



# SA12B5 SA16B3 / SA16B6 SCHOTTKY ARRAYS

Application Specific Discretes  
A.S.D.<sup>™</sup>

## MAIN APPLICATIONS

Any electronic equipment where suitable bus termination is required to avoid signal reflections and distortions :

- PCs
- Workstations
- High frequency processor boards
- Dataline interface

## DESCRIPTION

Dedicated to bus termination, the Schottky arrays SA12B5, SA16B3 and SA16B6 minimise stray emissions from PCB tracks. They provide suitable termination by avoiding signal reflexions and distortions.

## FEATURES

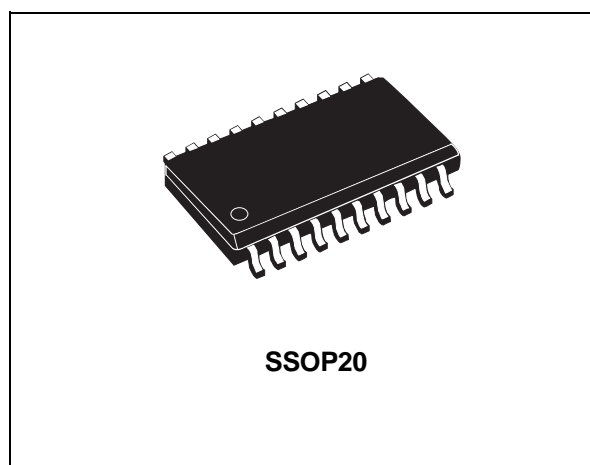
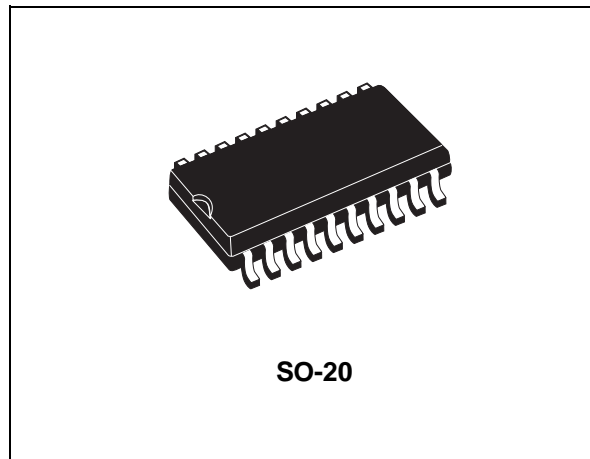
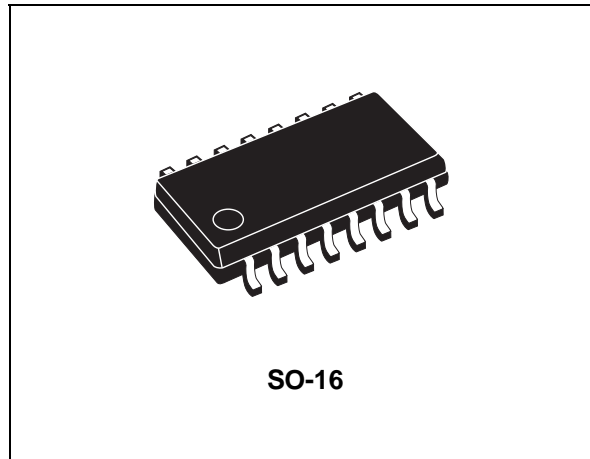
- 12-BIT (SA12) OR 16-BIT (SA16) DUAL SCHOTTKY DIODE ARRAYS
- REVERSE VOLTAGE :  $V_{RRM} = 7.5 \text{ V}$
- FORWARD VOLTAGE  $V_F < 1.3 \text{ V}$

## BENEFITS

- Provides impedance matching, and minimizes distortion.
- Lowers EMI / RFI radiation.
- Eliminates negative voltage : minimizes risk of latch-up for sensitive ICs.
- Saves valuable space on board.

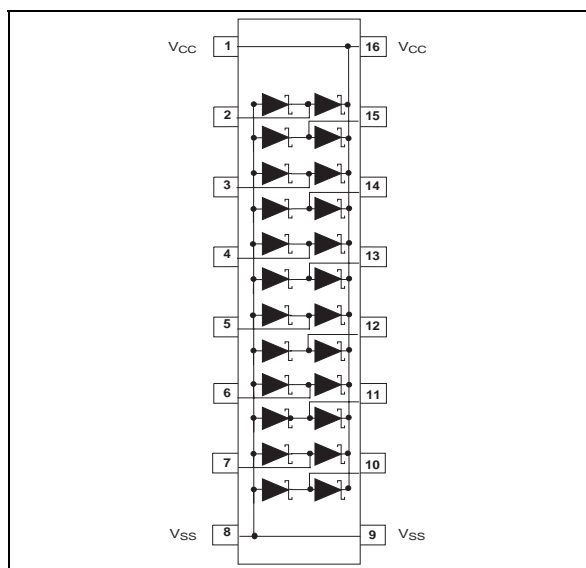
## COMPLIES WITH FOLLOWING STANDARD :

- MIL STD 883C - Method 3015-6 - class 3
- IEC1000-4-2 level 4

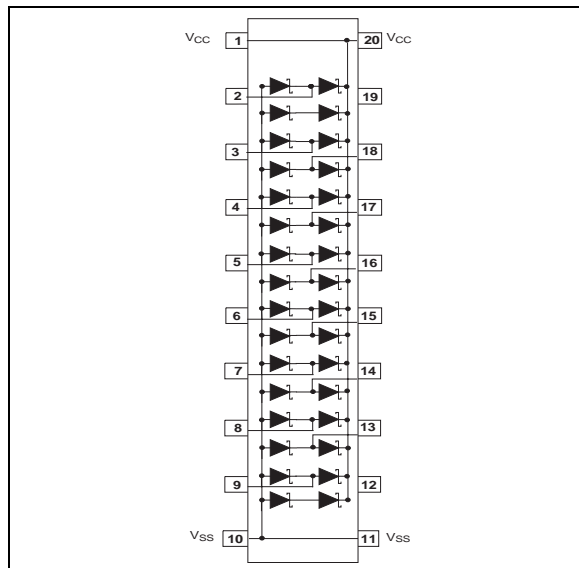


## SA12B5 / SA16B3 / SA16B6

### FUNCTIONAL DIAGRAM (SO-16)



### FUNCTIONAL DIAGRAM (SO-20 and SSOP20)



### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ )

| Symbol                 | Parameter and test conditions   |                           | Value       | Unit               |
|------------------------|---|---------------------------|-------------|--------------------|
| <b>P</b>               | Power dissipation   | SO-20<br>SO-16 and SSOP20 | 1250<br>850 | mW                 |
| <b>V<sub>OP</sub></b>  | Maximum operating voltage ( $V_{CC} - V_{SS}$ )                                       |                           | 7.5         | V                  |
| <b>V<sub>PP</sub></b>  | Maximum electrostatic discharge<br>MIL STD 883C - Method 3015-6 / IEC1000-4-2 contact |                           | 8           | kV                 |
| <b>T<sub>OP</sub></b>  | Operating temperature range (see note 1)  |                           | -40 to +85  | $^{\circ}\text{C}$ |
| <b>T<sub>stg</sub></b> | Storage temperature range   |                           | -55 to +150 | $^{\circ}\text{C}$ |
| <b>T<sub>L</sub></b>   | Maximum lead temperature for soldering during 10s                                     |                           | 260         | $^{\circ}\text{C}$ |
| <b>T<sub>j</sub></b>   | Maximum junction temperature  |                           | 150         | $^{\circ}\text{C}$ |

**Note 1:** within the  $T_{OP}$  range, the SAxx keep on operating. The impacts of the ambient temperature are given by derating curves on the following page.

### ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ )

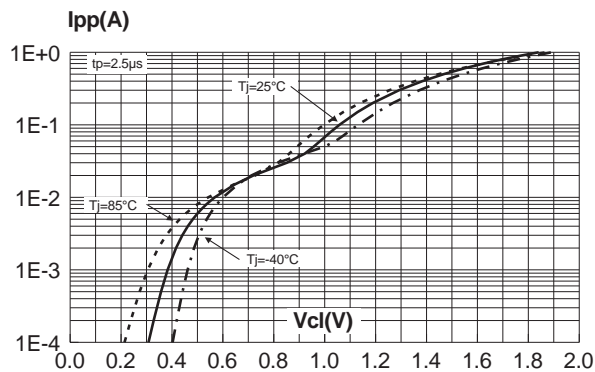
| Symbol               | Parameter and test conditions              |  | Typ. | Max.        | Unit          |
|----------------------|--|--|------|-------------|---------------|
| <b>I<sub>R</sub></b> | Leakage current @ $V_{RRM} = 7.5\text{ V}$ |  |      | 5           | $\mu\text{A}$ |
| <b>V<sub>F</sub></b> | Forward voltage<br>(see note 2)            | $I_{PP} = 18\text{ mA}$<br>$I_{PP} = 50\text{ mA}$ |      | 1.05<br>1.3 | V             |
| <b>C<sub>d</sub></b> | Capacitance                                | $V_{bias} = 0\text{ V}$ , $F = 1\text{ MHz}$       |      | 16          | pF            |

**Note 2:** for both pull-up and pull-down schottky diodes.

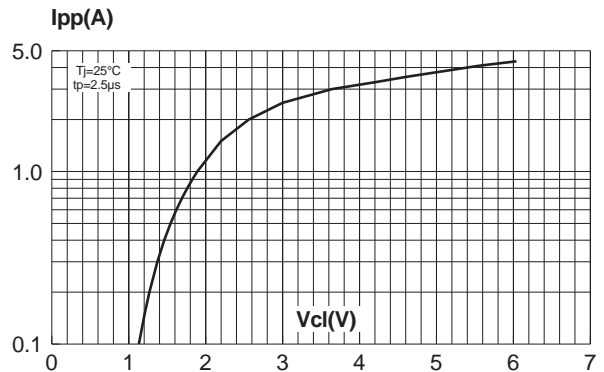
### THERMAL RESISTANCE

| Symbol                     | Parameter           | Packages                  | Value      | Unit                 |
|----------------------------|---------------------|---------------------------|------------|----------------------|
| <b>R<sub>th(j-a)</sub></b> | Junction to ambient | SO-16 and SSOP20<br>SO-20 | 140<br>100 | $^{\circ}\text{C/W}$ |

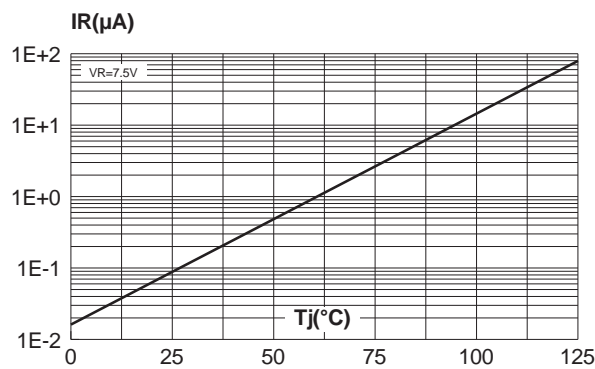
**Fig1-1:** Clamping forward voltage versus peak pulse current (typical values, low level).



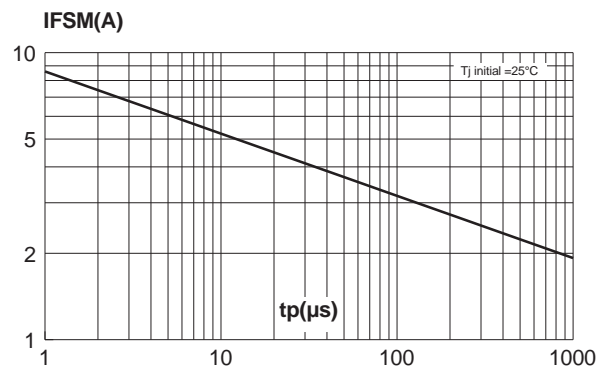
**Fig1-2:** Clamping forward voltage versus peak pulse current (typical values, high level).



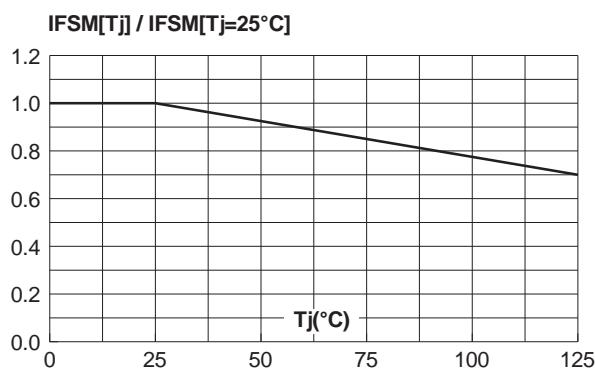
**Fig 2:** Leakage current versus junction temperature (typical values).



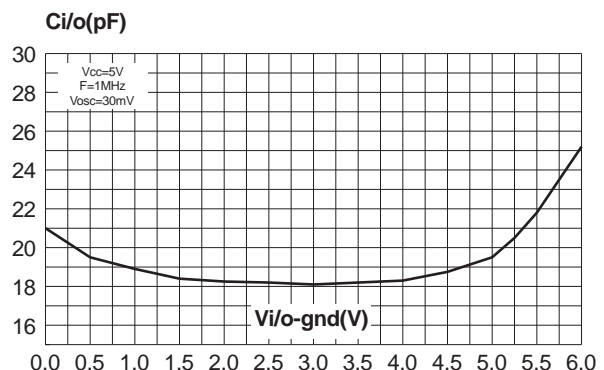
**Fig 3:** Non repetitive surge peak forward current versus pulse duration (rectangular waveform).



**Fig 4:** Non repetitive surge peak forward current versus initial junction temperature.

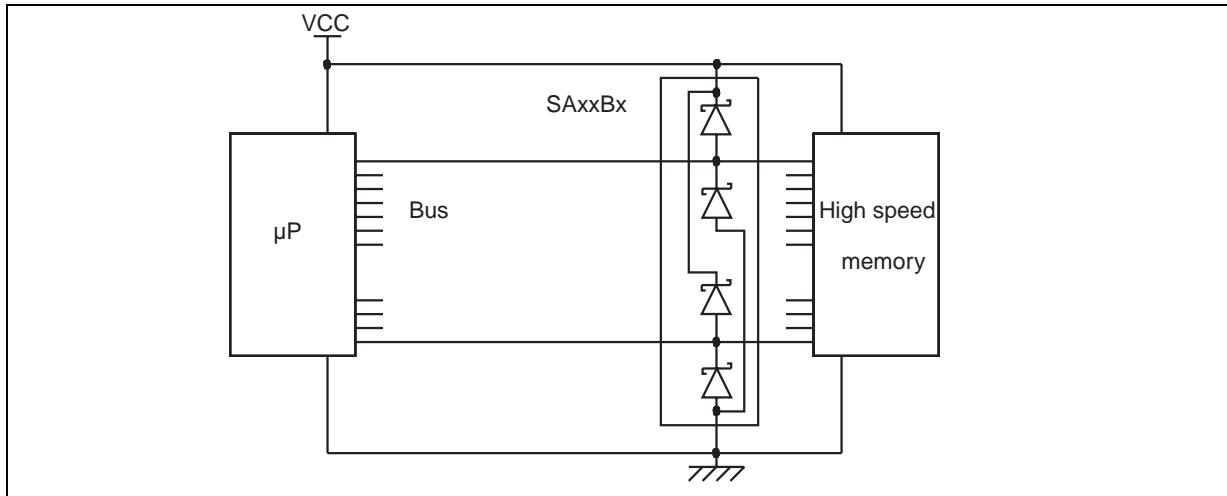


**Fig 5:** Capacitance between input or output and ground versus applied voltage (typical values).



# SA12B5 / SA16B3 / SA16B6

## TYPICAL APPLICATION



## MARKING

| Type   | Package | Marking |
|--------|---------|---------|
| SA12B5 | SO16    | SA12B5  |
| SA16B3 | SO20    | SA16B3  |
| SA16B6 | SSOP20  | SA16B6  |

## PACKAGE MECHANICAL DATA

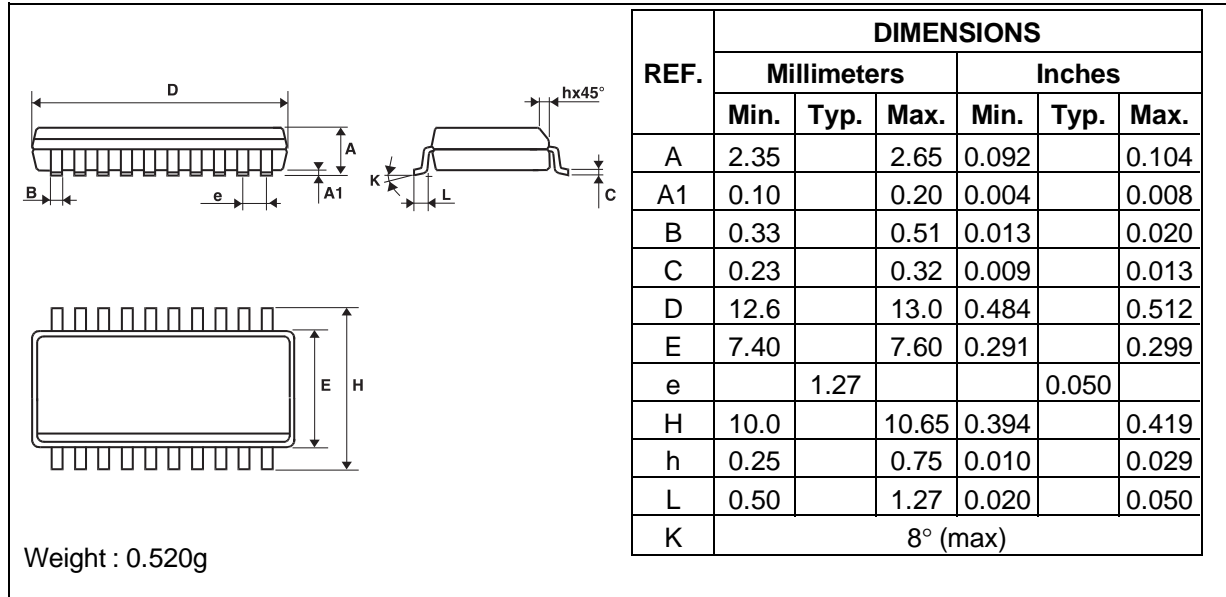
### SO-16

(1) Do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15mm (0.006inches)

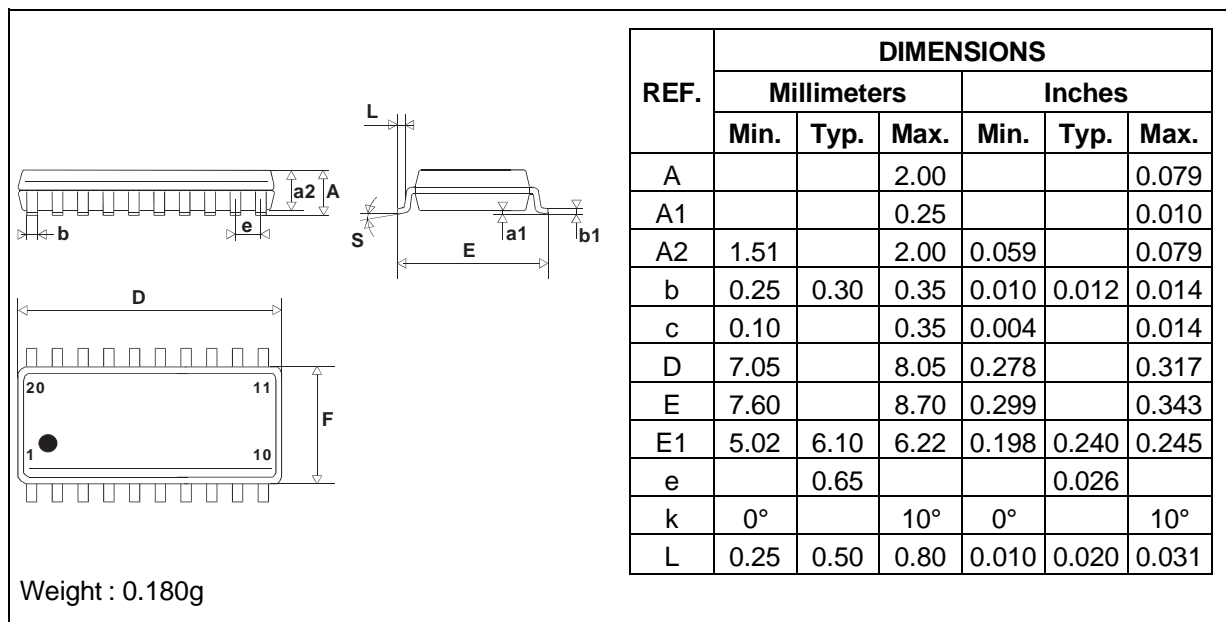
Weight : 0.160g

| REF. | DIMENSIONS  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    |             |      | 1.75 |        |       | 0.069 |
| a1   | 0.1         |      | 0.20 | 0.004  |       | 0.008 |
| a2   |             |      | 1.6  |        |       | 0.063 |
| b    | 0.35        |      | 0.46 | 0.014  |       | 0.018 |
| b1   | 0.19        |      | 0.25 | 0.007  |       | 0.010 |
| C    |             | 0.5  |      |        | 0.020 |       |
| c1   | 45°(typ.)   |      |      |        |       |       |
| D    | 9.8         |      | 10   | 0.386  |       | 0.394 |
| E    | 5.8         |      | 6.2  | 0.228  |       | 0.244 |
| e    |             | 1.27 |      |        | 0.050 |       |
| e3   |             | 8.89 |      |        | 0.350 |       |
| F    | 3.8         |      | 4.0  | 0.150  |       | 0.158 |
| G    | 4.6         |      | 5.3  | 0.181  |       | 0.209 |
| L    | 0.5         |      | 1.27 | 0.020  |       | 0.050 |
| M    |             |      | 0.75 |        |       | 0.030 |
| S    | 8°(typ.)    |      |      |        |       |       |

**PACKAGE MECHANICAL DATA**  
SO-20



SSOP20



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