



Over voltage and over current

protection IC

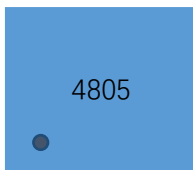
Description

AF4805 is an Over-Voltage-Protection (OVP) IC. The device will switch off internal MOSFET to disconnect VIN to OUT to protect load when any of input voltage, input current over the threshold. The Over temperature protection (OTP) function monitors chip temperature to protect the device.

Applications

- PND
- Tablet
- HD Player
- OTT
- Digital Cameras
- Digital Videos

Device Information



Marking

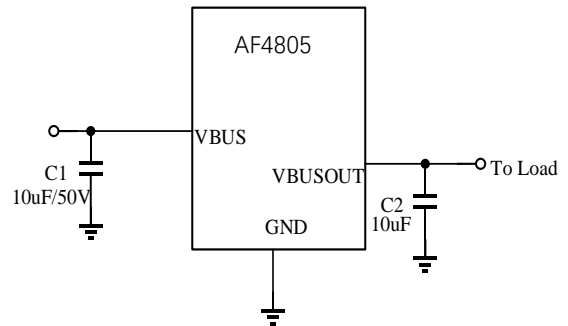
Top view

Package	DFN2*2-6L
MOQ	3000 pcs

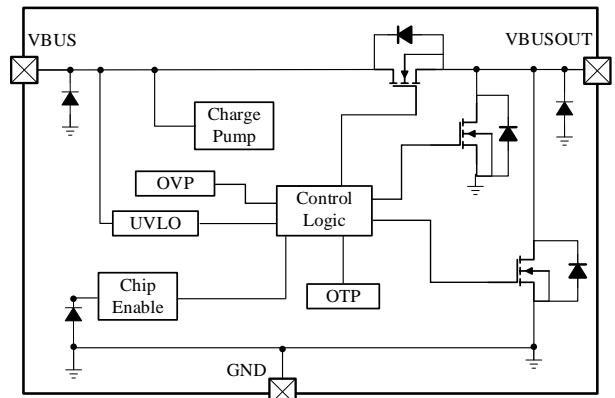
Features

- High voltage technology
- Maximum input voltage :30V
- Output power ON time:8ms (Typ)
- OVP threshold : 6.1V
- OVP response time :<1us
- Output auto discharge
- Small Package : DFN2*2-6L

Typical Application

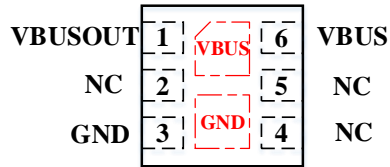


Functional Block Diagram





Pin Configuration



AF4805

Pin configuration (Top view)

NO.	Symbol	Type	Description
1	VBUSOUT	OUTPUT	Output pin, Connect to load.
2	NC		
3	GND	GROUND	Ground
4	NC		
5	NC		
6	VBUS	POWER	Input pin. A 10uF low ESR ceramic capacitor or larger must be connected as close as to this pin. It is recommended to use 50V capacitor or according to application.

Absolute Maximum Ratings ⁽¹⁾

(Unless otherwise specified, all voltage are with respect to GND, TA = 25°C)

PARAMETER	SYMBOL	RATINGS	UNITS
Input voltage (ACIN pin)	V _{IN}	-0.3 ~ 30	V
Output voltage (VOUT pin)	V _{OUT}	-0.3 ~ 30	V
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55 ~ 150	°C
ESD Ratings	HBM	±3000	V
	MM	±200	V

(1). Stresses beyond those listed under absolute maximum ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under recommended operating conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

Recommend Operating Conditions

(Ta =25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Input voltage	V _{IN}	3.5 ~ 30	V
Output current	I _{OUT}	3	A
Ambient operating temperature	Topr	-40 ~ 85	°C



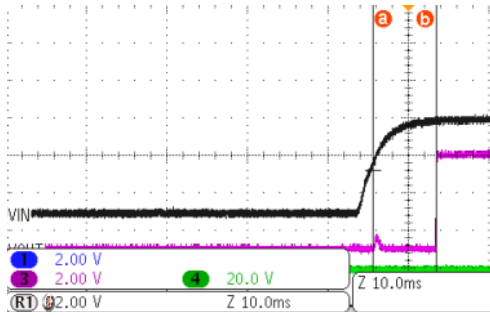
Electrical Characteristics

(Ta = 25°C, unless otherwise noted)

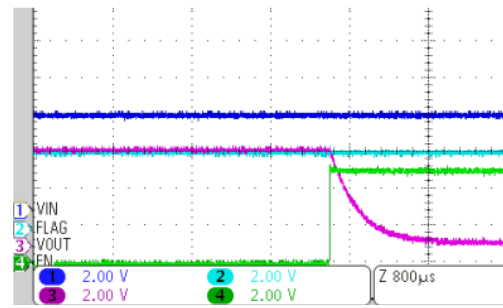
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
DC characteristics and Power-ON-Reset						
Input quiescent current	I _Q	V _{ACIN} =5V, I _{out} =0A		120	200	uA
IN-to-OUT ON resistance	R _{ON}	V _{ACIN} =5V, I _{out} =3A		40		mΩ
Output auto discharge resistance	R _{DISC HARGE}			500		Ω
Under voltage lock out threshold	UVLO	V _{ACIN} increasing from 0~3.5V		3.4		V
Under voltage lock out hysteresis	VHYS-UVLO	V _{ACIN} decreasing from 3.5~0V		300		mV
Output power-on time	TON	V _{ACIN} =0 -> 5V to output ON	6	8	10	ms
EN Threshold Voltage	VENL				0.4	V
	VENH		1.2			V
EN to GND current	I _{EN}				2	uA
Input Over-Voltage-Protection (OVP)						
PROADJ threshold	VOVP (th)	V _{ACIN} increasing from 5~7V	5.7	6.1	6.3	V
PROADJ hysteresis	VHYS- PROADJ	V _{ACIN} decreasing from 7~5V		70		mV
OVP active time	TOVP	V _{ACIN} = 5 -> 10V			1	us
OVP recovery time	TON(OVP)	V _{ACIN} =10 -> 5V to output ON	6	8	10	ms
Rising edge time	Tr	V _{IN} =5V		0.5	1	ms
Over-Temperature-Protection (OTP)						
OTP threshold				155		°C
OTP hysteresis				40		°C
Power Switch Body Diode						
Forward peak surge current	IFSM	Pulse Width = 10ms			15	A
		Pulse Width = 20us			50	A



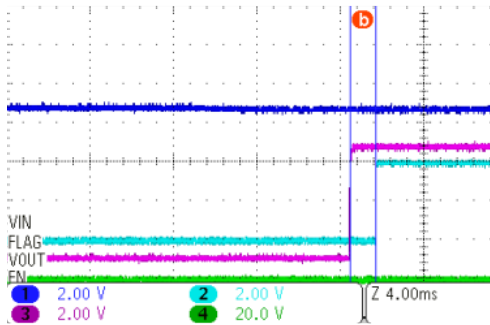
Typical characteristic



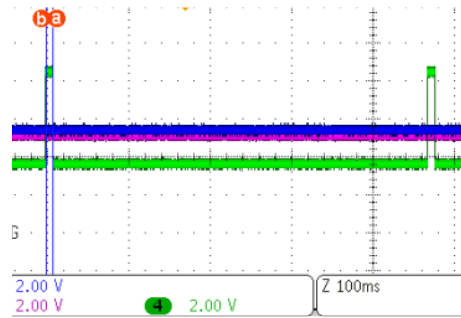
Power ON



UVLO_H

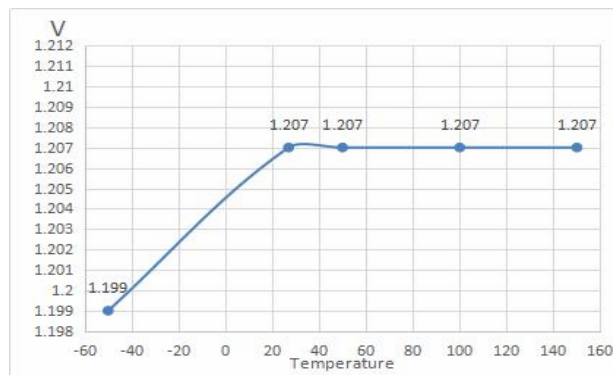


PROADJ_OVP

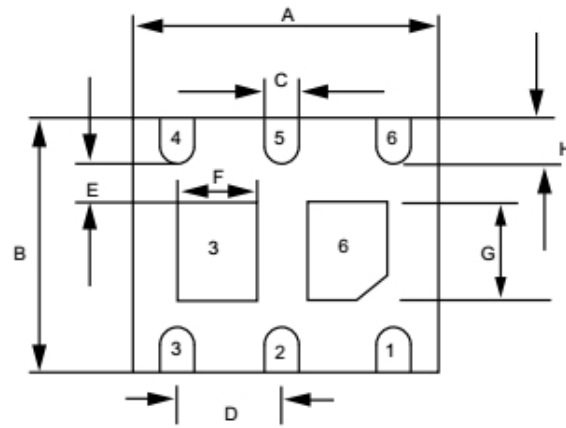
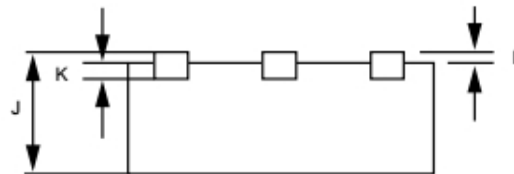


FLAG_DELAY

Temperature Stability



OVP threshold V-PROADJ & Temperature

Package Outline
DFN2*2-6L

Bottom view

Side view
Package outline
UNIT: mm

Symbol	Min	Max
A	1.924	2.076
B	1.924	2.076
C	0.25	0.40
D	0.65 (typ.)	
E	0.2 (min.)	
F	0.52	0.72
G	0.75	1.1
H	0.174	0.38
J	0.55	0.8
L	0	0.05
K	0.18	0.2



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