



# Magnetic Sensor IC Selection Chart

## A Technical Note

Tables 1, 2, 3, and 4 provide an overview of Honeywell's Hall-effect and anisotropic magnetoresistive (AMR) sensor ICs.

**Table 1. Digital Position Sensor ICs**

Product Type	Package Style								Typical Operate (Gauss)	Typical Release (Gauss)	Maximum Operate (Gauss)	Reverse Polarity	Operating Temp. (°C)	Supply Voltage (Vdc)	Typical Current Supply (mA)
	SOT-23		TO-92-Style or U-Pack <sup>1</sup> Straight Standard Leads		TO-92-Style SMT		SOT-89B								
	Catalog Listing	Standard Label	Catalog Listing	Standard Label	Catalog Listing	Standard Label	Catalog Listing	Standard Label							
<b>Bipolar</b>															
Hall effect	SS30AT	S30A	SS40A	40A	—	—	SS50AT	SS50A	45	-45	170	yes	-40 to 125	4.5 to 24	6.8
	SS311PT	311P	SS411P	411P	—	—	—	—	60	-80	140	—	-40 to 150	2.7 to 7	5.5
	—	—	SS41	S41	—	—	SS51T	SS51	40	-40	250	yes	-40 to 150	4.5 to 24	5.8
	—	—	411A	11A	—	—	SS511AT	S511A	20	-20	70	—	-40 to 150	3.8 to 30	6.5
	—	—	SS413A	13A	—	—	SS513AT	S513A	50	-50	140	—	-40 to 150	3.8 to 30	6.5
<b>Latching</b>															
Hall effect	VF360NT <sup>2</sup> VF360ST <sup>2</sup>	360NT 360ST	VF460S <sup>2</sup>	460S	—	—	—	—	30	-30	55	yes	-40 to 150	3 to 24	4
	SS360NT SS360ST SS360PT	360NT 360ST 360PT	SS460S SS460P	460S 460P	—	—	—	—	30	-30	55	yes	-40 to 150	3 to 24	4
	SS361RT	361RT	SS461R	461R	—	—	—	—	50	-50	120	yes	-40 to 150	3 to 24	4
	SS361CT	361CT	SS461C	461C	—	—	—	—	50	-50	95	yes	-40 to 125	4 to 24	4
	—	—	SS461A	61A	—	—	—	S561A	50	-50	110	—	-40 to 150	3.8 to 30	6.5
	—	—	SS466A	66A	—	—	—	S566A	140	-140	200	—	-40 to 150	3.8 to 30	6.5
<b>Unipolar</b>															
Hall effect	SS341RT	341RT	SS441R	441R	—	—	—	—	75	35	135	yes	-40 to 150	3 to 24	4
	SS343RT	343RT	SS443R	443R	—	—	—	—	135	85	205	yes	-40 to 150	3 to 24	4
	SS349RT	349RT	SS449R	449R	—	—	—	—	305	225	460	yes	-40 to 150	3 to 24	4
	SS345PT	345PT	SS445P	445P	—	—	—	—	180	105	280	—	-40 to 150	2.7 to 7	5.5
	—	—	SS441A	41A	SS541AT	S541A	—	—	85	58	135	—	-40 to 150	3.8 to 30	6.5
	—	—	SS443A	43A	SS543AT	S543A	—	—	145	115	215	—	-40 to 150	3.8 to 30	6.5
	—	—	SS449A	49A	SS549AT	S549A	—	—	350	275	435	—	-40 to 150	3.8 to 30	6.5
<b>Omnipolar</b>															
Hall effect	SS351AT	351AT	SS451A	451A	SS551AT	S551A	—	—	±85	±40	±135	yes	-40 to 150	3 to 24	4.5
AMR	—	—	2SS52M	2SSM	2SS52M-S	2SSM	2SS52MT	S552M	±15	±11	±25	—	-40 to 150	3.8 to 30	6.5
AMR Standard Power	SM351RT SM353RT	SM351R SM353R	SM451R SM453R	451R 453R	—	—	—	—	±7 ±14	±5 ±10	±11 ±20	—	-40 to 85 -40 to 85	3 to 24 3 to 24	4 4
AMR Low Power	SM351LT SM353LT	SM351L SM353L	—	—	—	—	—	—	±7 ±14	±5 ±10	±11 ±20	—	-40 to 85 -40 to 85	1.65 to 5.5 1.65 to 5.5	0.36 µA 0.35 µA
Hall effect Low Power	SL353HT SL353LT	L353H L353L	—	—	—	—	—	—	±60 ±60	±45 ±45	±110 ±110	—	-40 to 85 -40 to 150	2.2 to 5.5 2.2 to 5.5	330 µA 1.8 µA

<sup>1</sup>U-pack package style applies to the 2SS52M Series only.

<sup>2</sup>Qualified to AEC-Q100 (Grade 0).

**Table 2. Linear Sensor ICs**

Package Style								Typical Sensitivity (mV/Gauss)	Typical Range (Gauss)	Operating Temp. (°C)	Supply Voltage (Vdc)	Typ. Current (mA)
SOT-23		TO-92-Style Straight Standard Leads		TO-92-Style SMT		SOT-89B						
Catalog Listing	Standard Label	Catalog Listing	Standard Label	Catalog Listing	Standard Label	Catalog Listing	Standard Label					
SS39ET	—	SS49ET	49E	—	—	SS59ET	SS59E	1.4	±1000	-40 to 100	2.7 to 6.5	6
—	—	SS494B	94B	SS494B-SP	94B	—	—	5.0	±420	-40 to 150	4.5 to 10.5	7
—	—	SS495A	95A	SS495A-SP	95A	—	—	3.125	±670	-40 to 150	4.5 to 10.5	7
—	—	SS495A1	95A	SS495A1-SP	95A	—	—	3.125	±670	-40 to 150	4.5 to 10.5	7
—	—	SS495A2	95A	SS495A2-SP	95A	—	—	3.125	±670	-40 to 150	4.5 to 10.5	7
—	—	SS495B	95B	SS495B-SP	95B	—	—	3.125	±670	-40 to 150	4.5 to 10.5	7
—	—	SS496A	96A	SS496A-SP	96A	—	—	2.50	±840	-40 to 150	4.5 to 10.5	7
—	—	SS496A1	96A	SS496A1-SP	96A	—	—	2.50	±840	-40 to 150	4.5 to 10.5	7
—	—	SS496B	96B	SS496B-SP	96B	—	—	2.50	±840	-40 to 150	4.5 to 10.5	7
—	—	—	—	VF495A1-SP <sup>1</sup>	495A	—	—	3.125	±670	-40 to 150	4.5 to 10.5	7

<sup>1</sup> Qualified to AEC-Q100 (Grade 0).

**Table 3. Angular AMR Position Sensor IC**

SOIC-8 Package Style		Typical Sensitivity (mV/deg.)	Typical Range (degree)	Operating Temp. (°C)	Supply Voltage (Vdc)	Current (mA)
Catalog Listing	Standard Label					
APS00B	—	2.1	±90	-40 to 150	1 to 12	7 max.

**Table 4. Speed and Direction, Speed Sensor ICs**

Product Type	Catalog Listing	Standard Label	Function	Target	Package Style	Output	Typical Sensitivity (Gauss)	Operating Temp. (°C)	Supply Voltage (Vdc)	Current (mA)	
AMR	VM721V1 <sup>1,2</sup>	VM721V1	speed sensing	ring magnet encoder	2-pin SIP, wide leads	2-pin current	±30	-40 to 150	-40°C to 110°C: 4.0 V to 24 V	high: 14 typ. low: 6.95 typ.	
	VM721D1 <sup>1,2</sup>	VM721D1 VM721D1	speed and direction sensing		2-pin SIP, wide leads	2-pin pulse width modulated (PWM)			-150°C: 4.0 V to 9 V		
	VM821Q1	VM821Q1	speed and direction or position sensing		4-pin SIP	quadrature, dual open collector sinking			4.0 V to 24 V		20 max.
	VF401	VF401			VF401 2-pin, TO-92-style, straight standard leads	2-pin current			4.0 V to 16 V		high: 14 typ. low: 7 typ
Hall effect, back biased	VG481V1 <sup>1</sup>	VG481V1	speed sensing	ferrous gear tooth wheel	TO-92-style, straight standard leads	sinking	49.5	-40 to 150	4 V to 24 V	10 max.	
Hall effect, dual latching	VF526DT	V526	speed and direction sensing	ring magnet encoder	SOT-89B	dual open collector sinking	130	-40 to 125	43.4 V to 24 V	off: 12 max. on: 14 max.	
	SS526GT	S526G									

<sup>1</sup> Qualified to AEC-Q100 (Grade 0).

<sup>2</sup> ISO26262 ASIL B(D) compliant.

**For More Information**

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