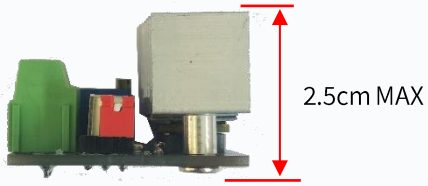
➢ Efficiency VS Iout



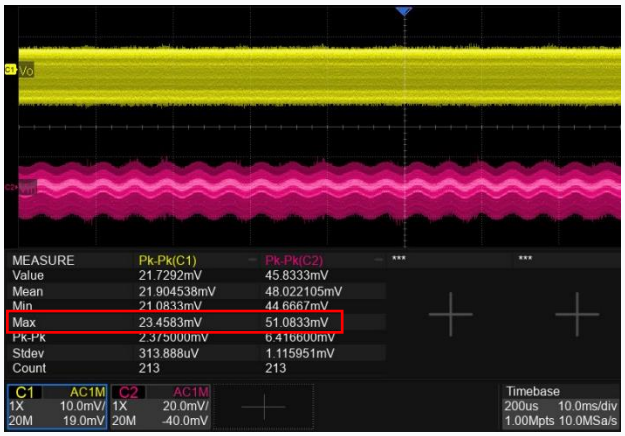


Size

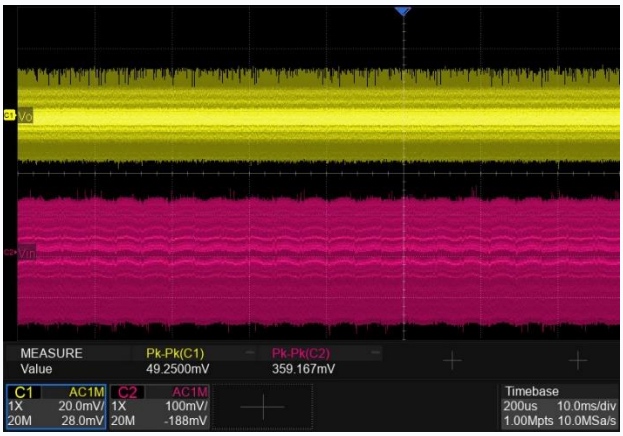




Test Waveform

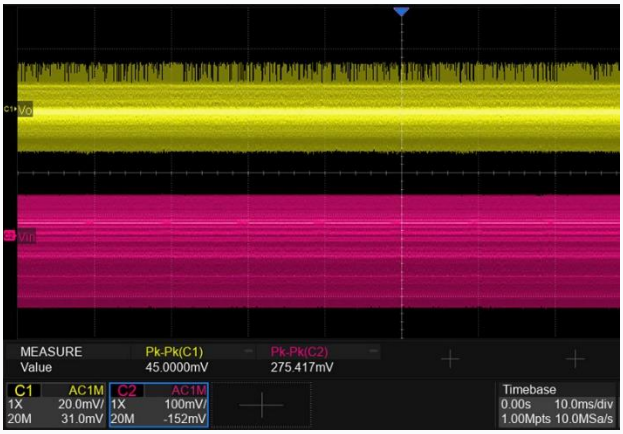


Vin=12V Vo=5V Iout=0A



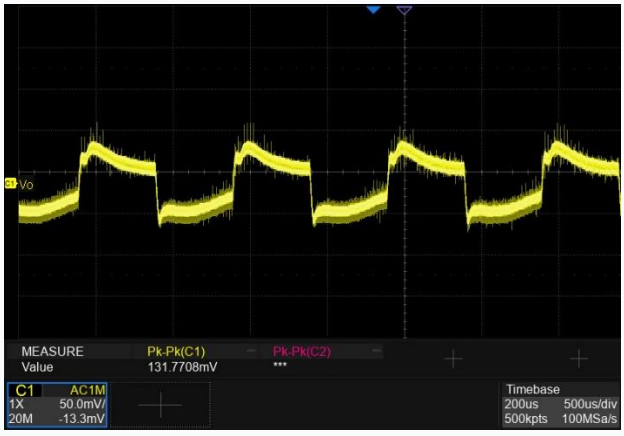
Vin=12V Vo=5V Iout=10A

Vin=12V Vo=3.3V Iout=0A

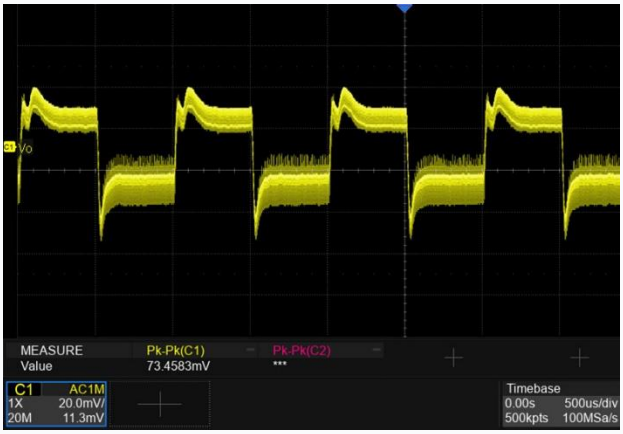


Vin=12V Vo=3.3V Iout=10A

➢ FastTransient

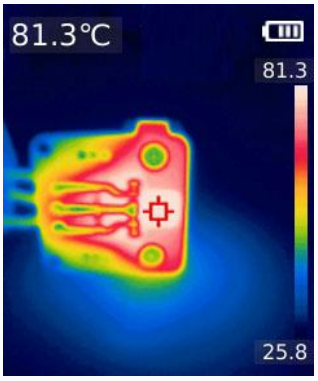


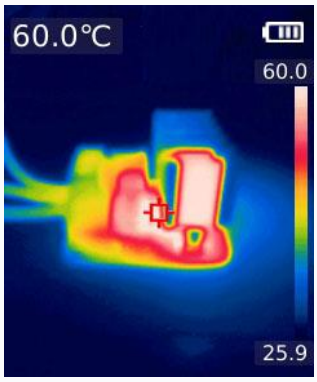
Vin=12V /Vo =5V/Iout:1A->5A/ f = 1KHz

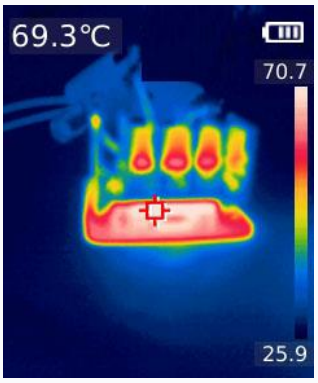


Vin=12V /Vo =3.3V/Iout:1A->5A/ f = 1KHz

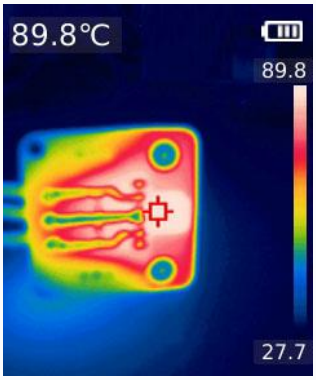
➢ Thermal imaging image

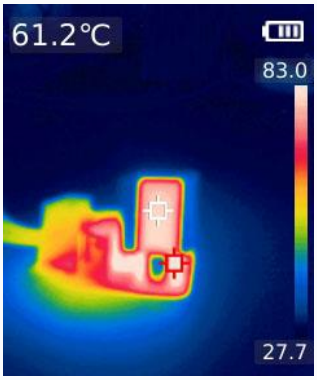


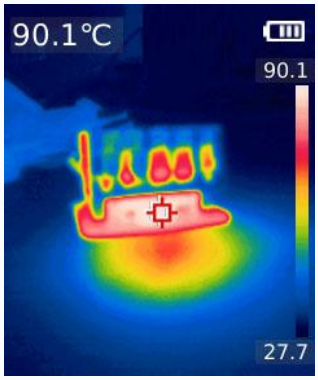




Vin=12V / Vo =3.3V / Iout:10A







Vin=12V / Vo =5.0V / Iout:10A