



UHC288C

Preliminary

CMOS IC

HIGH VOLTAGE BUILT-IN PULL HIGH RES OMNIPOLAR HALL EFFECT SWITCH

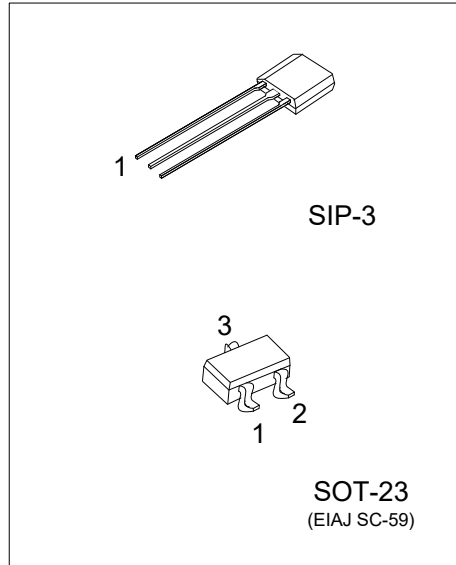
DESCRIPTION

UTC **UHC288C** Hall effect switch is a temperature stable, Superior high-temperature performance is made possible through a dynamic offset cancellation that utilizes chopper-stabilization.

UTC **UHC288C** includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifies the Hall voltage, and a Schmitt trigger to provide switching hysteresis for noise rejection, and built-in pull high resistance output.

This device requires the presence of omni-polar magnetic fields for operation.

The package type is in a Halogen Free version was verified by third party Lab.



FEATURES

- * Operation range from 3.0V to 26V
- * Omni polar, output switches with absolute value of North or South pole from magnet
- * Reverse bias protection on power supply pin
- * High Sensitivity for reed switch replacement applications
- * Low sensitivity drift in crossing of Temp range

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UHC288CL-AE3-R	UHC288CG-AE3-R	SOT-23	I	O	G	Tape Reel
UHC288CL-G03-B	UHC288CG-G03-B	SIP-3	I	G	O	Tape Box
UHC288CL-G03-K	UHC288CG-G03-K	SIP-3	I	G	O	Bulk

Note: Pin Assignment: I: V_{DD} G: GND O: Output

<p>UHC288CG-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk (2) AE3: SOT-23, G03: SIP-3 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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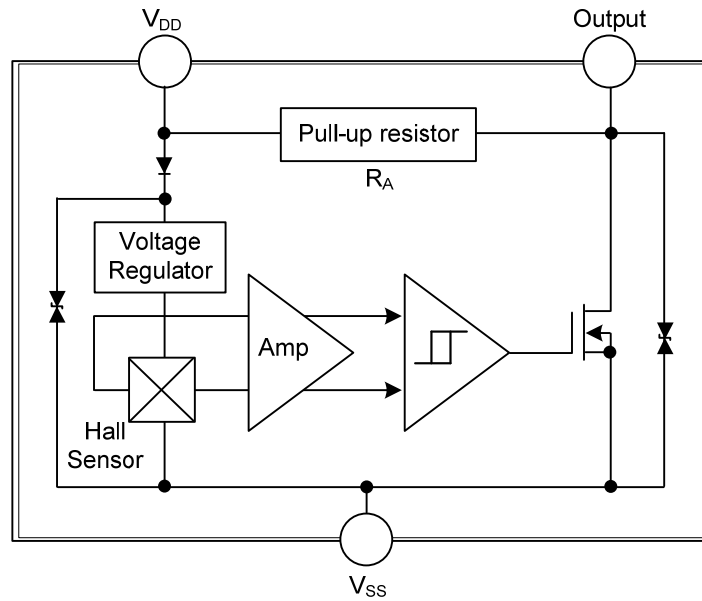
MARKING

SOT-23	SIP-3

■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V _{DD}	Supply voltage
2	GND	Ground
3	Output	Output voltage

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{DD}	28	V
Output Voltage		V_{OUT}	28	V
Reverse Voltage		V_{DD} / V_{OUT}	-28 / -0.3	V
Power Dissipation	SOT-23	P_D	200	mW
	SIP-3		400	mW
Output Current		I_{SINK}	25	mA
Operating Temperature Range		T_A	-40 ~ +85	$^{\circ}\text{C}$
Junction Temperature		T_J	+125	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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.

■ ELECTRICAL CHARACTERISTICS

(DC Operating Parameters $V_{DD}=12\text{V}$, $T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{DD}	Operating	3.0		26	V
Supply Current	I_{DD}	$B < B_{OP}$		2.5	5.0	mA
Output Saturation Voltage	V_{DSON}	$I_{out}=20\text{mA}, B > B_{OP}$		300	550	mV
Output Leakage Current	I_{OFF}	$I_{OFF} B < B_{RP}, V_{OUT} = 20\text{V}$			10	μA
Output Switch Frequency	F_{SW}		3			kHz
Pull-up Resistor	R_A			10		$\text{K}\Omega$

■ MAGNETIC CHARACTERISTICS ($V_{DD}=12\text{V}$, $T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operate Point, BOPS	B_{OPN}	$B > B_{OPS} (B < B_{OPN}), V_{OUT} \text{ On}$	255 (-540)	395 (-395)	540 (-255)	Gauss
Release Point, BRPS	B_{RPN}	$B < B_{RPS} (B > B_{RPN}), V_{OUT} \text{ Off}$	230 (-490)	355 (-355)	490 (-230)	Gauss
Hysteresis	B_{HYS}	$ B_{OP} - B_{RP} $		40		Gauss

Note: 1. Note: $1\text{mT}=10 \text{ Gauss}$.

2. The magnetic pole is applied facing the branded side of the SIP-3 package.

■ CHYSTERESIS CHARACTERISTICS

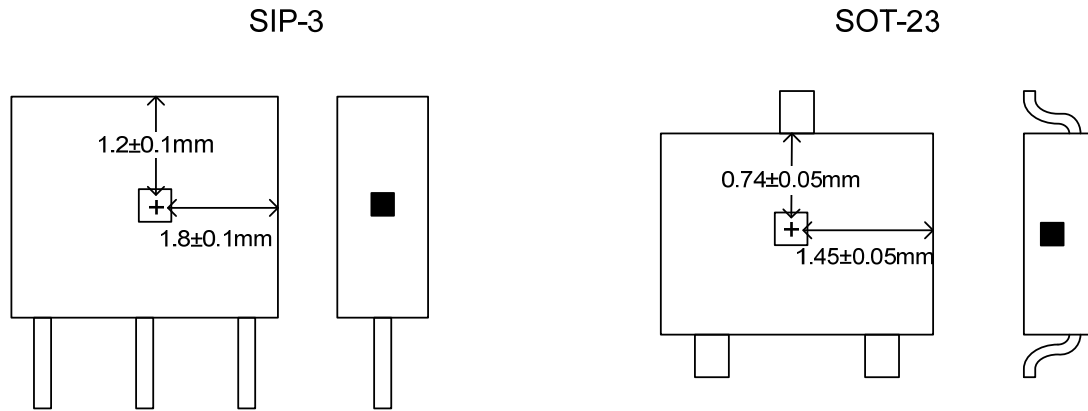


Fig. 1 SENSOR LOCATIONS

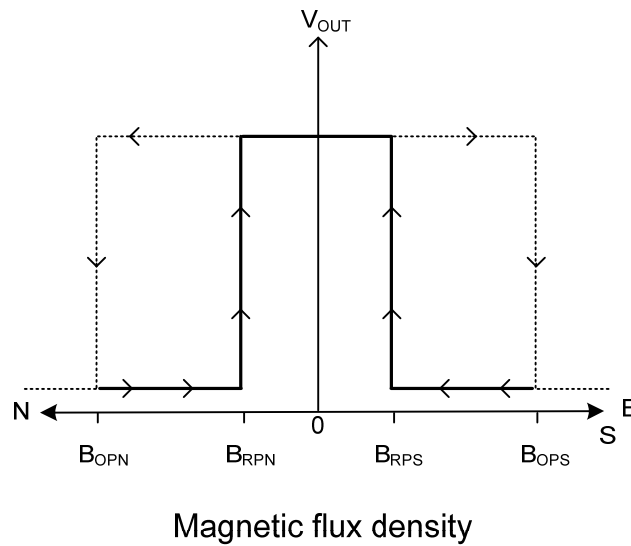
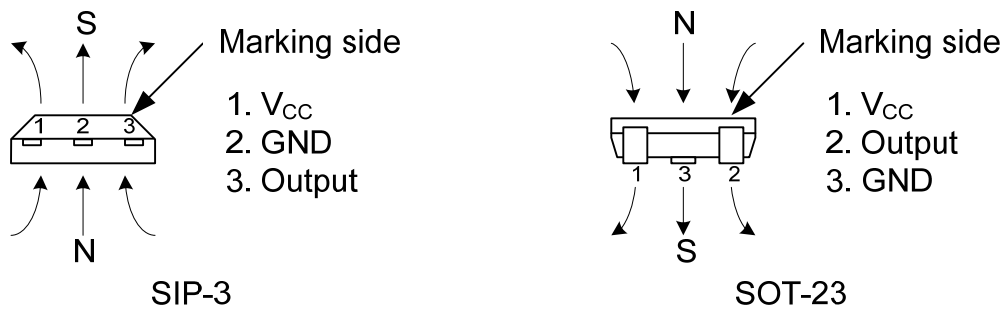
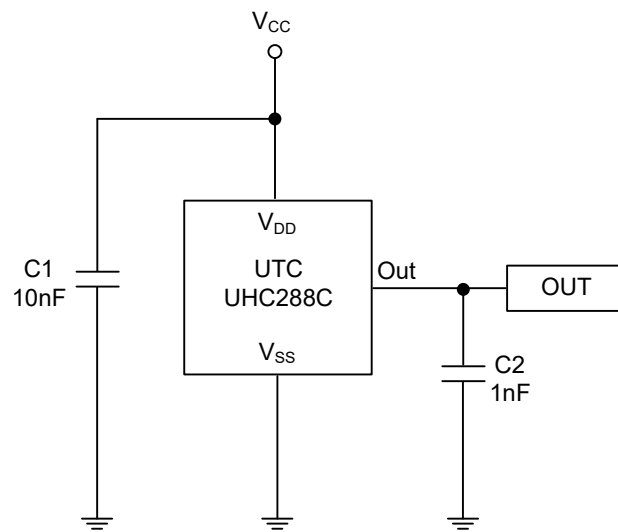


Fig. 2 APPLYING DIRECTION OF MAGNETIC FLUX

■ TYPICAL APPLICATION CIRCUIT



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