

## 1. Description

The UMW UCC27519 device is a low voltage power MOSFET and IGBT in phase gate driver. Proprietary latch-immune of CMOS technology enables single-chip integrated architectures with high robustness. The UMW UCC27519 logic input level is compatible with CMOS or TTL logic output levels down to 3.3V. The output driver has Internal Undervoltage Lockout (UVLO) circuitry with hysteresis and buffer stage of output current. The UMW UCC27519 is designed to operate over a wide VCC range of -10 V to 25 V and wide temperature range of -40°C to 125°C.

## 3. Features

- Input output in phase / out of phase
- Compatible with 3.3V, 5V, 15V input logic
- -10 to 25V Single-Supply Range
- High capacitance load driving capability
- Operating Temperature Range of -40 to 125°C
- 4-A Peak Source and Sink-Drive Current

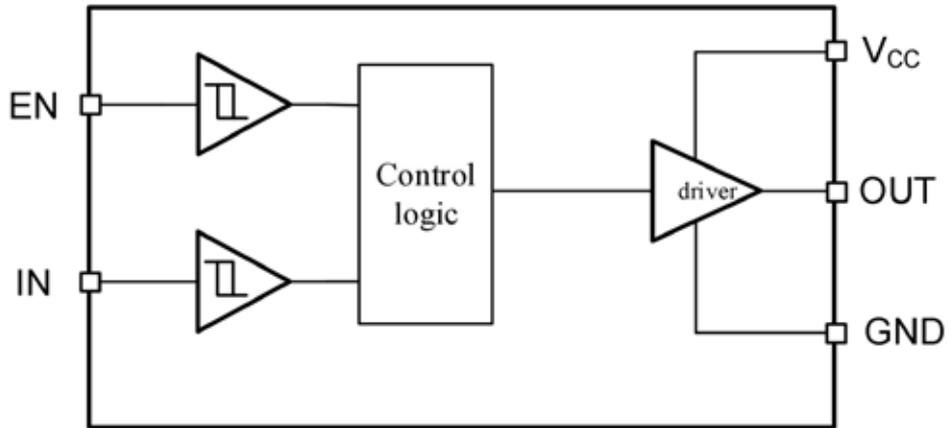
## 2. Applications

- Switch-Mode Power Supplies
- General Gate Driver
- Driving MOSFETs and IGBTs

- Undervoltage Lockout
  - Undervoltage Lockout turn-on threshold 4.5V
  - Undervoltage Lockout turn-off threshold 4.2V
- Turn on/Turn off Delays:
  - Ton/Toff =25ns/25ns

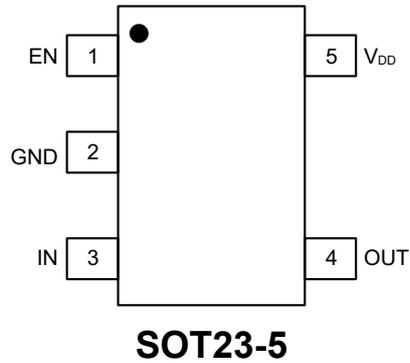


## 4.Pin Configuration





## 5. Pinning Information



### Pin Functions

Number	Symbol	Description
1	EN	Enable input
2	GND	Ground: All signals are referenced to this pin
3	IN	Logic input
4	OUT	Gate drive output
5	V <sub>DD</sub>	Bias supply input



## 6. Absolute Maximum Ratings

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. All voltages are with respect to COM unless otherwise noted, Currents are positive into, negative out of the specified terminal, environment temperature is 25°C.

Parameter	Symbol	Min	Max	Units
Supply voltage range	$V_{DD}$	-0.3	25	V
OUT voltage range	$V_O$	-0.3	$V_{DD}+0.3$	V
IN voltage	$V_{IN}$	-12	25	V

## 7. Thermal Information

Parameter	Symbol	Min	Max	Units
Thermal Resistance	$R_{thJA}$		151	°C/W
Storage Temperature	$T_S$	-55	150	°C
Operating Junction Temperature	$T_J$		150	°C
Lead Temperature	$T_L$		300	°C

## 8. Recommended Operating Conditions

To properly operate, device should be used in the following recommended conditions. All voltages are with respect to COM unless otherwise noted, Currents are positive into, negative out of the specified terminal, environment temperature is 25°C.

Parameter	Symbol	Min	Max	Units
Supply voltage range	$V_{CC}$	5	20	V
OUT voltage range	$V_O$	0	$V_{DD}$	V
IN voltage	$V_{IN}$	-10	20	V
Ambient temperature	$T_A$	-40	125	°C



## 9. Electrical Characteristics

$T_A=25^{\circ}\text{C}$ ,  $V_{DD}=15\text{V}$ ,  $C_L=1\text{nF}$  (unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Units
Input signal high threshold	$V_{IH}$	2.7			V
Input signal low threshold	$V_{IL}$			0.8	V
EN input rising threshold	$V_{EN+}$	2.5			V
EN input drop threshold	$V_{EN-}$			0.8	V
Undervoltage Lockout (UVLO) turn-on threshold $V_{DD}$	$V_{DDUV+}$		4.5	5	V
Undervoltage Lockout (UVLO) turn-off threshold $V_{DD}$	$V_{DDUV-}$		4.2		V
UVLO threshold hysteresis $V_{DD}$	$V_{DDUVHY}$		0.3		V
Input current ( $I_N=5\text{V}$ )	$I_{IN+}$		50	100	$\mu\text{A}$
Input current ( $I_N=0\text{V}$ )	$I_{IN-}$			5	$\mu\text{A}$
High output voltage	$V_{OH}$			0.35	V
Low output voltage	$V_{OL}$			0.35	V
$V_{DD}$ quiescent supply current	$I_Q$		280	400	$\mu\text{A}$
Output high short-circuit pulse current	$I_{O+}$		4		A
Output low short-circuit pulse current	$I_{O-}$		4		A
Rise time	$t_R$		5		ns
Fall time	$t_F$		4		ns
Turn-on propagation delay	$t_{ON}$		25		ns
Turn-off propagation delay	$t_{OFF}$		25		ns



## 10.Function Description

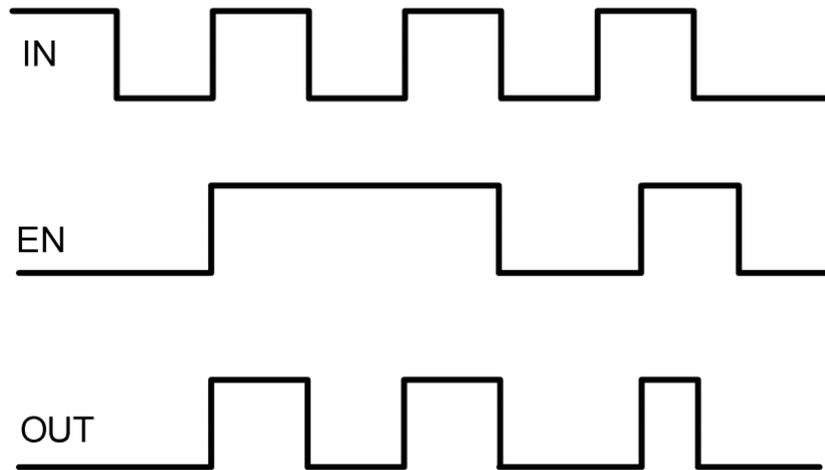


Figure 1. Input-Output waveform

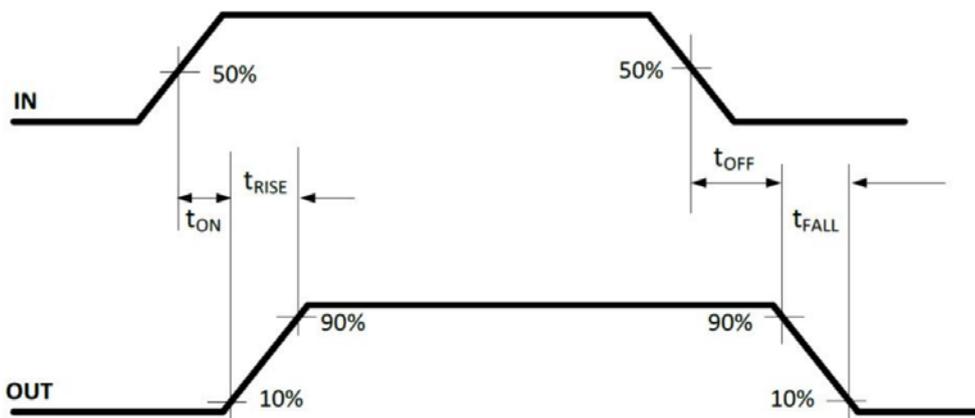


Figure 2. Propagation Time Waveform Definition



## 11. Function Block Diagram

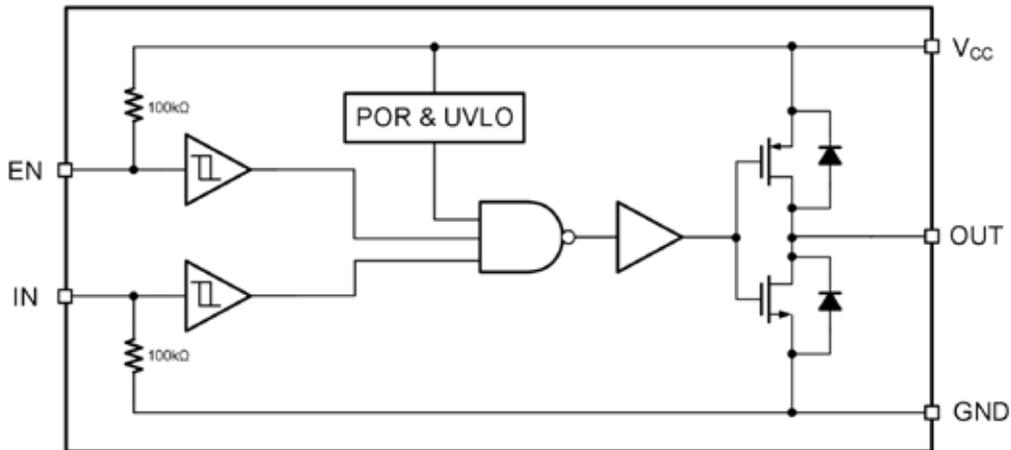


Figure 3. Function Block Diagram of UMW UCC27519DBVR

## 12. Application Message

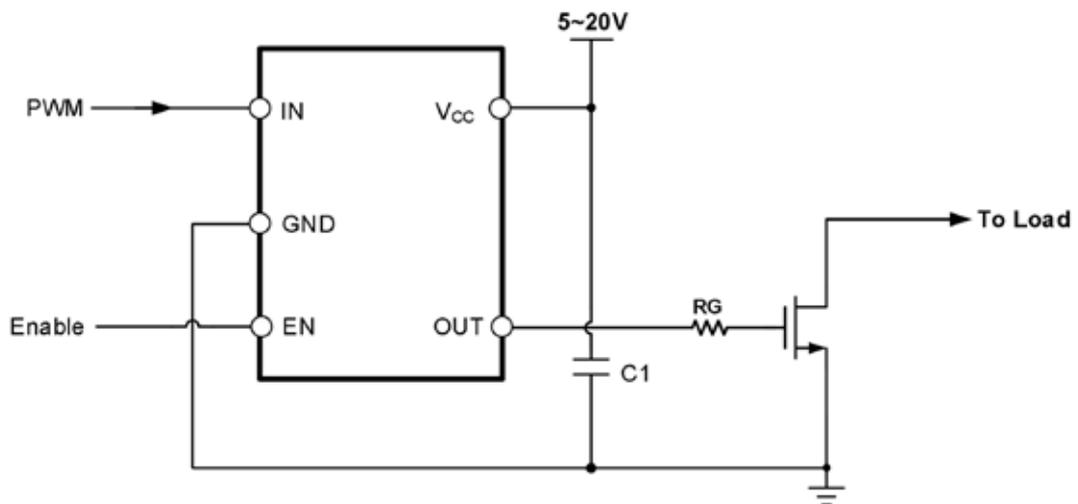
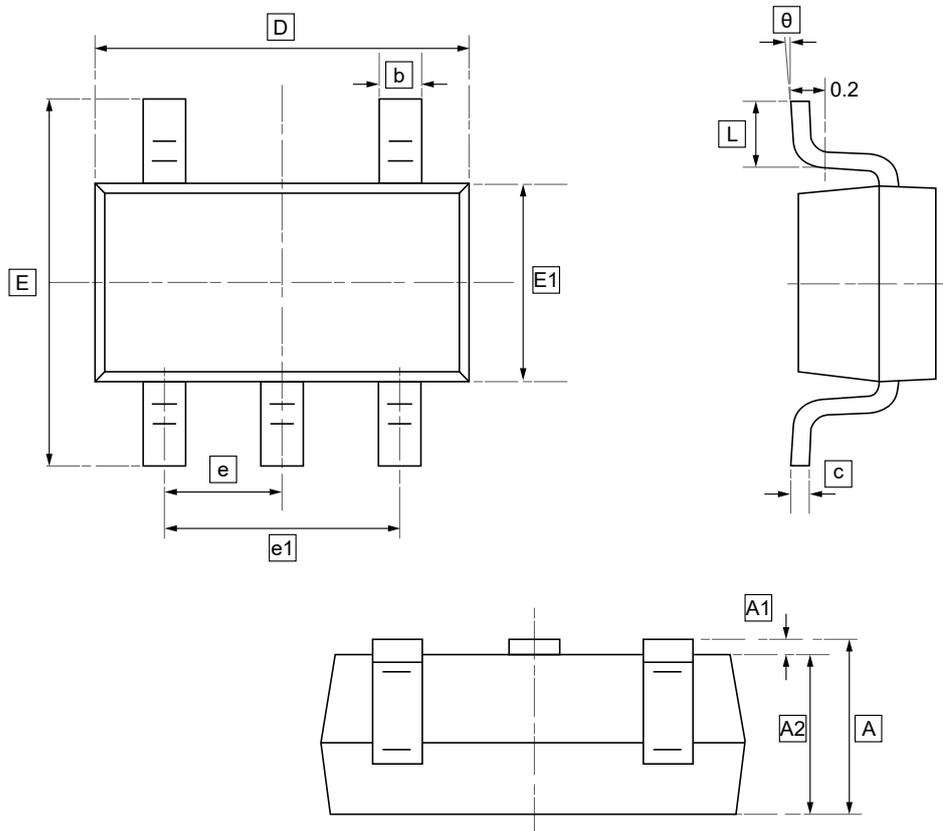


Figure 4. Typical application circuit of UMW UCC27519DBVR



## 13.SOT23-5 Package Outline Dimensions

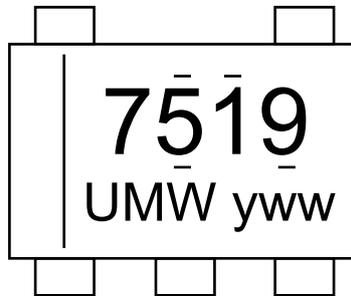


### DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E1	E	e	e1	L	θ
Min	1.050	0.000	1.050	0.300	0.100	2.820	1.500	2.650	0.950	1.800	0.300	0°
Max	1.250	0.100	1.150	0.500	0.200	3.020	1.700	2.950	BSC	2.000	0.600	8°



## 14. Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW UCC27519DBVR	SOT23-5	3000	Tape and reel



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