

High Input Voltage (OVP)

GENERAL DESCRIPTION

The PW2606 is a front-end over voltage and over current protection device. It achieves wide input voltage range from 2.5V to 40V. The over voltage threshold can be programmed externally or set to internal default setting. The ultra-low resistance of integrated power path nFET switch ensures better performance for battery charging system applications. It can deliver up to 2A 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. This device is available in ultra-small SOT23-6L package, ideally for small PCB area application.

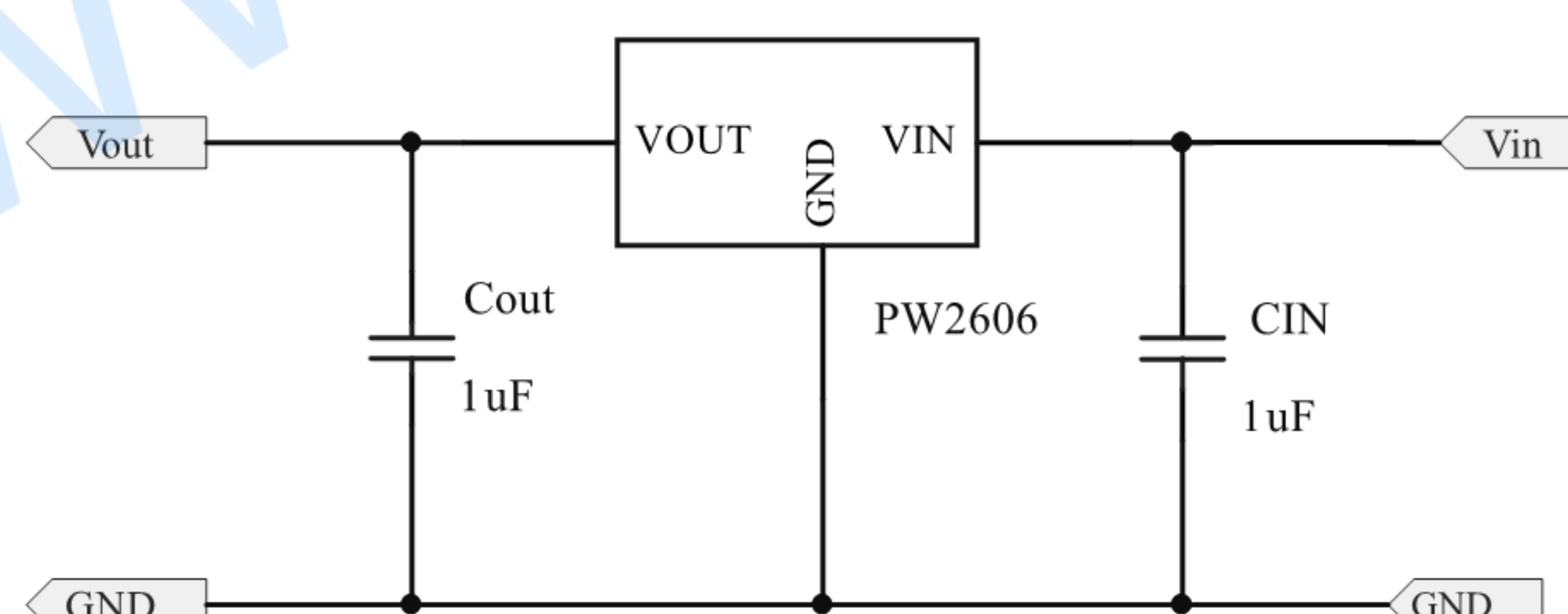
FEATURES

- Absolute maximum input voltage: 40V
- Maximum load current : 2A
- Extremely low power path resistance : 100mΩ(typ.)
- Fixed Internal OVP threshold : 6.1V / 6.8V (Typ.)
- OVP response time : 50ns
- Internal 15-ms Start-Up or OVP Recovery Delay
- OVP: PW2606B (350mΩ); PW2609A (35mΩ)
- OVP+OCP: PW1558 (3V ~ 20V 5.8A); PW1515 (3.5V~6V 2A)
PW1605 (4V ~ 48V 5A)
- 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

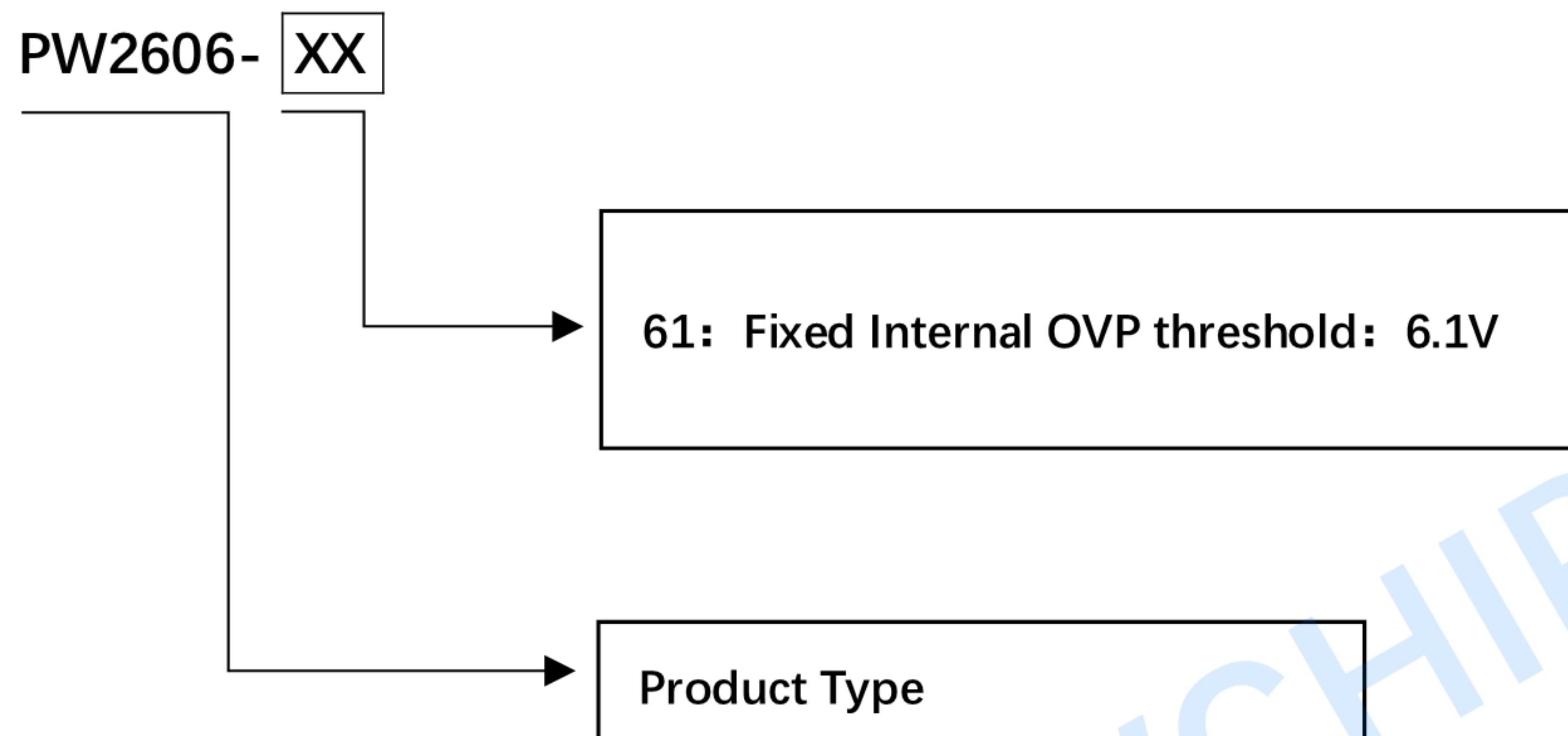
APPLICATIONS

- Wearable Device
- Mobile device
- n-Car device

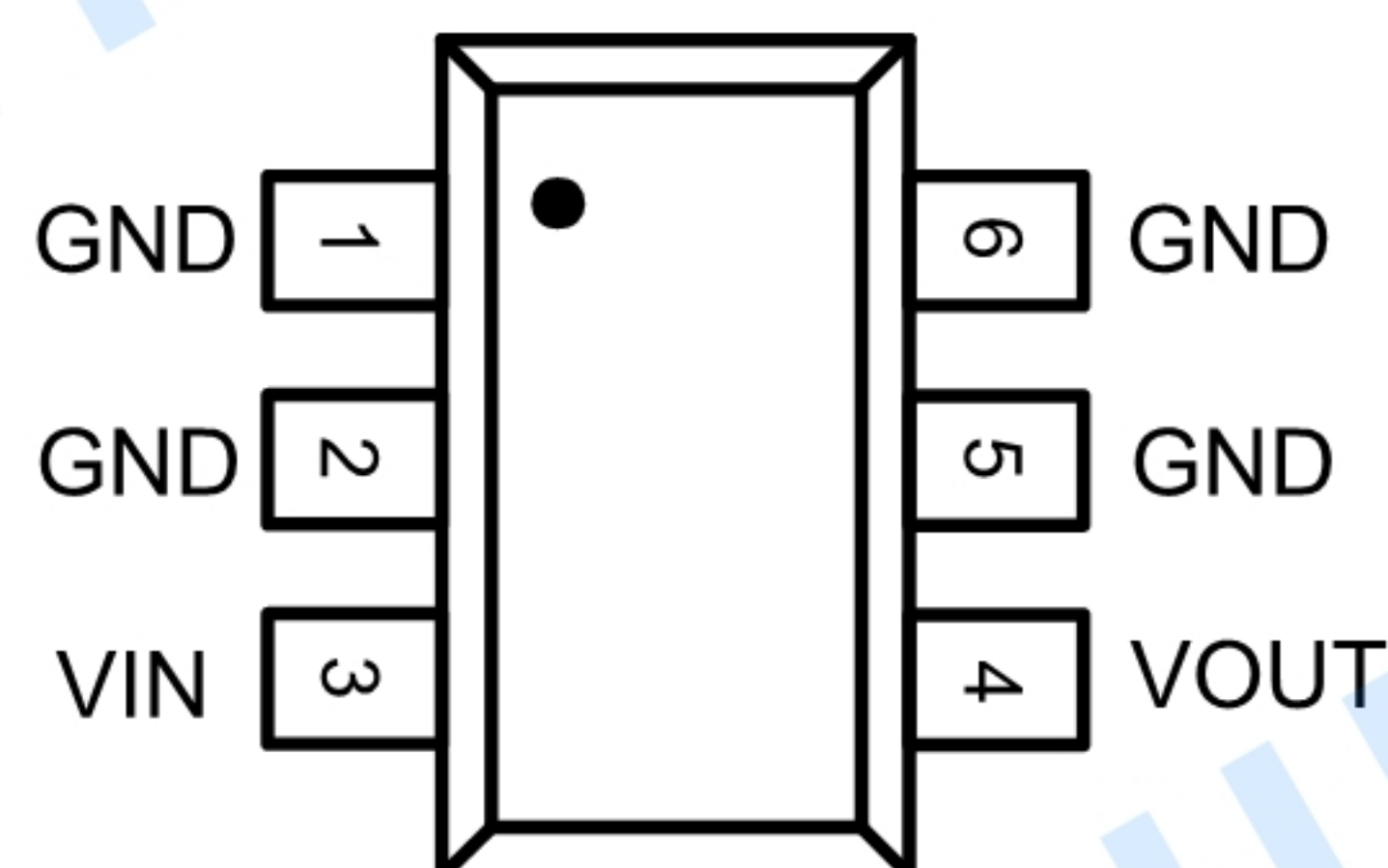
TYPICAL APPLICATION CIRCUIT



Selection Guide



PIN ASSIGNMENT/DESCRIPTION



Pin No	Pin Name	Functions
1, 2, 5, 6	GND	Power ground pin
3	VIN	Power input pin. Connect IN pin together. Decouple high frequency noise by connecting at least 0.1uF MLCC to ground.
4	VOUT	Output voltage pin. Source side of the internal FET. Connect OUT pins together for normal operation.

Products

Reel /outer anti-static packaging	Product	
 <p>NO: 1. QR code content: WWW.PWCHIP.COM; 2. Product: PWCHIP product model name; 3. Lot No: wafer batch code/internal system production code (customers can send this code to support@pwchip.com to verify product information and confirm); 4. D/C: packaging cycle; 5. QTY: packaging quantity (box/disc); 6. Data: packaging time.</p>	PW2606	
	Brand	Package
	平芯微/PWCHIP	SOT23-6L
	Specification	Qty per reel
	Taping & Reel	3000 PCS
	Marking	
	FXXXX Device code: F ; Lot number code: XXXX .	

RECOMMENDED OPERATING RANGE

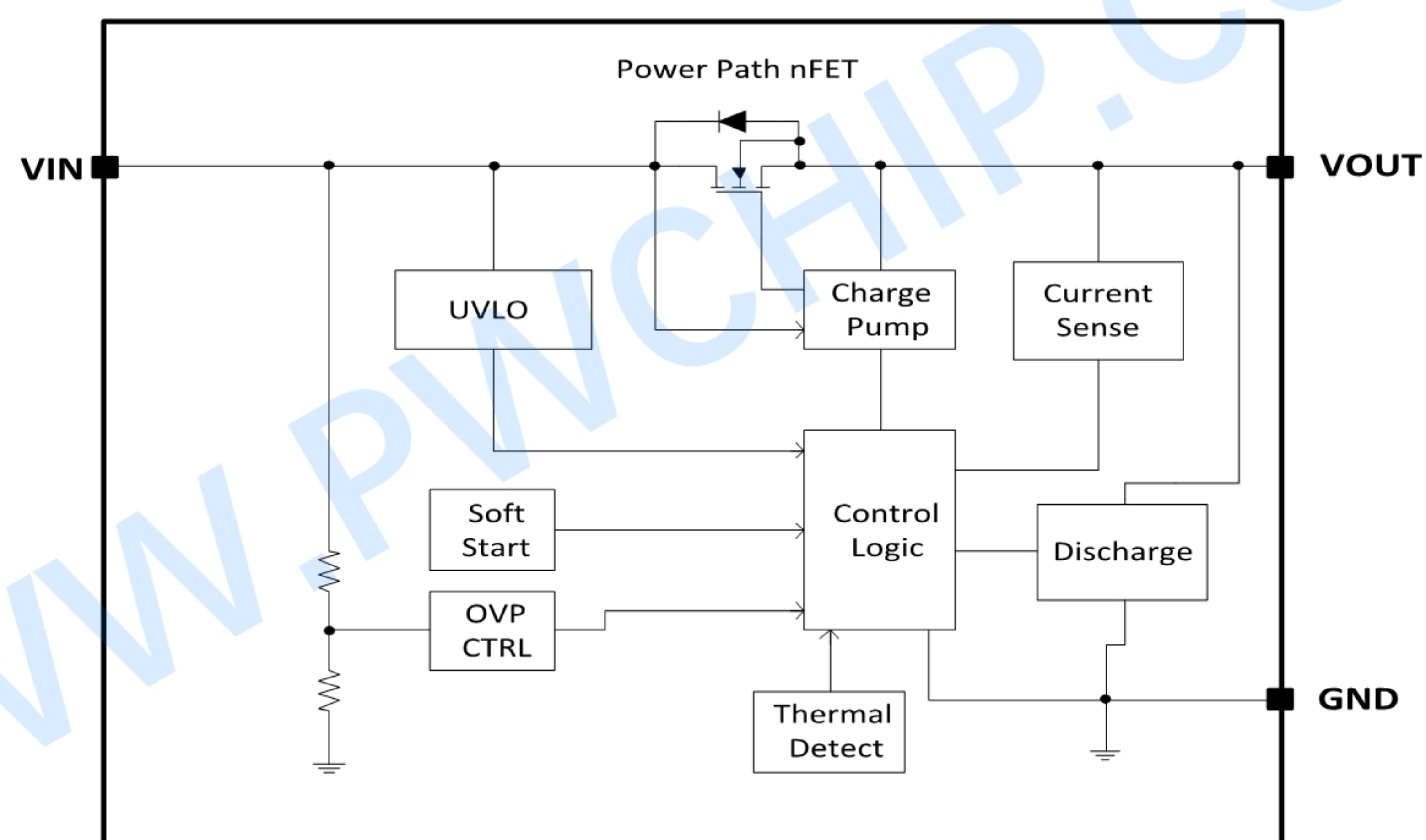
SYMBOL	ITEMS	VALUE	UNIT
VIN	Input Supply Voltage	2.8~20	V
IOUT	Continue Output Current	≤2	A
TOPR	Operating Temperature	-40 to +85	°C
CIN	Input capacitance	1	uF
COUT	Output load capacitance	1	uF

Absolute Maximum Ratings (note)

SYMBOL	ITEMS	VALUE	UNIT
VIN	Input Voltage	-0.3~40	V
IOMAX	Maximum Output Continues Load Current	2	A
PDMAX	Power Dissipation	0.5	W
RθJA	Thermal Resistance	220	°C/W
TJ	Junction Temperature	-40 ~ +150	°C
TSTG	Storage Temperature	-55 ~ +150	°C
TSOLDER	Package Lead Soldering Temperature (10s)	260	°C

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

BLOCK DIAGRAM

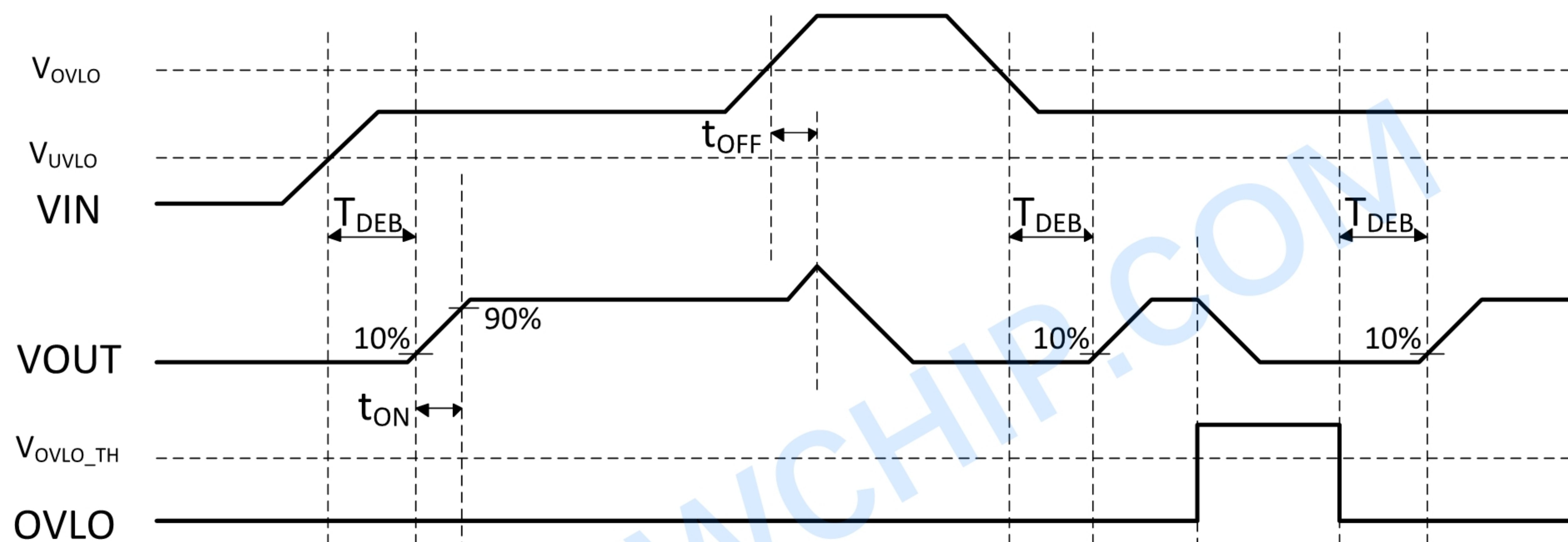


ELECTRICAL CHARACTERISTICS

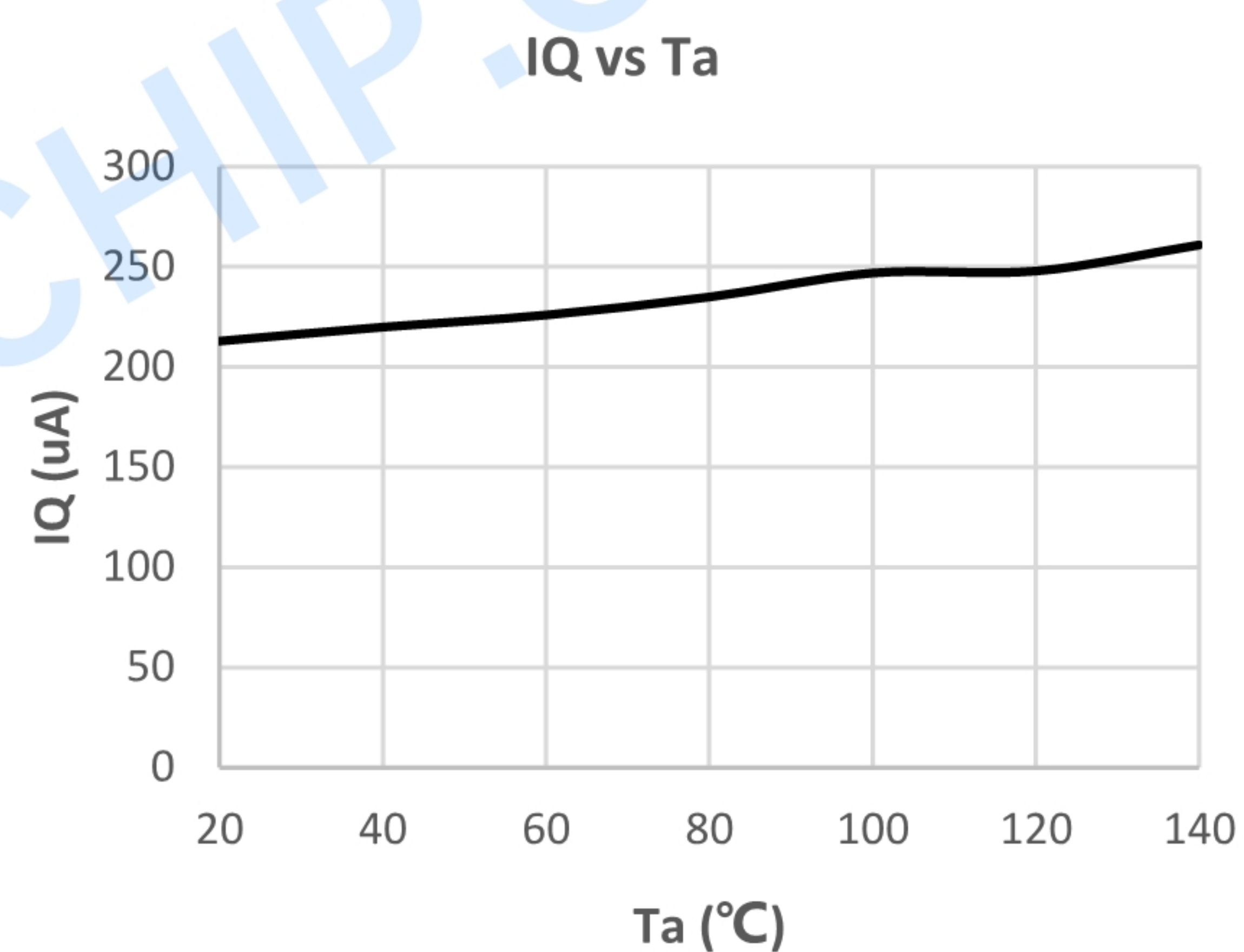
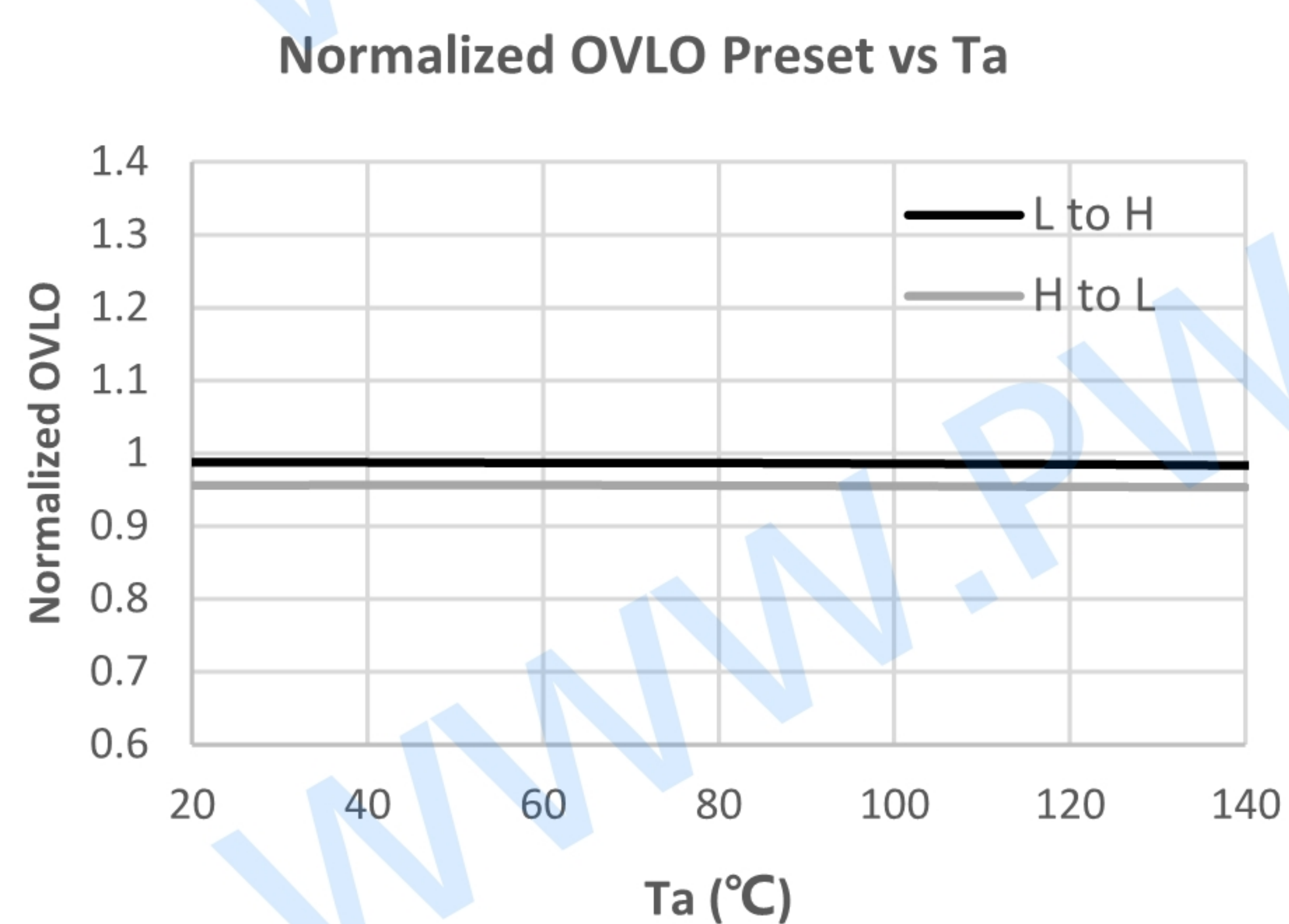
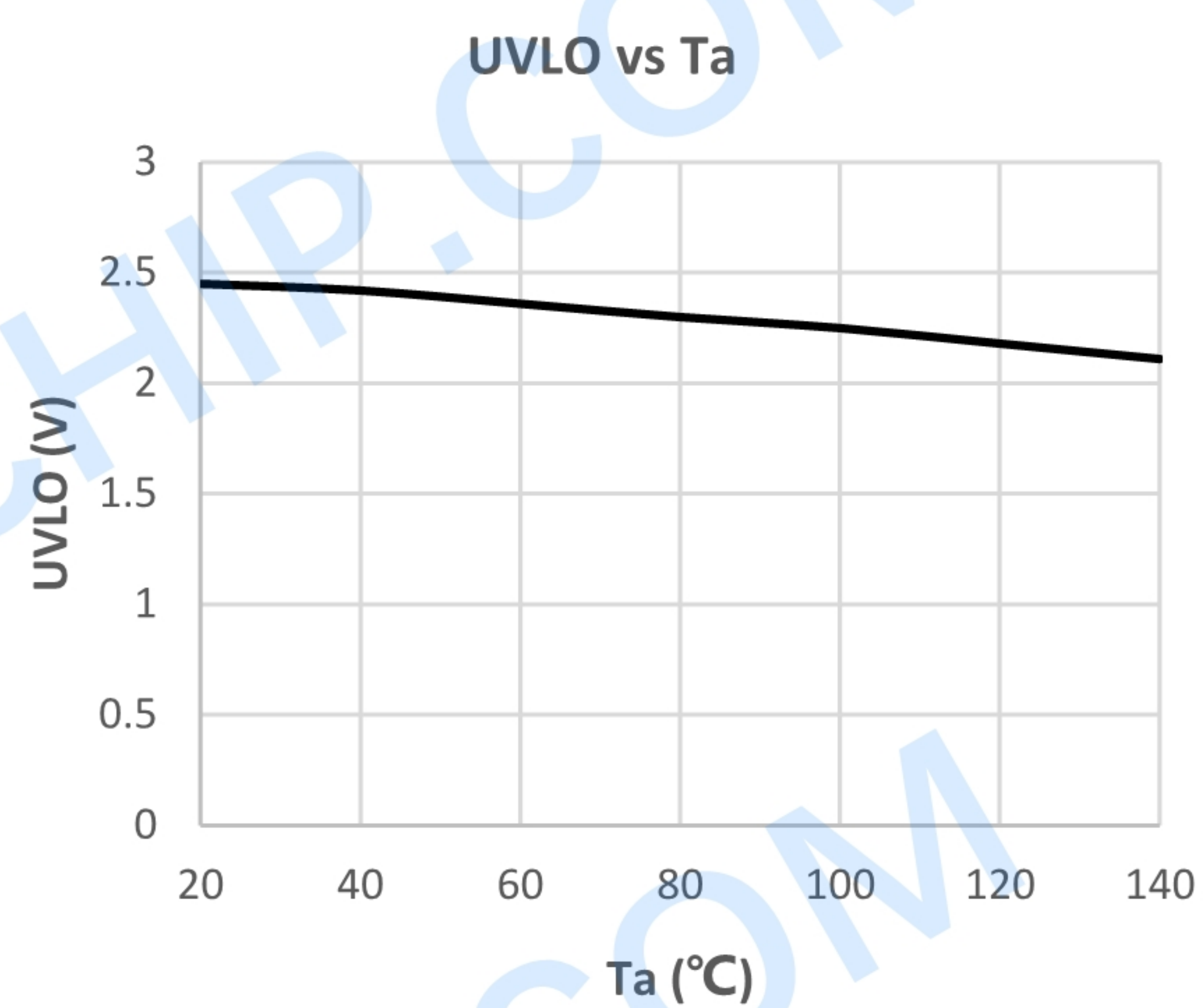
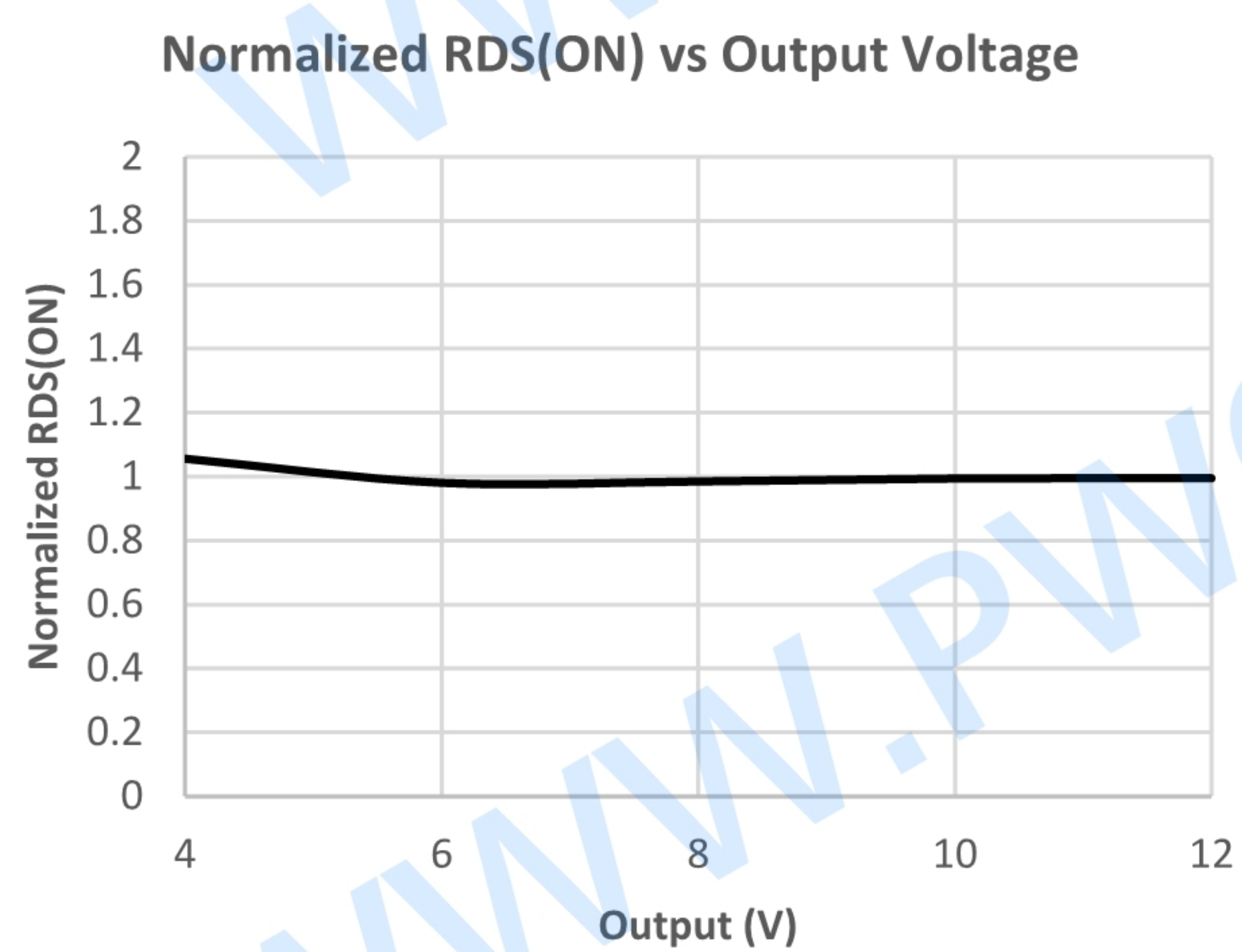
(VIN = 2.8V to 40V, CIN=1uF, COU=1uF, TA=25 °C, unless otherwise noted.

Parameter	Symbol	Test Conditions	MIN	TYP	MAX	UNIT
Input Voltage	VIN		2.8		40	V
Input UVLO Threshold	VUVLO			2.5	2.8	V
UVLO Hysteresis	VHYS			260		mV
Input Quiescent Current	IQ	VIN=5V, VIN<VOVLO		210		μA
OVLO Input Leakage Current	IovLO	VOVLO=VOVLO_TH	-100		100	nA
Internal Default OVP Threshold	VOVLO	PW2606-61	5.9	6.1	6.3	V
Internal OVP Hysteresis	VOVLO_HYS	Falling		200		mV
OVLO Preset Threshold	VOVLO_TH	Rising	1.14	1.2	1.26	V
OVLO Hysteresis		Falling		35		mV
External OVLO Select Threshold	VOVLO_SEL			0.25	0.30	V
On Resistance of power path	RON	VIN=5V, IOUT=500mA, from IN to OUT		100		mΩ
Startup or OVP Recovery Debounce Time	TDEB	Time from 2.5V<VIN<VOVLO to VOUT=10% of VIN		15		mS
Soft start Turn-On Time	ton	VIN=5V, RL=100, COU=100uF; VOUT=10% of VIN to 90% VIN		0.2		mS
OVP Switch Turn-Off Time	toff	VIN> VOVLO to VOUT stop rising		50	100	nS
Output Discharge Resistance	RDISC	OVP Triggered		200		Ω
Thermal Shutdown Temperature	TSD			150		°C
Thermal Shutdown Hysteresis	THYS			25		°C

TIMING DIAGRAM

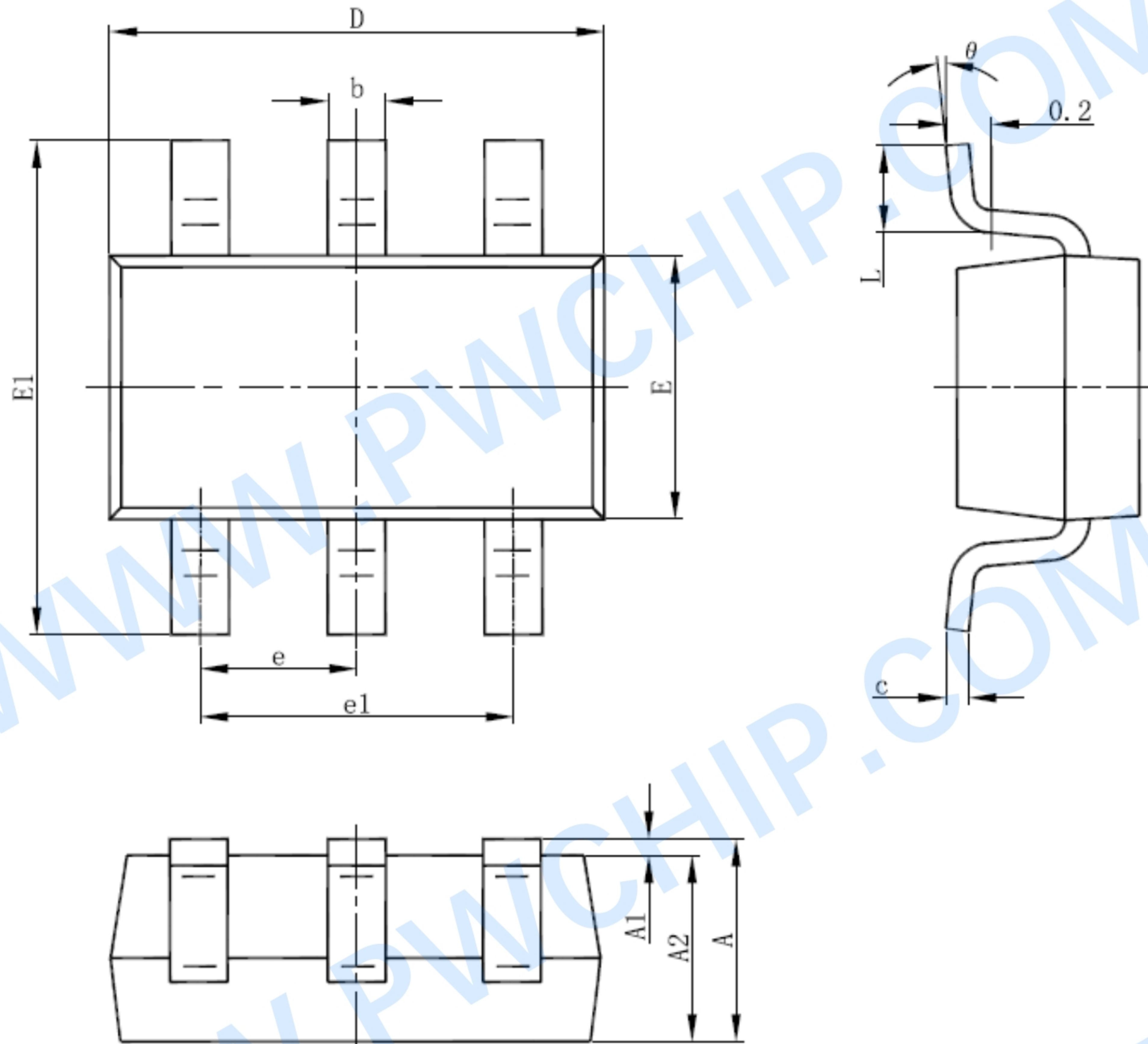


TYPICAL PERFORMANCE CHARACTERISTICS



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°