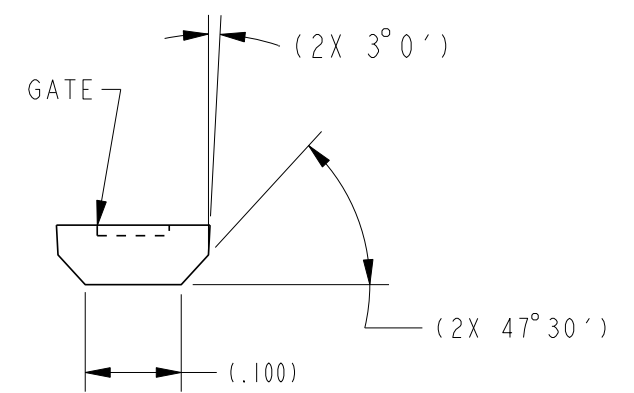
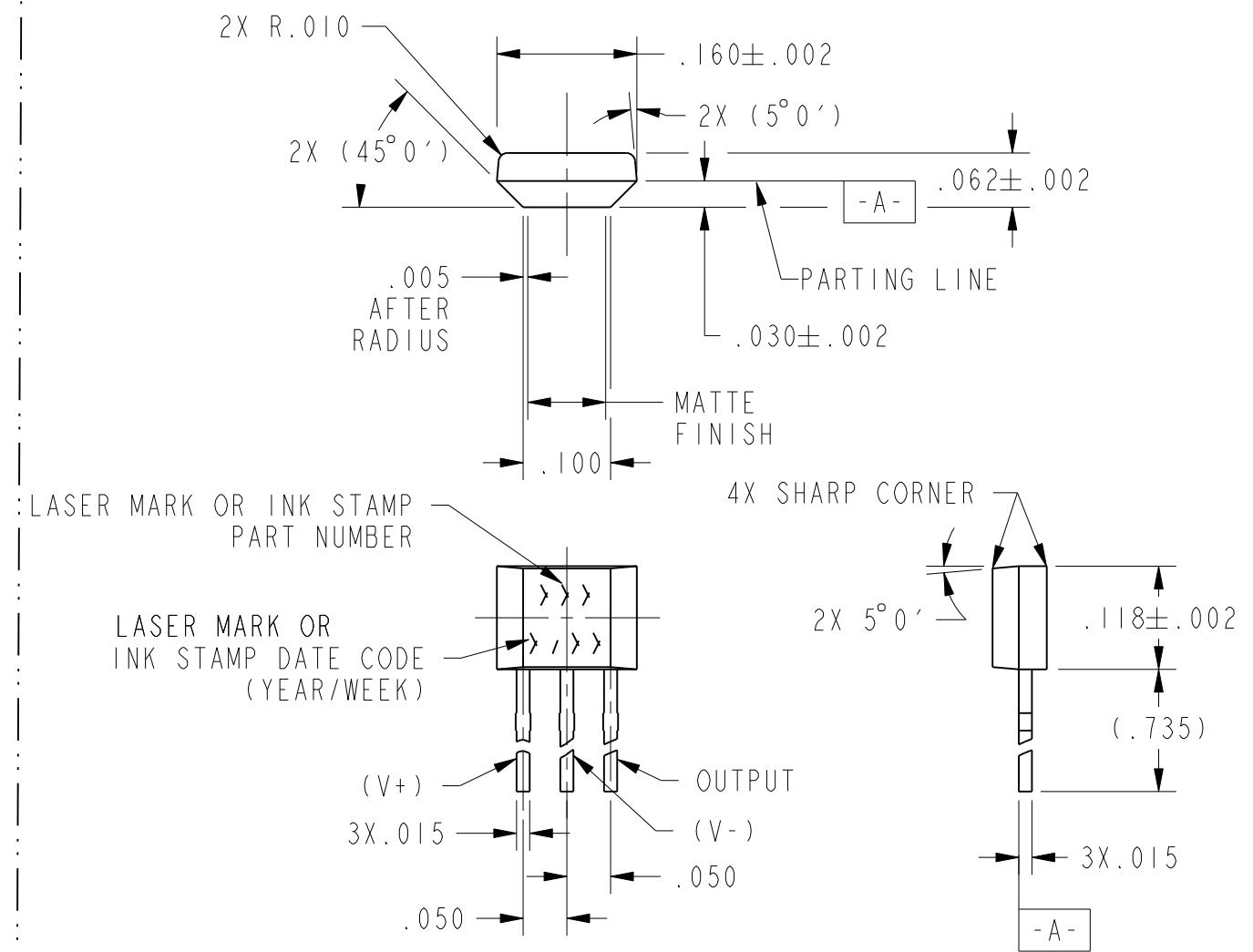


LEAD STYLES



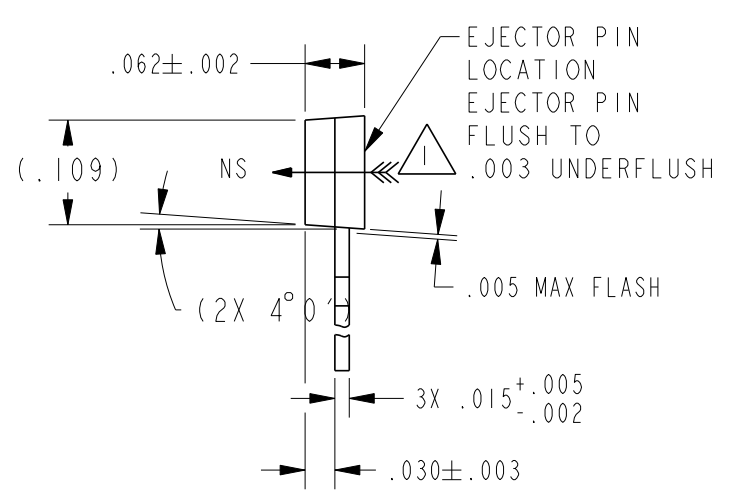
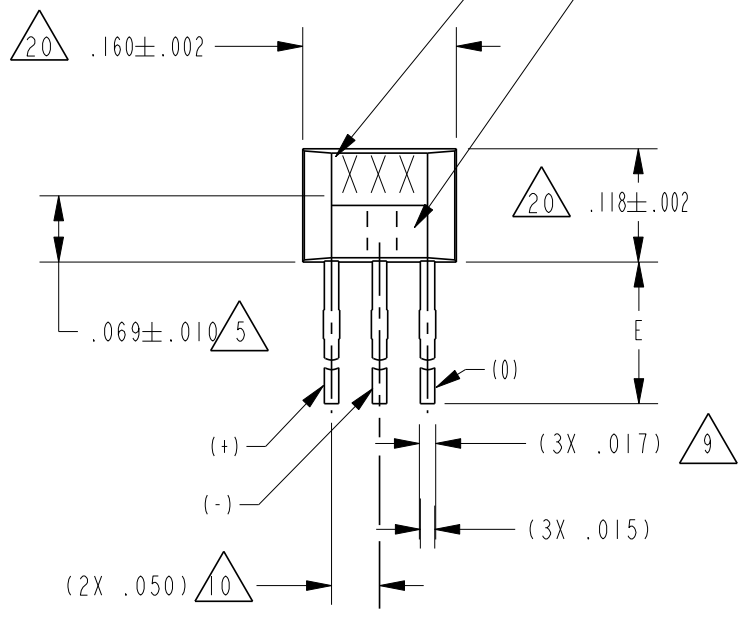
ALL EXCEPT "L" LEAD STYLES



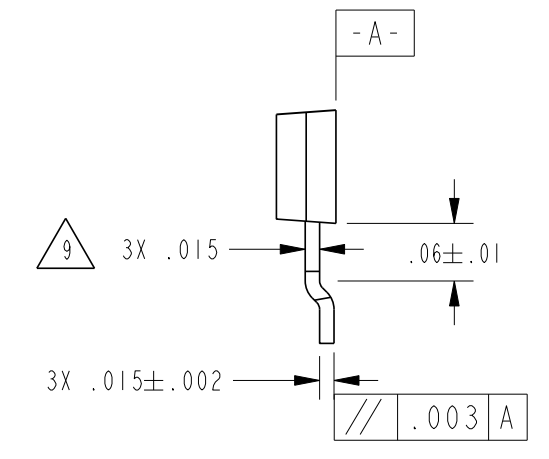
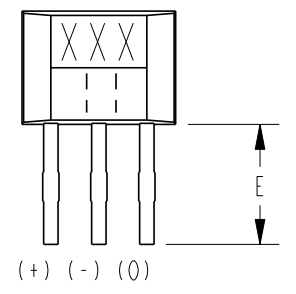
DIMENSIONS APPLY TO "L" LEAD STYLE ONLY

LASER MARK OR INK STAMP BRAND SYMBOL  
.039 HIGH CHARACTERS

LASER MARK OR INK STAMP DATE CODE  
( YEAR, WEEK ) .039 HIGH CHARACTERS ( 3 DIGITS )

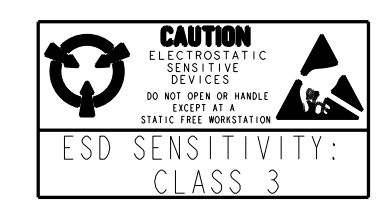


LEAD STYLES "STD", "R", "RP"



LEAD STYLES "S" & "SP"

- 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 TEST CONDITIONS:  $V_{CC}=12V$ ,  $R_2=1.6K$  OHMS,  $C_2=20pf$
  - 5 APPROXIMATE HALL ELEMENT LOCATION
  - 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 PEAK FOR 10 S MAX OR 260°C PEAK FOR 5S MAX  
SOLDERING TIME
  - 8  $V_{CC}=12V$ ,  $R_L=1.6K$ ,  $C_L=20pf$
  - 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" AND "SP"
  - 12 SOME COMBINATIONS OF BASIC LISTING AND PACKING OPTIONS ARE NOT AVAILABLE
  - 13 TAPE AND AMMOPACK PER EIA-468-A-1990
  - 14 POCKET TAPE AND REEL PER EIA-481-A-1986
  - 15  $V_{CC}=30V$ ,  $I_{sink}=20mA$ ,  $-40^{\circ}C < T < 150^{\circ}C$ , B>MAX OP GAUSS FOR SPECIFIC LISTING
  - 16  $V_{CC}=3.8V$ ,  $I_{sink}=20mA$ , B>MAX OP GAUSS FOR SPECIFIC LISTING
  - 17  $V_{out}=30V$ ,  $V_{CC}=24V$ , B<MIN RELEASE GAUSS FOR SPECIFIC LISTING
  - 18 AMMOPACK STYLE "T2" AND "T3". 24 SWITCHES BETWEEN FOLDS, SKIP 1 SPACE AT FOLD. MAY BE REFERRED TO AS "FAN FOLD"
  - 19 LEAD STRAIGHTNESS MAY BE DETERIORATED ON SOME UNITS BY BULK PACKAGING. APPLICATIONS HAVING A CRITICAL LEAD STRAIGHTNESS REQUIREMENT SHOULD USE A TAPE PACKAGING OPTION
  - 20 MOLDED PART DIMENSIONS DO NOT INCLUDE FLASH. FLASH IS LIMITED TO .005 MAX
  - 21 THESE HALL EFFECT SENSORS MAY HAVE AN INITIAL OUPUT IN EITHER THE ON OR OFF STATE IF POWERED UP WITH AN APPLIED MAGNETIC FIELD IN THE DIFFERENTIAL ZONE (APPLIED MAGNETIC FIELD >  $B_{op}$  AND <  $B_{op}$ ). MICRO SWITCH RECOMMENDS THAT THE APPLICATION CIRCUIT DESIGNER ALLOW 10 MICROSECONDS AFTER SUPPLY VOLTAGE HAS REACHED 5 VOLTS FOR THE OUTPUT VOLTAGE TO STABILIZE



| THIRD ANGLE PROJECTION                                                                    |            |                |       |
|-------------------------------------------------------------------------------------------|------------|----------------|-------|
| SCALE 5 : 1                                                                               |            |                |       |
| DO NOT SCALE PRINT                                                                        |            |                |       |
| TOLERANCES                                                                                |            |                |       |
| APPLY TO DESIGN UNITS. CONVERSIONS ARE ONLY FOR REFERENCE. UNLESS NOTED, TOLERANCES ARE : |            |                |       |
|                                                                                           | DIM.<br>mm | TOL<br>mm / in |       |
| NO PLACES                                                                                 | X          | 1 / .04        | X.X   |
| ONE PLACE                                                                                 | X.X        | 0.47 / .016    | X.XX  |
| TWO PLACES                                                                                | X.XX       | 0.157 / .006   | X.XXX |
| THREE PLACES                                                                              | X.XXX      |                |       |
| ANGLES                                                                                    |            |                |       |
| SI METRIC                                                                                 |            | US CUSTOMARY   |       |
| DESIGN UNITS                                                                              |            | WEIGHT         |       |

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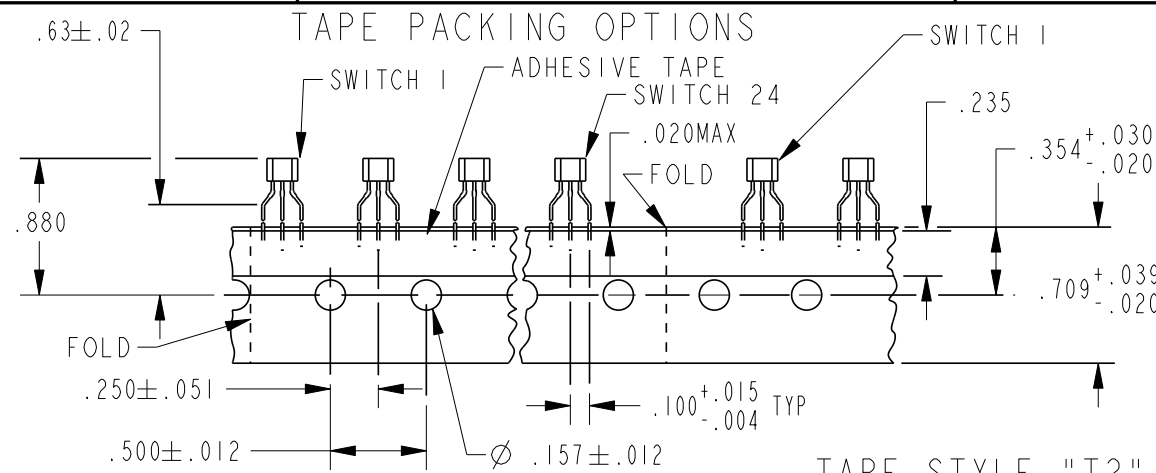
**MICRO SWITCH**  
a Honeywell Division

FED. MFG. CODE 91929

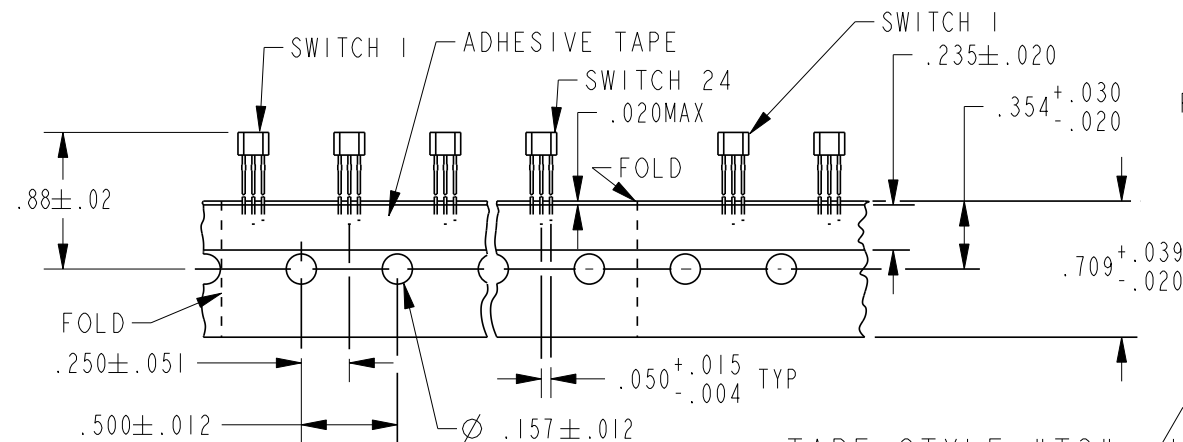
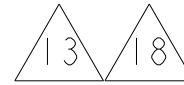
CATALOG LISTING

**SOLID STATE SENSOR**

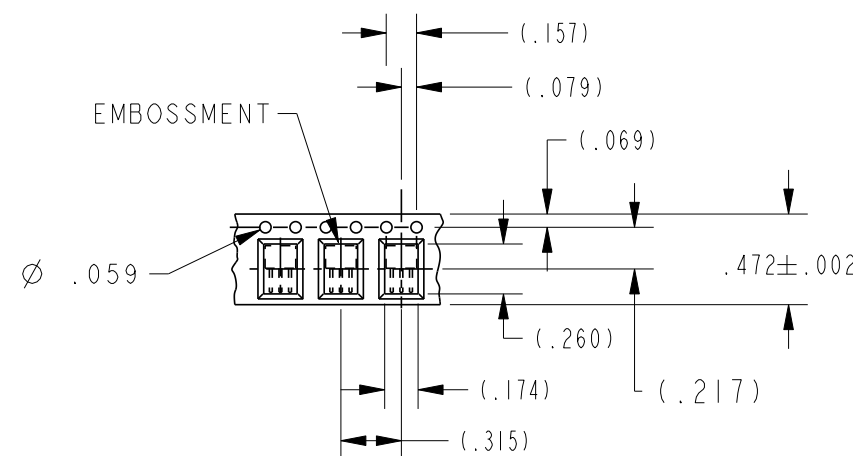
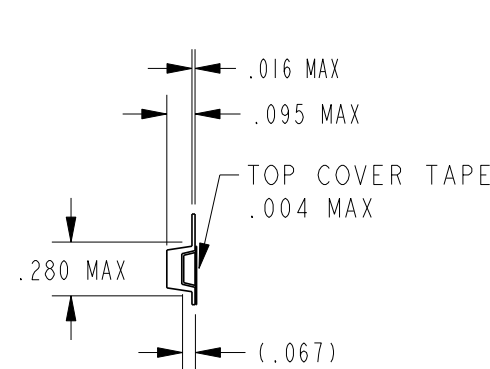
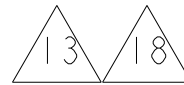
**SS400 SERIES CHART 1**



TAPE STYLE "T2"



TAPE STYLE "T3"



TAPE STYLE "SP" & "RP"



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

SS 4 4 1 A 1 - - -  
SS4=PACKAGE STYLE  
MAGNETIC TYPE  
1=BIPOLAR  
4=UNIPOLAR  
6=LATCH  
9=LINEAR  
RELATIVE GAUSS OPERATING RANGE  
(0-9, 9=HIGH GAUSS)#  
ELECTRICAL/MAGNETIC OPTIONS  
(A-K, & U-Z)  
A=STANDARD  
B-K & U-Z=SPECIALS  
SPECIAL FEATURE (BLANK, 1-9)  
BLANK=STANDARD  
1-9=SPECIALS

| DESCRIPTION                      | NOMINAL<br>LEAD<br>SPACING | NOMINAL<br>"E" DIM<br>LENGTH<br>±.015 | PARTS PER<br>CONTAINER |
|----------------------------------|----------------------------|---------------------------------------|------------------------|
| STANDARD, BULK PACK 19           | .050                       | .590                                  | 1000/BAG               |
| -T 2 TAPE, AMMOPACK              | .100                       | .590                                  | 5000/BOX               |
| -T 3 TAPE, AMMOPACK              | .050                       | .590                                  | 5000/BOX               |
| -S SURFACE MOUNT, BULK PACK      | .050                       | .125                                  | 1000/BAG               |
| -S P SURFACE MOUNT, POCKET TAPE  | .050                       | .125                                  | 1000/REEL              |
| -R REDUCED LENGTH, BULK PACK     | .050                       | .130                                  | 1000/BAG               |
| -R P REDUCED LENGTH, POCKET TAPE | .050                       | .130                                  | 1000/REEL              |
| -L LONG LEADS, BULK PACK         | .050                       | .735                                  | 1000/BAG               |

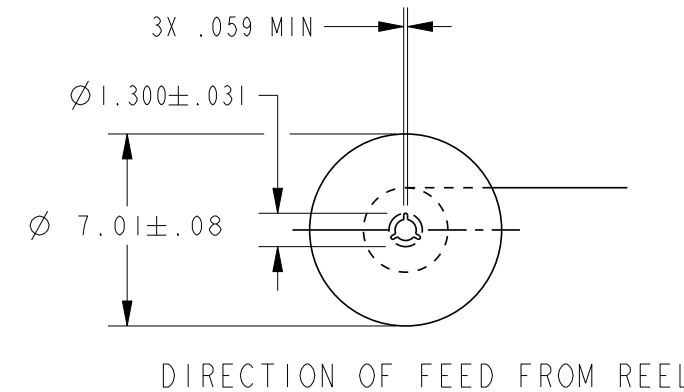
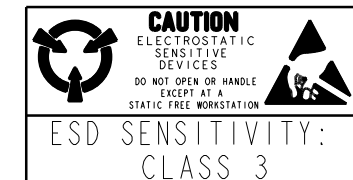


TABLE I - MAGNETIC AND ELECTRICAL SPECIFICATIONS ~~2~~21

|                   | - 40 ° C | 0 ° C | 25 ° C | 85 ° C | 125 ° C | 150 ° C |
|-------------------|----------|-------|--------|--------|---------|---------|
| MIN OPERATE GAUSS |          |       |        |        |         |         |
| SS411A            | NS       | NS    | NS     | NS     | NS      | NS      |
| SS413A            | NS       | NS    | NS     | NS     | NS      | NS      |
| SS441A            | 50       | 53    | 55     | 45     | 40      | 35      |
| SS443A            | 110      | 110   | 110    | 90     | 80      | 65      |
| SS449A            | 285      | 305   | 310    | 290    | 270     | 260     |
| SS461A            | 5        | 5     | 10     | 10     | 5       | 5       |
| SS466A            | 100      | 100   | 100    | 95     | 80      | 70      |
|                   |          |       |        |        |         |         |
| MAX OPERATE GAUSS |          |       |        |        |         |         |
| SS411A            | 70       | 65    | 60     | 60     | 65      | 70      |
| SS413A            | 140      | 140   | 140    | 140    | 140     | 140     |
| SS441A            | 135      | 117   | 115    | 120    | 123     | 125     |
| SS443A            | 215      | 190   | 180    | 180    | 190     | 200     |
| SS449A            | 435      | 400   | 390    | 400    | 410     | 420     |
| SS461A            | 110      | 90    | 85     | 85     | 100     | 110     |
| SS466A            | 200      | 185   | 180    | 180    | 180     | 185     |
|                   |          |       |        |        |         |         |
| MIN RELEASE GAUSS |          |       |        |        |         |         |
| SS411A            | - 70     | - 65  | - 60   | - 60   | - 65    | - 70    |
| SS413A            | - 140    | - 140 | - 140  | - 140  | - 140   | - 140   |
| SS441A            | 20       | 20    | 20     | 15     | 15      | 10      |
| SS443A            | 80       | 80    | 75     | 70     | 60      | 55      |
| SS449A            | 210      | 230   | 235    | 215    | 200     | 185     |
| SS461A            | - 110    | - 90  | - 85   | - 85   | - 100   | - 110   |
| SS466A            | - 200    | - 185 | - 180  | - 180  | - 100   | - 185   |
|                   |          |       |        |        |         |         |
| MAX RELEASE GAUSS |          |       |        |        |         |         |
| SS411A            | NS       | NS    | NS     | NS     | NS      | NS      |
| SS413A            | NS       | NS    | NS     | NS     | NS      | NS      |
| SS441A            | 120      | 99    | 95     | 105    | 115     | 120     |
| SS443A            | 190      | 165   | 155    | 165    | 180     | 195     |
| SS449A            | 360      | 325   | 315    | 325    | 340     | 345     |
| SS461A            | - 5      | - 5   | - 10   | - 10   | - 5     | - 5     |
| SS466A            | - 100    | - 100 | - 100  | - 95   | - 80    | - 70    |
|                   |          |       |        |        |         |         |
| MIN DIFF GAUSS    |          |       |        |        |         |         |
| SS411A            | 15       | 15    | 15     | 12     | 12      | 10      |
| SS413A            | 20       | 20    | 20     | 20     | 20      | 20      |
| SS441A            | 15       | 15    | 20     | 15     | 8       | 5       |
| SS443A            | 25       | 25    | 25     | 15     | 10      | 5       |
| SS449A            | 30       | 30    | 30     | 30     | 30      | 30      |
| SS461A            | 50       | 50    | 50     | 50     | 50      | 50      |
| SS466A            | 200      | 200   | 200    | 190    | 160     | 140     |
|                   |          |       |        |        |         |         |

TABLE 2

|                                                       |             |
|-------------------------------------------------------|-------------|
| PACKING                                               | BAG         |
| SPECIFIED VOLTAGE RANGE                               | 3.8 - 30    |
| MAX Ioff milliamp 15                                  | 9.0         |
| MAX Ion milliamp $\triangle 15$                       | 10.0        |
| RATED SINK CURRENT Ma                                 | 20          |
| MAX Vsat VOLTS $\triangle 16$                         | 0.4         |
| MAX LEAKAGE AT 24V, UA $\triangle 17$                 | 10          |
| RISE TIME AT 25°C<br>10% TO 90% $\mu$ S $\triangle 4$ | 1.5         |
| FALL TIME AT 25°C<br>90% TO 10% $\mu$ S $\triangle 4$ | 1.5         |
| STORAGE TEMP °C                                       | -65 TO +160 |
| OPERATING TEMP °C                                     | -55 TO +160 |

ABSOLUTE LIMITS  TABLE 3

|                        |             |
|------------------------|-------------|
| SUPPLY VOLTAGE         | -1 TO +30   |
| APPLIED OUTPUT VOLTAGE | -0.5 TO +30 |
| OUTPUT CURRENT mA      | SEE TABLE 5 |
| MAGNETIC FLUX GAUSS    | NO LIMIT    |



TABLE 4

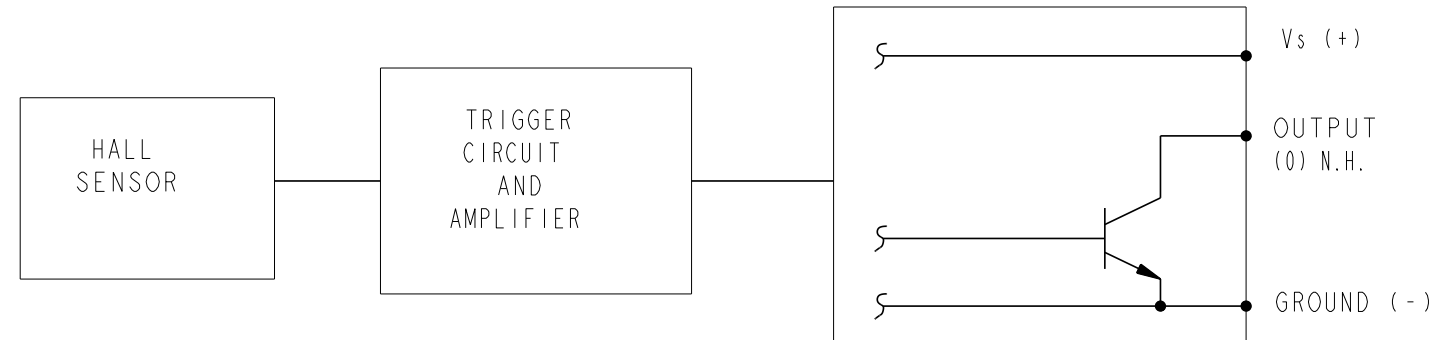
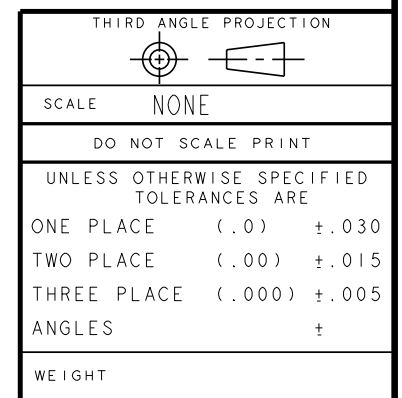


TABLE 5

| OUTPUT CURRENT<br>ABSOLUTE LIMITS |                              |
|-----------------------------------|------------------------------|
| SUPPLY<br>VOLTAGE                 | OUTPUT<br>CURRENT<br>MAX, MA |
| -1 TO 24                          | 50                           |
| 24 TO 25                          | 37                           |
| 25 TO 26                          | 33                           |
| 26 TO 27                          | 28                           |
| 27 TO 28                          | 24                           |
| 28 TO 29                          | 19                           |
| 29 TO 30                          | 15                           |



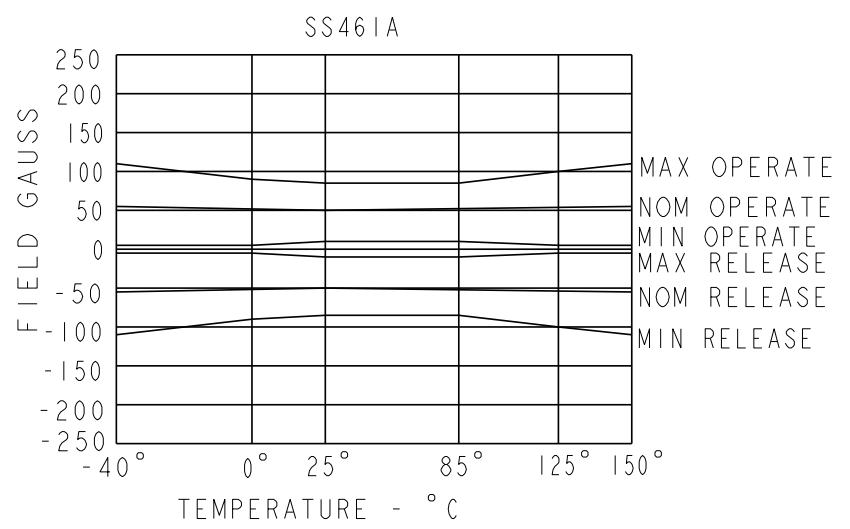
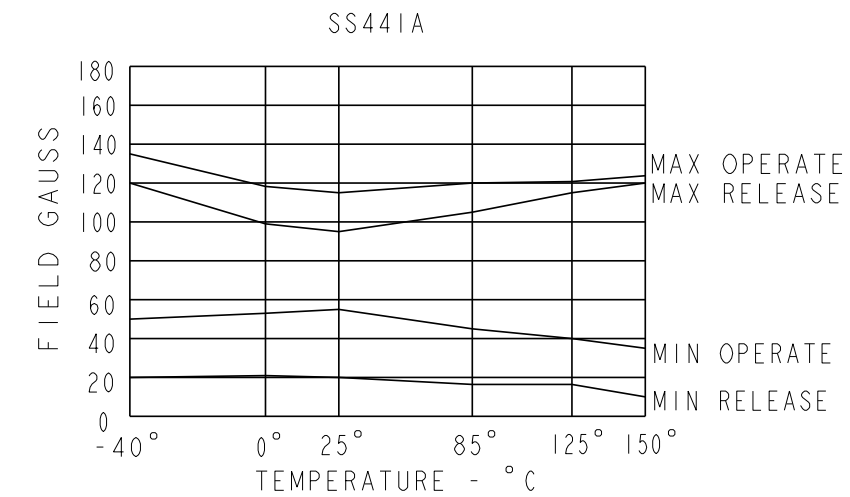
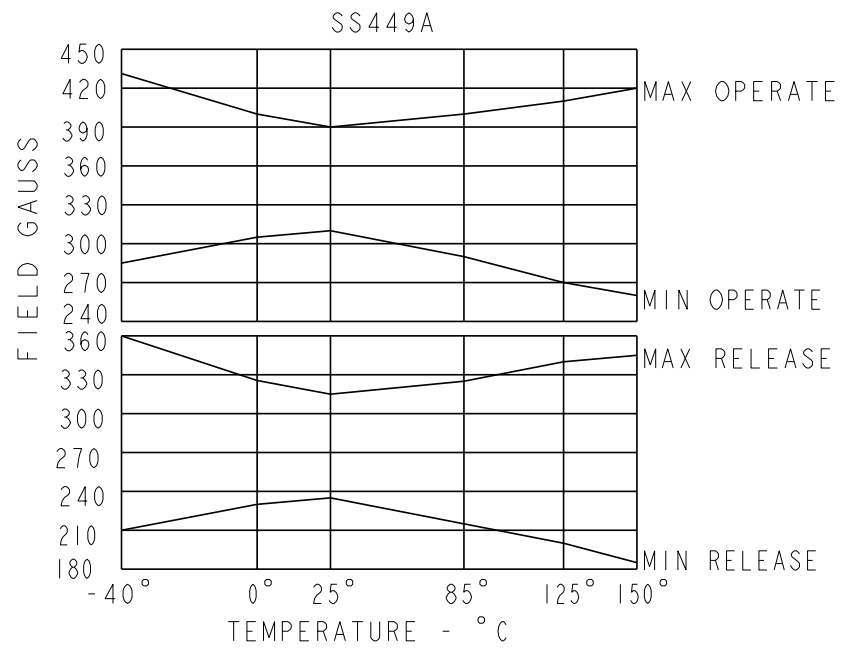
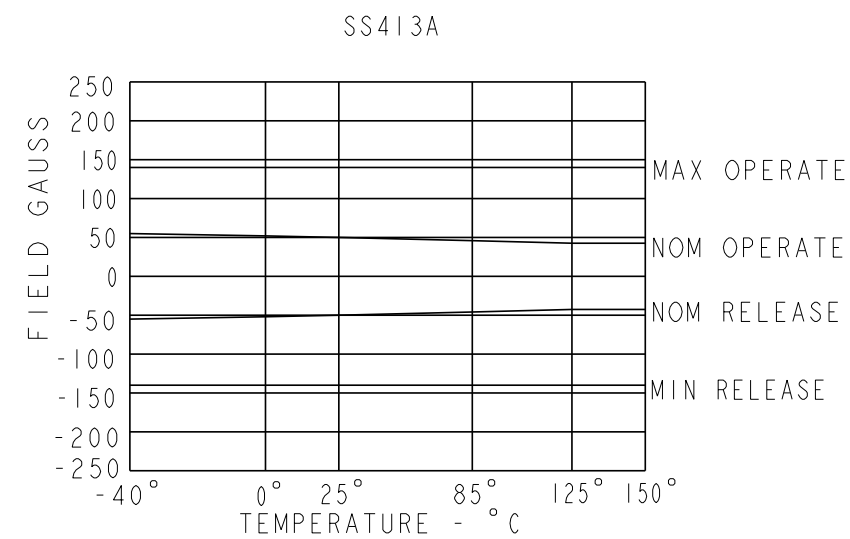
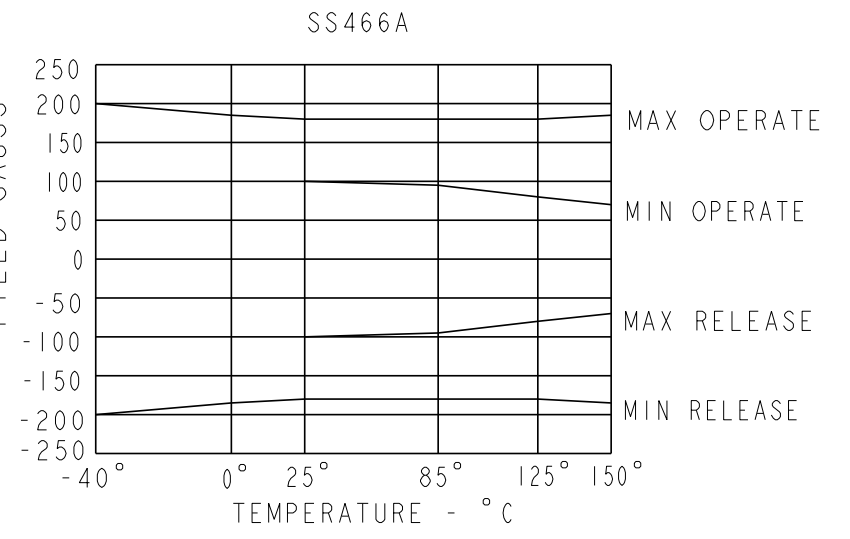
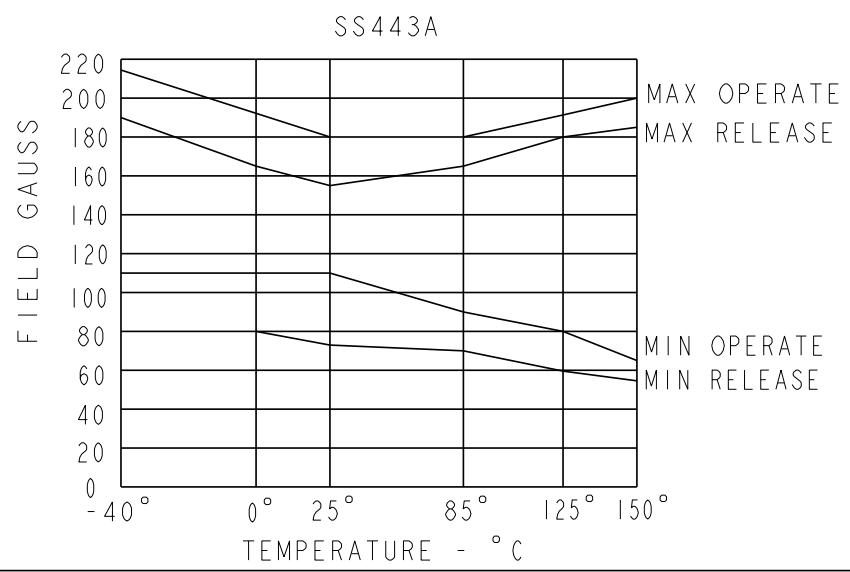
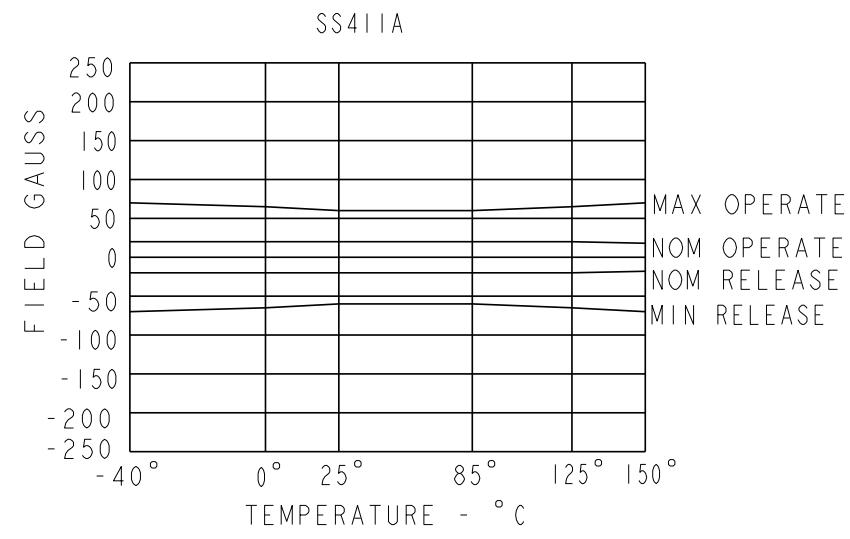
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**SOLID STATE SENSOR**

**SS400 SERIES CHART 1**

CATALOG LISTING

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**CAUTION**  
ELECTROSTATIC SENSITIVE DEVICES  
DO NOT OPEN OR HANDLE EXCEPT AT A STATIC FREE WORKSTATION

ESD SENSITIVITY:  
CLASS 3

|                                           |              |
|-------------------------------------------|--------------|
| 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                                    |              |

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- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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