## UTC U652 LINEAR INTEGRATED CIRCUIT

# SINGLE OUTPUT HALL EFFECT LATCH

## GENERAL DESCRIPTION

The UTC U652 is a Integrated Hall sensor with latch designed for electronic commutation of brushless DC motor applications. The device 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 open-collector output. An internal bandgap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

### FEATURES

\*3.5V to 20V operation

\*On-chip Hall sensor with two different sensitivity and hysteresis settings.

\*Internal bandgap regulator allows temperature compensated operations and a wide operating voltage range.

\*Open-Collector 25mA Output. \*Reverse Polarity Protection.

Reverse Folding Frolection.



1: Vcc 2: GND 3: OUTPUT



### **PIN DESCRIPTIONS**

NAME	P/I/O	PIN NO.	DESCRIPTION		
Vcc	Р	1	Positive Power Supply		
Vss	Р	2	Ground		
DO	0	3	OUTPUT Pin		

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#### ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

CHARACTERISTIC	SYMBOL	VALUE	UNIT			
Supply Voltage	Vcc	20	V			
Reverse Vcc Polarity Voltage	VRCC	-20	V			
Magnetic flux density	В	Unlimited				
Output OFF Voltage	Vce	30	V			
Output ON Current	lc	30	mA			
Operating Temperature Range	Та	0 ~ 70	О°			
Storage Temperature Range	Ts	-65 ~ 150	٥C			
Package Power Dissipation Po		400	mW			

## ELECTRICAL CHARACTERISTICS( Ta=25°C, Vcc=3.5V to 20V )

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CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Operating Supply Voltage	Vcc		8		20	V
Output Saturation Voltage	Vce(sat)	Vcc=14V,Ic=20mA		300	700	mV
Output Leakage Current	Icex	Vce=14V,Vcc=14V		<0.1	10	uA
Supply Current	lcc	Vcc=20V, Output Open		5	10	mA
Output Rise Time	tr	Vcc=14V,RL=820Ω,CL=20pF		0.3	1.5	us
Output Falling Time	tf	Vcc=14V,RL=820Ω,CL=20pF		0.3	1.5	us

### MAGNETIC CHARACTERISTICS

CHARACTERISTIC	SYMBOL	Ta=25°C		Ta=0 ~ 70°C		UNIT
		Min	Max	Min	Max	
Operate Point	Вор	10	120	5	120	G
Release Point	Brp	-120	-10	-120	-5	G
Hysteresis	Bhys	20	240	10	240	G

#### CLASSIFICATION OF OPERATING POINT

RANK	А	В
Вор	10 70	60 120
Brp	-10 -70	-60 -120
Bhys	20 140	120 240

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TEST CIRCUIT



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