

Installation Instructions for the VF526DT Bipolar Latch, Dual Hall-Effect Digital Position Sensor with Speed and Direction Outputs

ISSUE 1
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GENERAL INFORMATION

The VF526DT is a bipolar latch, dual output, digital Hall-effect sensor. The two active Hall latches provide speed and direction indication of a magnetic gradient (such as a rotating ring magnet) across the face of the package.

CAUTION

ELECTROSTATIC DISCHARGE DAMAGE

This component is sensitive to electrostatic discharge (ESD). Take normal ESD precautions in handling this product to prevent ESD-induced damage and/or degradation.

Failure to comply with these instructions may result in product damage.



SOLDERING/ASSEMBLY

CAUTION

IMPROPER SOLDERING

- Ensure leads are adequately supported during any forming/shearing operation so that they are not stressed inside the plastic case.
- Limit exposure to high temperatures.
- Do not wave solder the VF526DT.

Failure to comply with these instructions may result in product damage.

Recommended Soldering Process

Use an infrared reflow process with temperatures of 260 °C [500 °F] peak, for 10 s max.

Table 1. Absolute Maximum Ratings¹

Characteristic	Sym.	Min.	Max.	Unit
Supply voltage	V _{cc}	-0.5	30	V
Output voltage (OFF)	V _{out}	-0.5	30	V
Output ON current	I _{out}	–	10	mA
Storage temp.	T _s	-65 [-85]	160 [320]	°C [°F]
Operating temp.	T	-40 [-40]	150 [302]	°C [°F]
ESD:				
IEC 801-2, Lev 1	ESD	2	–	KV
MIL-STD-883,		4	–	
Method 3015.7				
Magnetic flux		no limit		–

Note 1: Absolute maximum ratings are the extreme limits that the device will withstand without damage to the device. However, the electrical and mechanical characteristics are not guaranteed as the maximum limits (above recommended operating conditions) are approached, nor will the device necessarily operate at absolute maximum ratings.

Figure 1. Output Timing Diagram

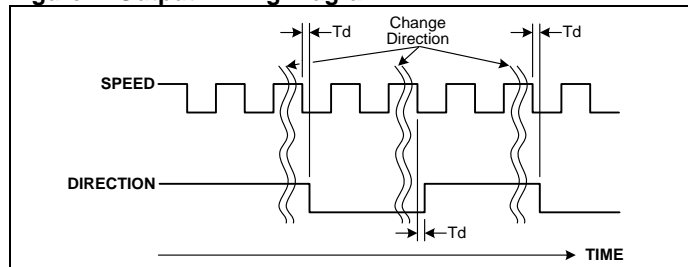


Figure 2. Sensor Function Diagram with Customer-Supplied Magnet

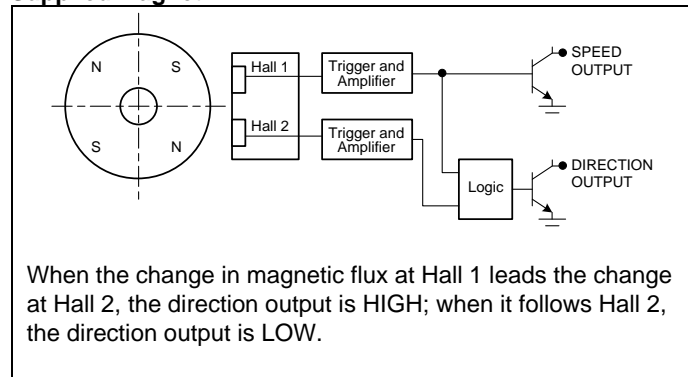


Table 2. Specifications

Characteristic	Sym.	Condition	Min.	Typ.	Max.	Unit
Magnetic actuation type		bipolar latch				
Output type		dual open collector, sinking (speed and direction)				
Supply voltage	Vcc	-	3.4	-	24	Vdc
Operating temperature	Temp	-	-40 [-40]	-	125 [257]	°C [°F]
Supply current (OFF)	Ioff	Vcc = 24 V, -40 °C < T < 125 °C, Vout = 24 V, B<MIN REL	-	-	12	mA
Supply current (ON)	Ion	Vcc = 24 V, -40 °C < T < 125 °C, Isink = 5 mA, B<MAX OP	-	-	14	mA
Load current	Isink	Vcc = 24 V, -40 °C < T < 125 °C, Isink = 5 mA, B<MAX OP	-	-	5	mA
Output saturation	Vsat	Vcc = 24 V, -40 °C < T < 125 °C, Isink = 5 mA, B<MAX OP	-	-	0.4	V
Circuit speed to direct delay	Td	Vcc = 12 V, RL = 1.6 kOhm, CL = 20 pF	-	-	5	µs
Rise time	Tr	Vcc = 12 V, RL = 1.6 kOhm, CL = 20 pF	-	-	1.5	µs
Fall time	Tf	Vcc = 12 V, RL = 1.6 kOhm, CL = 20 pF	-	-	1.5	µs
Frequency	Top	Vcc = 12 V, RL = 1.6 kOhm, CL = 20 pF	<1	-	>1000	Hz
Operate point	Bop	T = 25 °C -40 °C < T < 125 °C	-	130	-	Gauss
Release point	Brel	T = 25 °C -40 °C < T < 125 °C	-	-130	-	Gauss
Differential (OP-REL)	Diff	T = 25 °C -40 °C < T < 125 °C	-	260	-	Gauss
Symmetry ((OP +REL)/2)	Sym	T = 25 °C -40 °C < T < 125 °C	-	0	-	Gauss
Package style		SOT-89B				
Moisture sensitivity test		similar to JEDEC J-STD-020B, MSL Level 1				
Package quantity		available in 1000/tape and reel				

Figure 3. Mounting Dimensions (For reference only. mm/[in.])

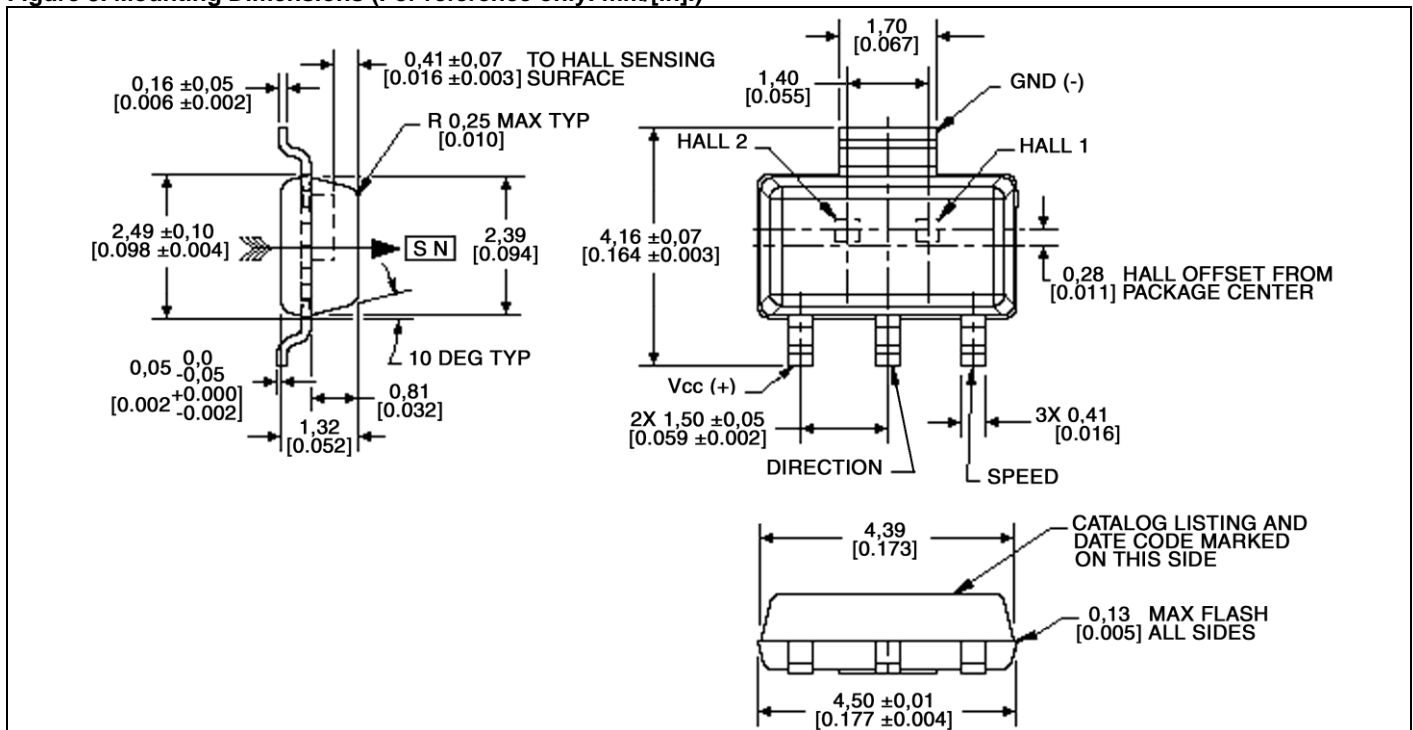
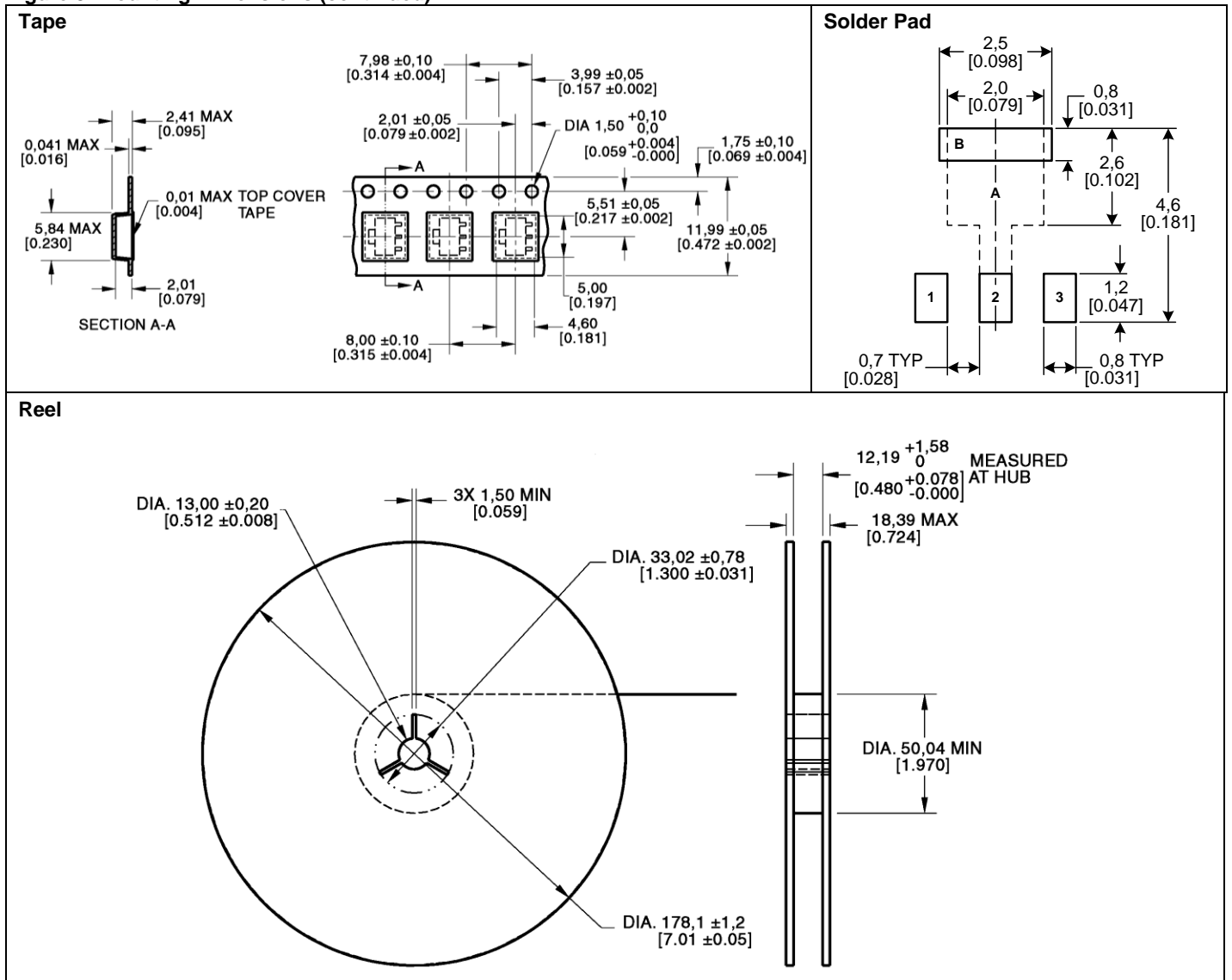


Figure 3. Mounting Dimensions (continued)



WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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