Honeywell

Honeywell Sensing and Control

SS41

Actual product appearance may vary.

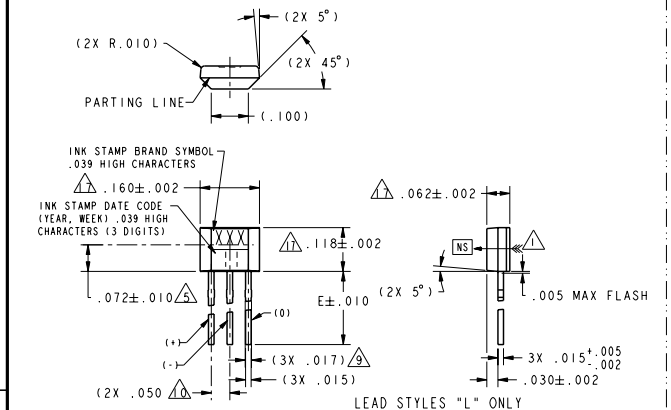
SS40 Series Bipolar Hall-Effect Digital Position Sensor; radial lead IC package

Features

- Small size
- Reverse power polarity protection
- Current sinking output
- Sensitive magnetic characteristics
- Operating speed from 0 kHz to over 100 kHz

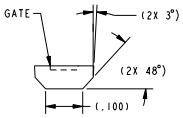
Product Specifications	
Product Type	Hall-Effect Digital Position Sensor
Package Quantity/Type	Available in 1,000/Bag
Package Style	Radial Lead IC
Supply Voltage	4.5 Vdc to 24.0 Vdc
Output Type	Sink
Magnetic Actuation Type	Bipolar
Operating Temperature Range	-55 °C to 150°C [-67 °F to 302 °F]
Output Voltage	0.15 Vdc typ./0.40 Vdc max.
Switching Time Rise (10 % to 90 %)	1.5 µs max.
Switching Time Fall (90 % to 10 %)	1.0 µs max.
Availability	Global
Supply Current (max. @ 25 °C)	15 mA
Output Current (max.)	20 mA
Operate Point @ 25 °C	4.0 mT [40 G] typ.
Release Point @ 25 °C	-4.0 mT [-40 G] typ.
Leakage Current max.	10 µA

Differential	8.0 mT [80 G] typ.
Series Name	SS40

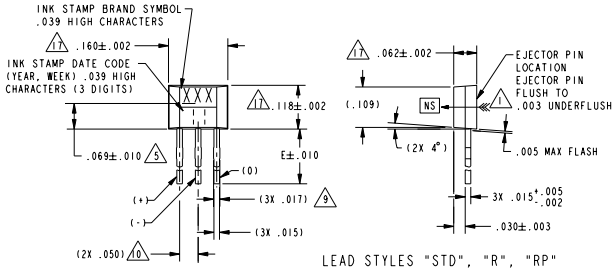


LEAD STYLES "L" ONLY

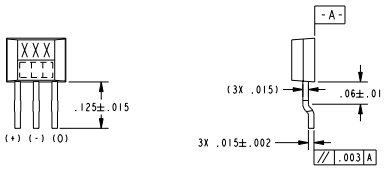
LEAD STYLES



ALL EXCEPT "L" LEAD STYLES



LEAD STYLES "STD", "R", "RP"



LEAD STYLES "S" & "SP" ⚠11

ANSI Y14.5M-1982 APPLIES

NOTES

⚠1 THE MAGNETIC FLUX USED TO OPERATE THE SWITCH MUST BE IN THE DIRECTION AND LOCATION SHOWN (THIS ASSUMES THE CONVENTION THAT THE DIRECTION OF THE EXTERNAL FLUX OF A MAGNET IS FROM THE NORTH TO THE SOUTH POLE OF THE MAGNET)

⚠2 THE MAGNETIC FIELD STRENGTH (GAUSS) REQUIRED TO CAUSE THE SWITCH TO CHANGE STATE (OPERATE AND RELEASE) WILL BE AS TABULATED. TO TEST THE SWITCH AGAINST THE SPECIFIED LIMITS, THE SWITCH MUST BE PLACED IN A UNIFORM MAGNETIC FIELD

⚠3 ABSOLUTE MAXIMUM RATINGS ARE THE EXTREME LIMITS THE DEVICE WILL MOMENTARILY WITHSTAND WITHOUT DAMAGE TO THE DEVICE. ELECTRICAL AND MAGNETIC CHARACTERISTICS ARE NOT GUARANTEED IF THE RATED VOLTAGE AND/OR CURRENTS ARE EXCEEDED NOR WILL THE DEVICE NECESSARILY OPERATE AT ABSOLUTE MAXIMUM RATINGS

⚠4 AMMOPACK STYLE "T2" & "T3". 24 SWITCHES BETWEEN FOLDS, SKIP 1 SPACE AT FOLD. MAY BE REFERRED TO AS "FAN FOLD"

⚠5 HALL ELEMENT LOCATION WITH INTEGRATED CIRCUIT TOLERANCE

6 - LEADS MUST BE ADEQUATELY SUPPORTED DURING ANY FORMING/ SHEERING OPERATION TO ASSURE THAT THE LEADS ARE NOT STRESSED WITHIN THE PLASTIC

7 - PCB WAVE SOLDERING GUIDELINES ARE AS FOLLOWS:
250°C TO 260°C SOLDERING TEMPERATURE 3 SECONDS MAX SOLDERING TIME

⚠8 28 VDC MAX EXTERNALLY APPLIED OUTPUT VOLTAGE IN OFF CONDITION ONLY, -0.5 VDC LIMIT MAY BE APPLIED WITH SWITCH IN ON OR OFF CONDITION

⚠9 BURRS ARE ALLOWED ONLY IF FULL LENGTH OF LEADS WILL PASS THROUGH Ø.023 HOLE. LEAD REFERENCE DIMENSIONS DO NOT INCLUDE SOLDER THICKNESS

⚠10 DIMENSION REFERS TO THE LOCATION OF LEAD CENTERLINES AS THEY EXIT THE PLASTIC PACKAGE

⚠11 TYPICAL DIMENSIONS NOT SHOWN IN LEAD STYLE "S"

⚠12 SOME COMBINATIONS OF BASIC LISTING AND PACKING OPTIONS ARE NOT AVAILABLE

⚠13 TAPE AND AMMOPACK PER EIA-468-A-1990

⚠14 TAPE AND REEL PER EIA-481-A-1986

⚠15 LEAD STRAIGHTNESS MAY BE DETERIORATED ON SOME UNITS BY BULK PACKAGING. APPLICATIONS HAVING A CRITICAL LEAD STRAIGHTNESS REQUIREMENT SHOULD USE A TAPE PACKAGING OPTION

⚠16 SOURCE VOLTAGE IS 12VDC UNLESS OTHERWISE SPECIFIED

⚠17 MOLDED PART DIMENSIONS DO NOT INCLUDE FLASH. FLASH IS LIMITED TO .005 MAX

⚠18 THESE HALL EFFECT SENSORS MAY HAVE AN INITIAL OUTPUT IN EITHER THE ON OR OFF STATE IF POWERED UP WITH AN APPLIED MAGNETIC FIELD IN THE DIFFERENTIAL ZONE (APPLIED MAGNETIC FIELD > Brp AND < Bop). MICRO SWITCH RECOMMENDS THAT THE APPLICATION CIRCUIT DESIGNER ALLOW 10 MICROSECONDS AFTER SUPPLY VOLTAGE HAS REACHED 5 VOLTS FOR THE OUTPUT VOLTAGE TO STABILIZE

SS40 SERIES CHART 1 | SHEET 1 OF 4 | RELEASE NO. CO-73-1478 | REPLACES -

DRAWING NUMBER 16 | ISSUE

REVISIONS
A 205183 GLH 26MAR02
B 206240 TSH 28AUG02
C 206425 GLH 11SEP02

CHECK | CHECK | 26MAR02 | SAV | CHECK | 26MAR02 | GLH

PTC/CAD 3D | DRAWN

THIRD ANGLE PROJECTION

SCALE 5:1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACES	(.00)	±.015
THREE PLACES	(.000)	±.005
ANGLES		±

WEIGHT

MICRO SWITCH a Honeywell Division
FED. MFG. CODE 91929

SOLID STATE SENSOR

CATALOG LISTING
SS40 SERIES CHART 1

MICRO SWITCH
a Honeywell Division
FED. MFG. CODE 91929

SOLID STATE SENSOR

CATALOG LISTING
SS40 SERIES CHART 1

CATALOGING SYSTEM /12

PREFIX	SUFFIX
BASIC CATALOG LISTING: PACKAGE STYLE, MAGNETIC TYPE, ELECTRICAL/MAGNETIC SPECS	LEAD & PACKAGING OPTIONS: BULK, TAPE & REEL, POCKET TAPE & REEL

CHARACTERS IN THESE POSITIONS OF THE LISTING ARE BRANDED ON THE PRODUCT

SS4 _ _ _ - _ _

SS4=PACKAGE STYLE

MAGNETIC TYPE
1=BIPOLAR
4=UNIPOLAR
6=LATCH
9=LINEAR

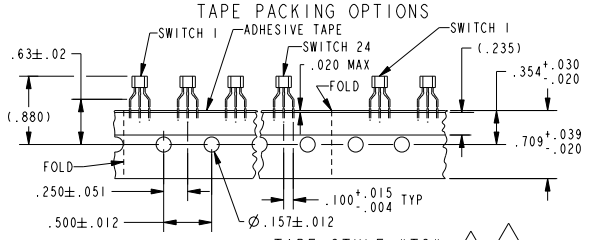
ELECTRICAL/MAGNETIC OPTIONS (A-K, & U-Z) A=STANDARD
B-K & U-Z=SPECIALS

SPECIAL FEATURE (BLANK, 1-9)
BLANK=STANDARD
1-9=SPECIALS

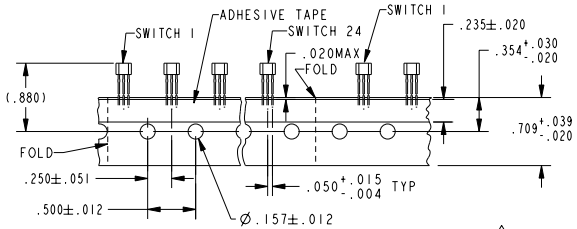
OPTIONS

DESCRIPTION	NOMINAL LEAD SPACING	NOMINAL "E" DIM LENGTH	PARTS PER CONTAINER	
STANDARD, BULK PACK /15	.050	.590	1000/BAG	
TAPE, AMMOPACK	.100	.590	5000/BOX	-T 2
TAPE, AMMOPACK	.050	.590	5000/BOX	-T 3
SURF MOUNT, BULK PACK	.050	.125	1000/BAG	-S
SURF MOUNT, POCKET TAPE	.050	.125	1000/REEL	-S P
REDUCED LENGTH, BULK PACK	.050	.130	1000/BAG	-R
REDUCED LENGTH, POCKET TAPE	.050	.130	1000/REEL	-R P
LONG LEADS, BULK PACK	.050	.735	1000/BAG	-L

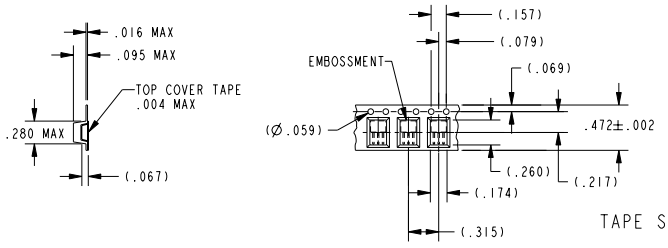
TAPE PACKING OPTIONS



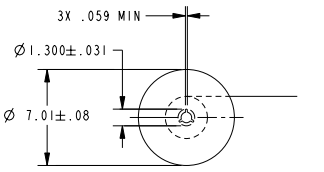
TAPE STYLE "T2" /4 /13



TAPE STYLE "T3" /4 /13



TAPE STYLE "SP" & "RP" /14



DIRECTION OF FEED FROM REEL

ANSI Y14.5M-1982 APPLIES

THIRD ANGLE PROJECTION

SCALE 5 : 1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACE	(.00)	±.015
THREE PLACE	(.000)	±.005
ANGLES		±

WEIGHT

CATALOG LISTING SS40 SERIES CHART 1
PAGE 2 OF 4
RELEASE NO. CO-751478
ISSUE 16

REVISIONS

A	C093816	KED 18JAN99
B	C094110	TSM 18AUG99
C	205183	GLH 20MAR02
D	206240	TSM 28AUG02
E	206425	JLH 15SEP02

PTC/CAD 30
DRAWN KED 18JAN99
CHECK JAF 18JAN99
CHECK
REPLACES
CHECK

MICRO SWITCH
a Honeywell Division
FED. MFG. CODE 91929

SOLID STATE SENSOR

CATALOG LISTING
SS40 SERIES CHART 1

CATALOG LISTING SS40 SERIES CHART 1 | PAGE 3 OF 4 | RELEASE NO. CO-75147B | REPLACES

ISSUE 16 | CHECK

REVISIONS
A CO93816 KED 18JAN99
B CO94110 TSM 18AUG99
C 205183 GLN 26MAR02
D 206240 TSM 28AUG02
E 206425 JLM 11SEP02

18JAN99 JAF CHECK

PTC/CAD 30 | 18JAN99 DRAWN KED

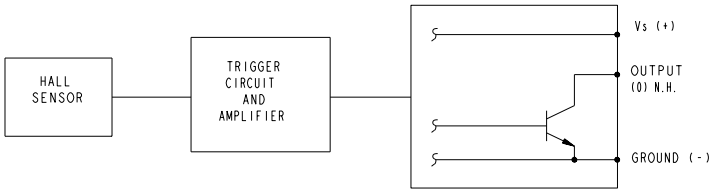
TABLE 1 - MAGNETIC AND ELECTRICAL SPECIFICATIONS 2 18

	-40° C	0° C	25° C	85° C	125° C	150° C
MIN OPERATE GAUSS						
SS41	NS	NS	NS	NS	NS	NS
SS41D	NS	NS	NS	NS	NS	NS
MAX OPERATE GAUSS						
SS41	200	150	150	150	200	250
SS41D	340	340	340	340	NS	NS
MIN RELEASE GAUSS						
SS41	-160	-160	-140	-150	-200	-250
SS41D	-340	-340	-340	-340	NS	NS
MAX RELEASE GAUSS						
SS41	NS	NS	NS	NS	NS	NS
SS41D	NS	NS	NS	NS	NS	NS
MIN DIFF GAUSS						
SS41	40	50	50	50	60	60
SS41D	40	40	40	40	NS	NS

TABLE 2

	SS41	SS41D
MAGNETIC TYPE	BIPOLAR	BIPOLAR
BRAND SYMBOL	S41	S41
PACKING	BAG	BAG
SPECIFIED VOLTAGE RANGE	4.5 - 24	4.5 - 24
MAX Ioff milliamp	10.0	10.0
MAX Ion milliamp	11.3	11.3
RATED SINK CURRENT Ma	20	20
MAX Vsat VOLTS 25° C /16\	0.4	0.4
MAX LEAKAGE AT 24V, µA	10	10
RISE TIME AT 25° C 10% TO 90% µS	1.5	1.5
FALL TIME AT 25° C 90% TO 10% µS	1.5	1.5
STORAGE TEMP ° C	-40 TO +150	-40 TO +150
OPERATING TEMP ° C	-40 TO +150	-40 TO +85

ABSOLUTE LIMITS	SS41	SS41D
SUPPLY VOLTAGE	-28 TO +28	-24 TO +28
APPLIED OUTPUT VOLTAGE /8\	-0.5 TO +28	-0.5 TO +28
OUTPUT CURRENT mA	20	20
MAGNETIC FLUX GAUSS	NO LIMIT	NO LIMIT



THIRD ANGLE PROJECTION
SCALE NONE
DO NOT SCALE PRINT
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE
ONE PLACE (.0) ±.030
TWO PLACE (.00) ±.015
THREE PLACE (.000) ±.005
ANGLES ±
WEIGHT

ANSI Y14.5M-1982 APPLIES