



GENERAL DESCRIPTION

The PW2606B is a front-end over voltage and over current protection device. It achieves wide input voltage range from 2.5VDC to 40VDC. The over voltage threshold can be programmed externally or set to internal default setting. The low resistance of integrated power path nFET switch ensures better performance for battery charging system applications. It can deliver up to 1A current to satisfy the battery supply system. It integrates the over-temperature protection shutdown and auto-recovery circuit with hysteresis to protect against over current events.

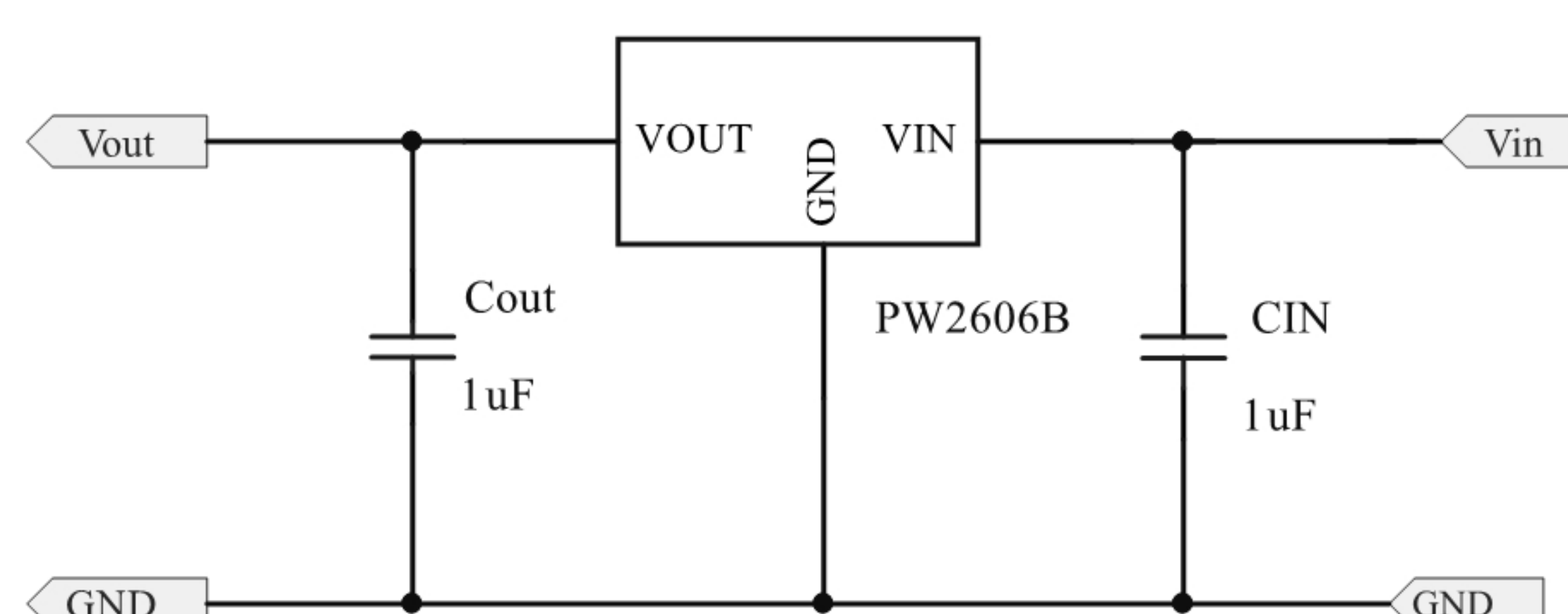
FEATURES

- Absolute maximum input voltage: 40V
- Maximum load current : 1A
- Low power path resistance : 350mΩ (Typ.)
- Fixed Internal OVP threshold : 5.85/6.1/6.8/10.5/14.0 V (Typ.)
- OVP response time : 50ns
- Internal 15-ms Start-Up or OVP Recovery Delay
- Programmable over voltage threshold : 4V to 20V
- Internal soft start to prevent In-rush current
- Thermal shutdown protection & Auto recovery
- Output short-circuit protection
- RoHS compliant and Halogen free
- Compact package : SOT23-6L

APPLICATIONS

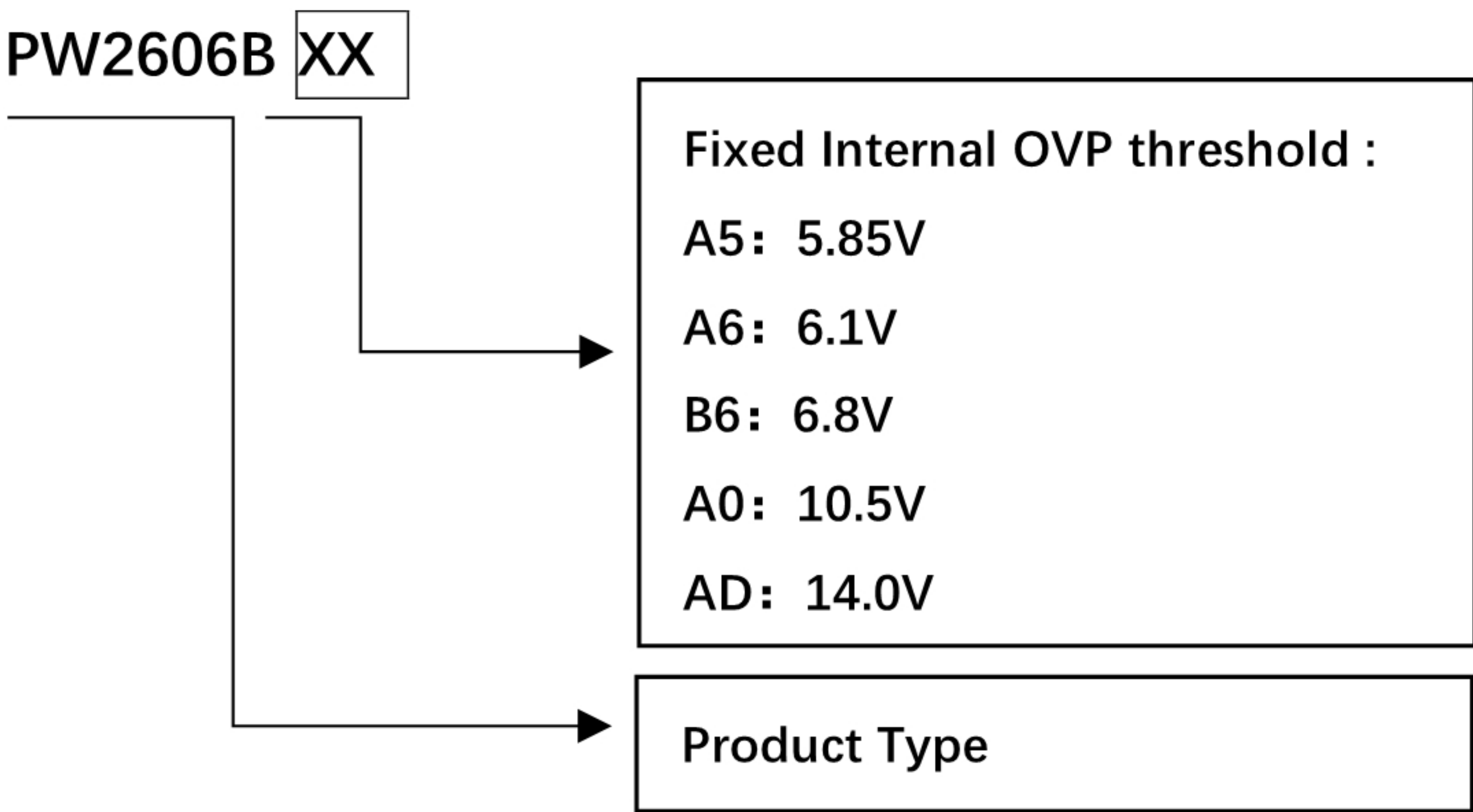
- Smart Device
- Battery Supplied System
- Wearable Device

TYPICAL APPLICATION CIRCUIT

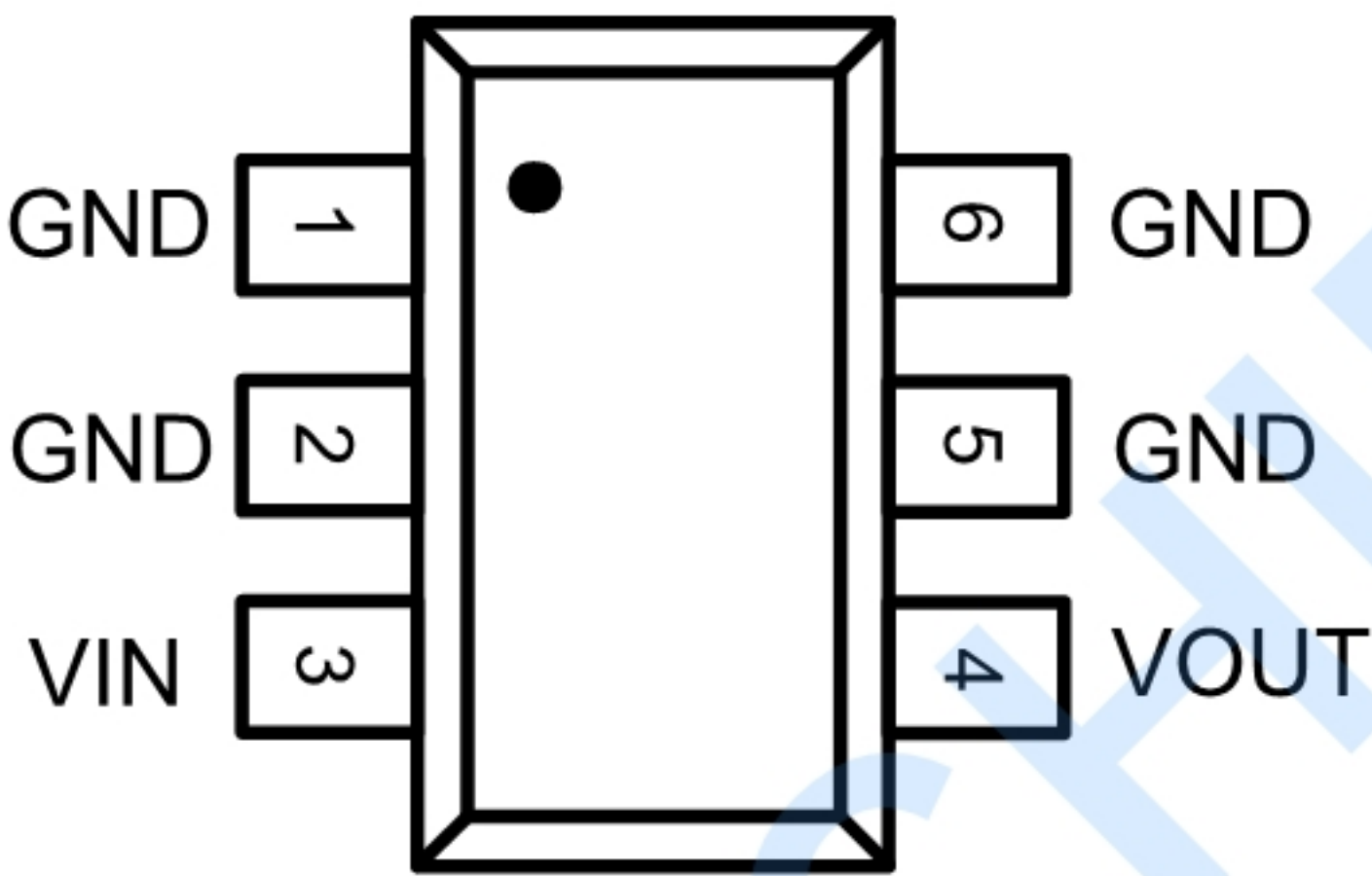




Selection Guide



PIN ASSIGNMENT/DESCRIPTION



Pin No	Pin Name	Functions
3	VIN	Power input pin. Decouple high frequency noise by connecting at least 0.1uF MLCC to ground.
4	VOUT	Output voltage pin. Source side of the internal nFET.
1,2,5,6	GND	Power ground pin.

RECOMMENDED OPERATING RANGE

SYMBOL	ITEMS	VALUE	UNIT
VIN	Input Supply Voltage	2.5 to 20	V
VOUT	Output Voltage	< 15	V
IOUT	Continue Output Current	<1	A
VOVLO	OVLO Voltage	0 to 20	V
CIN	Input capacitance	1	uF
Cout	Output load capacitance	1	uF
TOPT	Operating Temperature	-40 to +85	°C

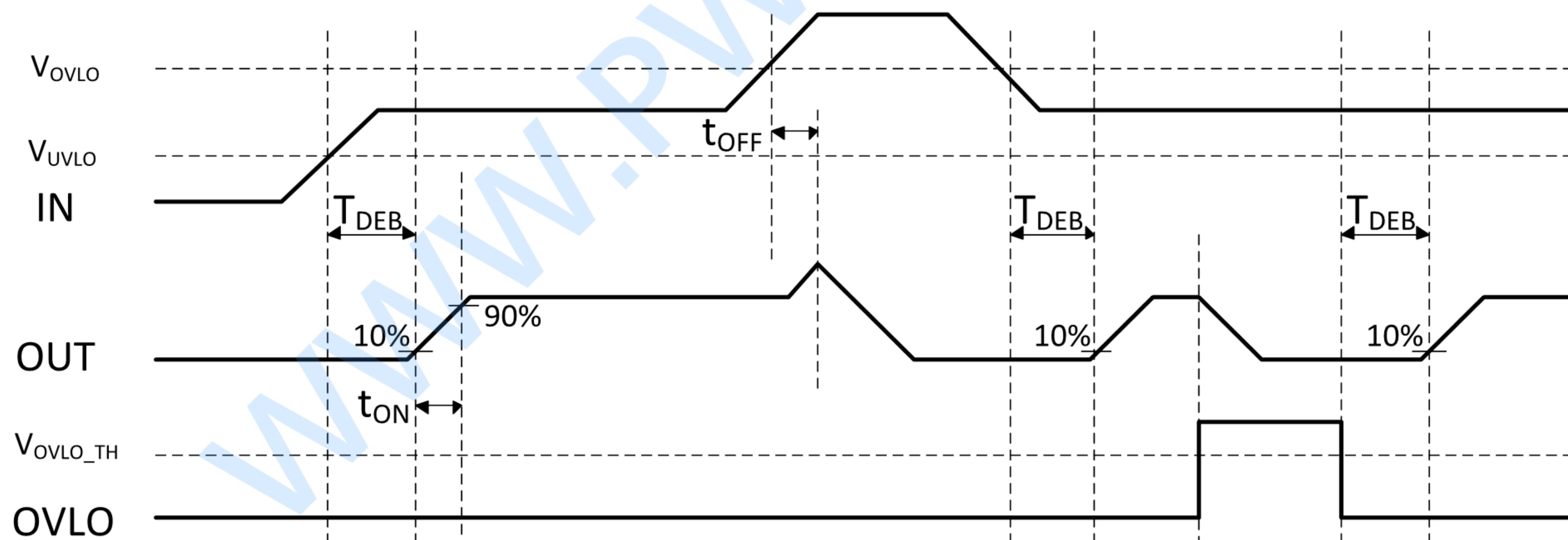


Absolute Maximum Ratings (note)

SYMBOL	ITEMS	VALUE	UNIT
VIN	Input Voltage	-0.3~40	V
Vout	Output Voltage	-0.3~15	V
VOVLO	OVLO Voltage	-0.3~20	V
IOMAX	Maximum Output Continues Load Current	1	A
R θ JA	Thermal Resistance DFN-2x2-8L	118	°C/W
TJ	Junction Temperature	-40-150	°C
TSTG	Storage Temperature	-55 ~ +150	°C
TSOLDER	Package Lead Soldering Temperature (10s)	260	°C
ESD MM	Machine Mode	TBD	KV
ESD HBM	Human Body Mode	TBD	KV
ESD CDM		TBD	V

Note: Exceed these limits to damage to the device. Exposure to absolute maximum rating conditions may affect device reliability.

TIMING DIAGRAM





ELECTRICAL CHARACTERISTICS

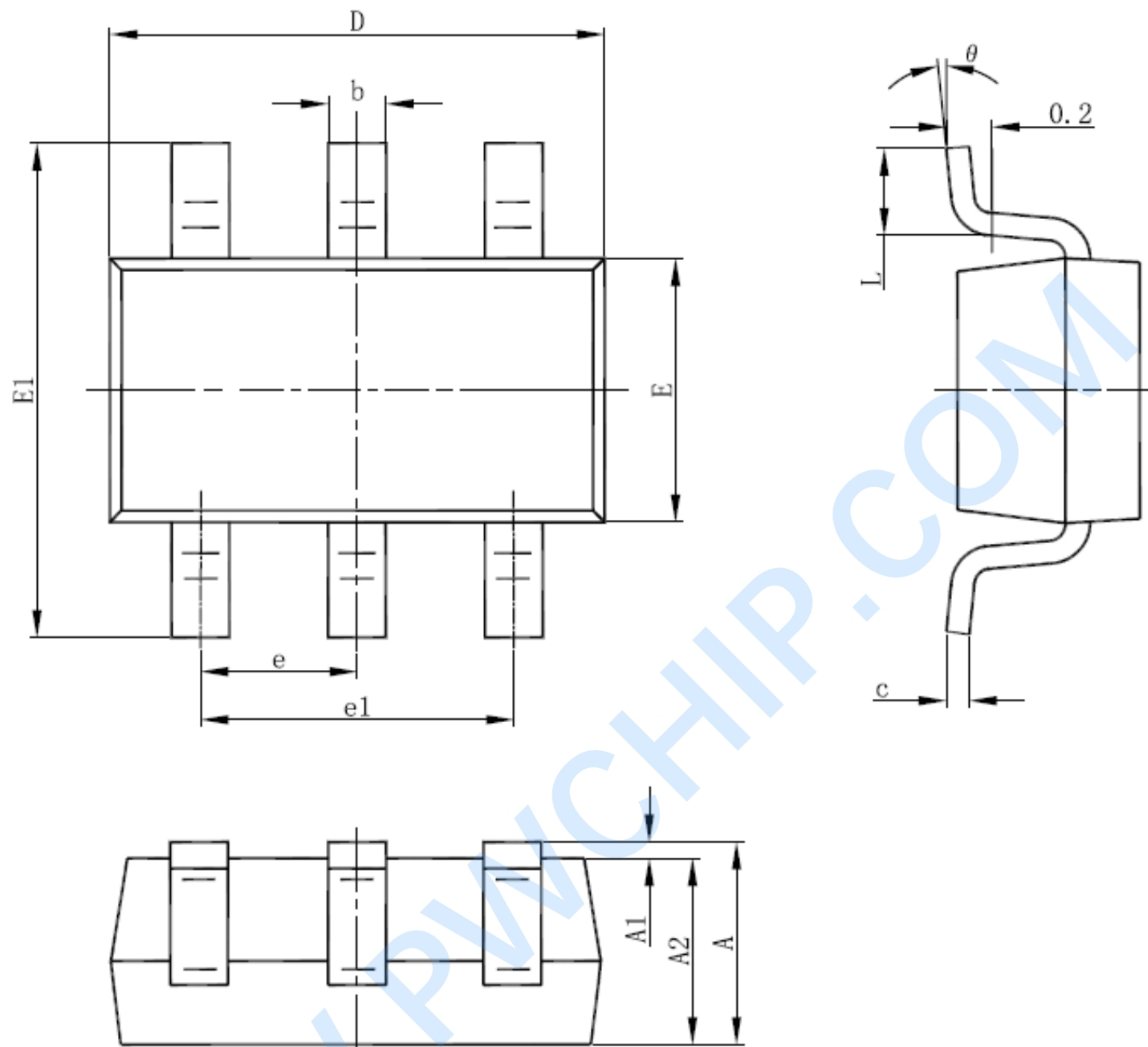
(VIN = 2.8V to 40V, CIN=1uF, COUT=1uF, TA=25 °C, unless otherwise noted.)

Parameter	Symbol	Test Conditions		MIN	TYP	MAX	UNIT
Input Voltage	V _{IN}			2.8		40	V
Input UVLO Threshold	V _{UVLO}					2.4	V
UVLO Hysteresis	V _{HYS}				100		mV
Input Quiescent Current	I _Q	V _{IN} =5V,V _{IN} <V _{OVLO}			TBD		μA
OVLO Input Leakage Current	I _{OVLO}	V _{OVLO} =V _{OVLO_TH}		-100		100	nA
Internal Default OVP Threshold	V _{OVLO}	Rising	PW2606BA5	5.67	5.85	6.03	V
			PW2606BA6	5.8	6.1	6.4	
			PW2606BB6	6.6	6.8	7.0	
			PW2606BA0	10.0	10.5	11.0	
			PW2606BAD	13.5	14.0	14.5	
Internal OVP Hysteresis	V _{OVLO_HYS}	Falling			150		mV
OVLO Preset Threshold	V _{OVLO_TH}	Rising		1.14	1.2	1.26	V
OVLO Hysteresis		Falling			20		mV
External OVLO Select Threshold	V _{OVLO_SEL}				0.2	0.28	V
Programmable OVLO range	V _{OVPPR}			4		20	V
On Resistance of power path	R _{ON}	V _{IN} =5V,I _{OUT} =500mA, from IN to OUT			350		mΩ
Startup or OVP Recovery Debounce Time	T _{DEB}	Time from 2.5V<V _{IN} <V _{OVLO} to V _{OUT} =10% of V _{IN}			15		mS
Soft start Turn-On Time	t _{ON}	V _{IN} =5V, R _L =100, C _{OUT} =100uF; V _{OUT} =10% of V _{IN} to 90% V _{IN}			2		mS
OVP Switch Turn-Off Time	t _{OFF}	V _{IN} > V _{OVLO} to V _{OUT} stop rising			50	100	nS
Output Discharge Resistance	R _{DISC}	OVP Triggered			200		Ω
Thermal Shutdown Temperature	T _{SD}				150		°C
Thermal Shutdown Hysteresis	T _{HYS}				20		°C



PACKAGE DESCRIPTION

SOT23-6L



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.900	1.450
A1	0.000	0.150
A2	0.900	1.300
b	0.300	0.500
c	0.100	0.200
D	2.800	3.000
E	1.500	1.700
E1	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°