



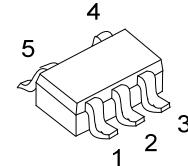
SINGLE-CHANNEL HIGH-SPEED MOSFET DRIVER

DESCRIPTION

The UTC **US2829** is a single-channel high-speed MOS-FET driver. The device is fabricated by use of BICMOS outputs to achieve high switching speed. The outputs are capable of delivering peak currents up to 2A into capacitive loads.

FEATURES

- * Low-cost single-channel high-speed MOSFET driver
- * 2A peak output current
- * 25ns max rise/fall times and 40ns max propagation delay, 1nF load
- * Low power dissipation: $I_{CC}=15\mu A(\text{Max})$ @ $T_a=25^\circ C$
- * Broad V_{CC} operating range: 4V to 14V



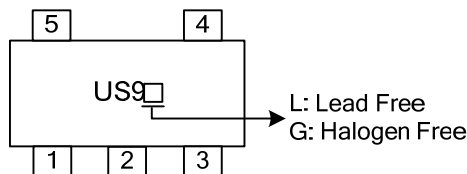
SOT-25

ORDERING INFORMATION

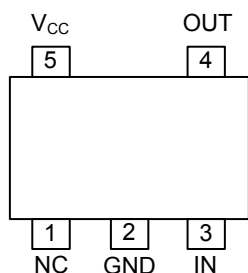
Ordering Number		Package	Packing
Lead Free	Halogen Free		
US2829L-AF5-R	US2829G-AF5-R	SOT-25	Tape Reel

 US2829L-AF5-R	(1) Packing Type	(1) R: Tape Reel
	(2) Package Type	(2) AF5: SOT-25
	(3) Lead Free	(3) H: Halogen Free, L: Lead Free

MARKING



■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	NC	Not connected
2	GND	Ground Connection
3	IN	Driver input
4	OUT	Driver output, OUT= IN
5	V _{CC}	Driver supply voltage/regulator output voltage

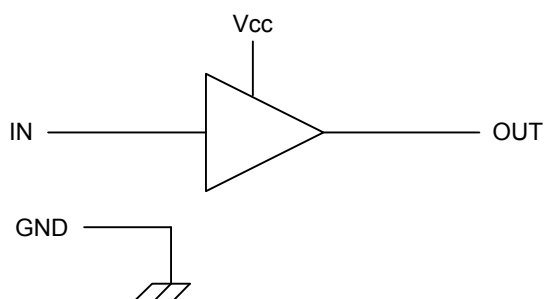
■ FUNCTION TABLE

INPUT(IN)	OUTPUT(OUT)
H	H
L	L

H: High Level

L: Low Level

■ LOGIC DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.3 ~ +15	V
Input Voltage	V_{IN}	-0.3 ~ $V_{CC} + 0.5$	V
Output Voltage	V_{OUT}	-0.5 ~ $V_{CC} + 0.5$	V
Continuous Output Current	I_{OUT}	±100	mA
Power Dissipation	P_D	437	mW
Derated Above 25°C		3.5	mW/°C
Operating Temperature	T_{OPR}	-40 ~ + 125	°C
Storage Temperature	T_{STG}	-65 ~ + 150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}	4		14	V
Input Voltage	V_{IN}	-0.3		V_{CC}	V
Operating Temperature	T_{OPR}	-40		125	°C

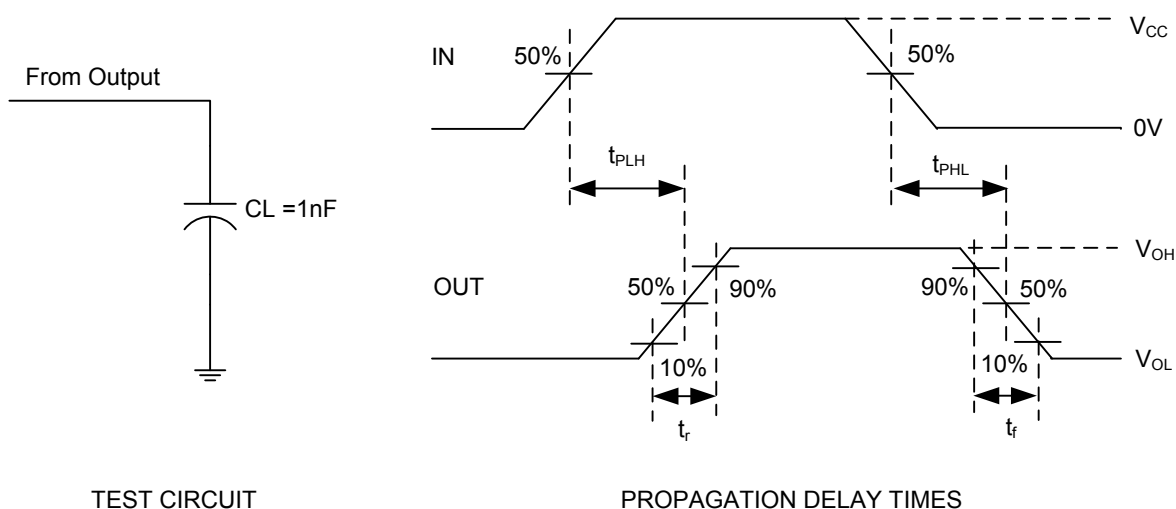
■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Output Voltage	V_{OH}	$V_{CC}=10\text{V}$, $I_{OH}=-1\text{mA}$	9.75	9.9		V
		$V_{CC}=10\text{V}$, $I_{OH}=-100\text{mA}$	8	9.1		V
Low-Level Output Voltage	V_{OL}	$V_{CC}=10\text{V}$, $I_{OL}=1\text{mA}$		0.18	0.25	V
		$V_{CC}=10\text{V}$, $I_{OL}=100\text{mA}$		1	2	V
Positive-going input threshold voltage	V_{T+}	$V_{CC}=5\text{V}$		3.3	4	V
		$V_{CC}=10\text{V}$		6.6	7	V
		$V_{CC}=14\text{V}$		9.3	10	V
Negative-going input threshold voltage	V_{T-}	$V_{CC}=5\text{V}$	1	1.7		V
		$V_{CC}=10\text{V}$	2	3.3		V
		$V_{CC}=14\text{V}$	2.5	4.6		V
Input voltage hysteresis	$V_{T+}-V_{T-}$			1.3		V
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC}=10\text{V}$, $V_{IN}=0$ or V_{CC}		0.2		μA
Supply Current	I_{CC}	$V_{CC}=10\text{V}$, $V_{IN}=V_{CC}$ or GND, $I_{OUT}=0$		0.1	15	μA
Input Capacitance	C_{IN}	$V_{CC}=10\text{V}$		5	10	pF

■ SWITCHING CHARACTERISTICS (see TEST CIRCUIT AND WAVEFORMS)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (IN) to output(OUT)	t_{PLH} t_{PHL}	$V_{CC}=14\text{V}$, $C_L=1\text{nF}$			40	ns
		$V_{CC}=10\text{V}$, $C_L=1\text{nF}$		24	45	ns
		$V_{CC}=5\text{V}$, $C_L=1\text{nF}$			50	ns
Output transition time	t_r/t_f	$V_{CC}=14\text{V}$, $C_L=1\text{nF}$			25	ns
		$V_{CC}=10\text{V}$, $C_L=1\text{nF}$		14	30	ns
		$V_{CC}=5\text{V}$, $C_L=1\text{nF}$			35	ns

■ TEST CIRCUIT AND WAVEFORMS



Note: C_L includes probe and jig capacitance.

All input pulses are supplied by generators having the following characteristics: $P_{RR} \leq 1\text{MHz}$, $Z_O = 50\Omega$, $t_R \leq 6\text{ns}$, $t_F \leq 6\text{ns}$.

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