



Application Specific Discretes A.S.D.TM

SA12B5 SA16B3 / SA16B6 SCHOTTKY ARRAYS

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

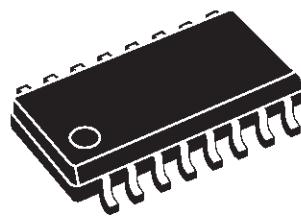
- 12-BIT (SA12) OR 16-BIT (SA16) DUAL SCHOTTKY DIODE ARRAYS
- REVERSE VOLTAGE: $V_{RRM} = 7.5 \text{ V}$
- FORWARD VOLTAGE $V_F < 1.3 \text{ V}$

BENEFITS

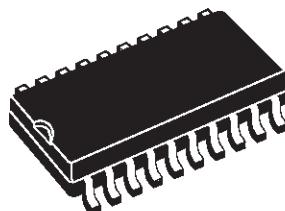
- Provides impedance matching, and minimizes distortion.
- Lowers EMI / RFI radiation.
- Eliminates negative voltage : minimizes risk of latch-up for sensitive ICs.
- Saves valuable space on board.

COMPLIES WITH FOLLOWING STANDARD :

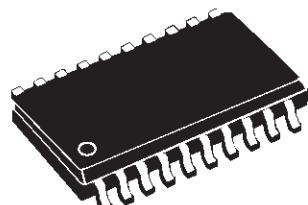
- MIL STD 883C - Method 3015-6 - class 3
- IEC1000-4-2 level 4



SO-16



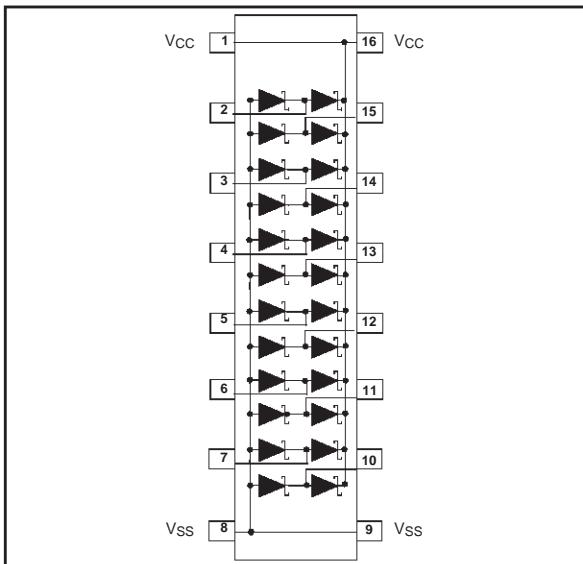
SO-20



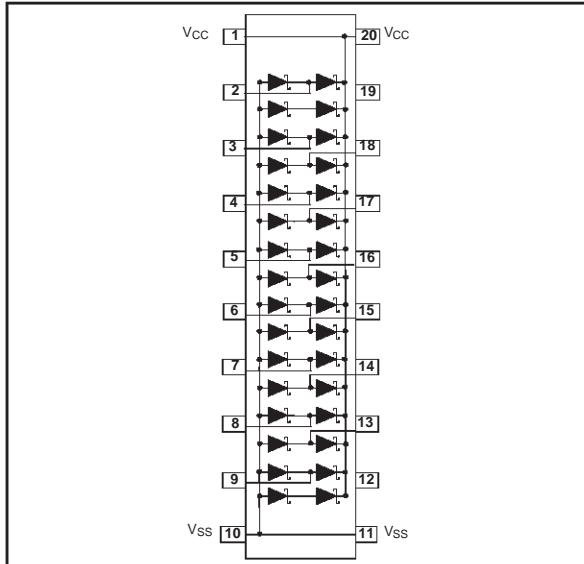
SSOP20

SA12B5 / SA16B3 / SA16B6

FUNCTIONAL DIAGRAM (SO-16)



FUNCTIONAL DIAGRAM (SO-20 and SSOP20)



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

| Symbol | Parameter and test conditions | Value | Unit |
|-----------|---|-------------|------|
| P | Power dissipation SO-20 SO-16 and SSOP20 | 1250 850 | mW |
| V_{OP} | Maximum operating voltage (Vcc - Vss) | 7.5 | V |
| V_{PP} | Maximum electrostatic discharge MIL STD 883C - Method 3015-6 / IEC1000-4-2 contact | 8 | kV |
| T_{op} | Operating temperature range (see note 1) | -40 to +85 | °C |
| T_{stg} | Storage temperature range | -55 to +150 | °C |
| T_L | Maximum lead temperature for soldering during 10s | 260 | °C |
| T_j | Maximum junction temperature | 150 | °C |

Note1: within the Top range, the SAxx keep on operating. The impacts of the ambient temperature are given by derating curves on the following page.

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

| Symbol | Parameter and test conditions | Typ. | Max. | Unit |
|--------|-------------------------------------|--------------------------------------|-------------|---------|
| I_R | Leakage current @ $V_{RRM} = 7.5$ V | | 5 | μA |
| V_F | Forward voltage (see note 2) | $I_{PP} = 18$ mA $I_{PP} = 50$ mA | 1.05 1.3 | V |
| C_d | Capacitance | $V_{bias} = 0V, F = 1MHz$ | 16 | pF |

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

THERMAL RESISTANCE

| Symbol | Parameter | Packages | Value | Unit |
|---------------|---------------------|---------------------------|------------|------|
| $R_{th(j-a)}$ | Junction to ambient | SO-16 and SSOP20 SO-20 | 140 100 | °C/W |

SA12B5 / SA16B3 / SA16B6

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

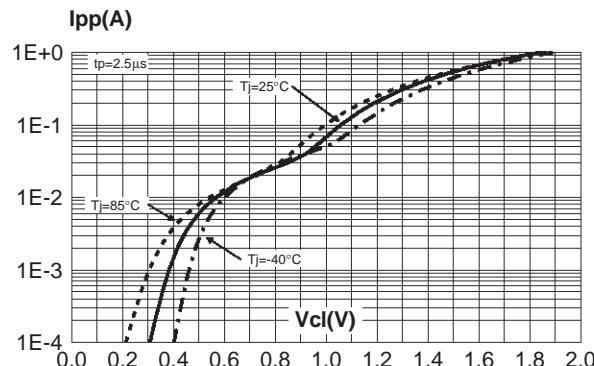


Fig 2: Leakage current versus junction temperature (typical values).

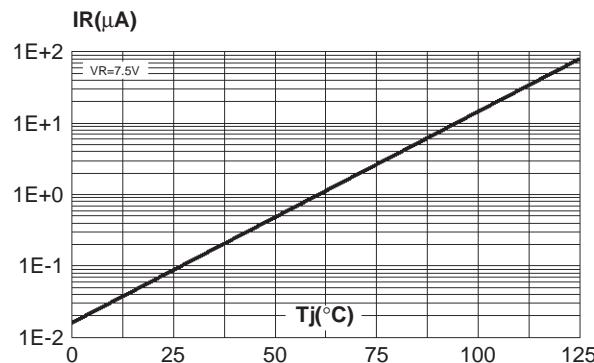


Fig 4: Non repetitive surge peak forward current versus initial junction temperature.

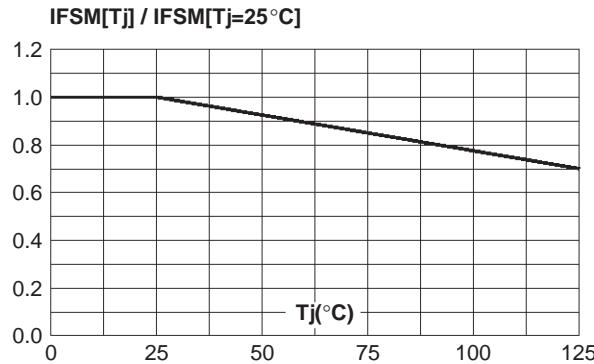


Fig1-2: Clamping forward voltage versus peak pulse current (typical values, high level).

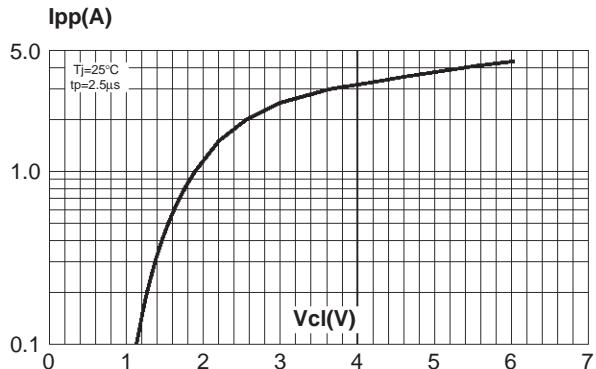


Fig 3: Non repetitive surge peak forward current versus pulse duration (rectangular waveform).

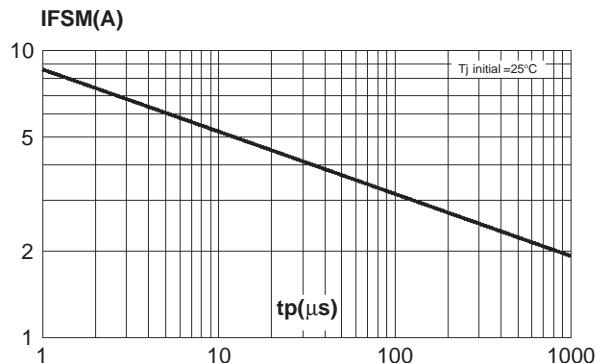
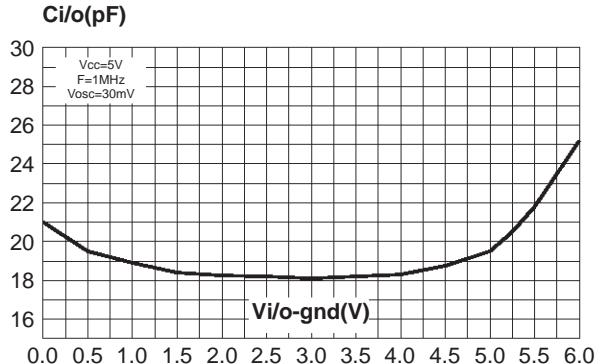
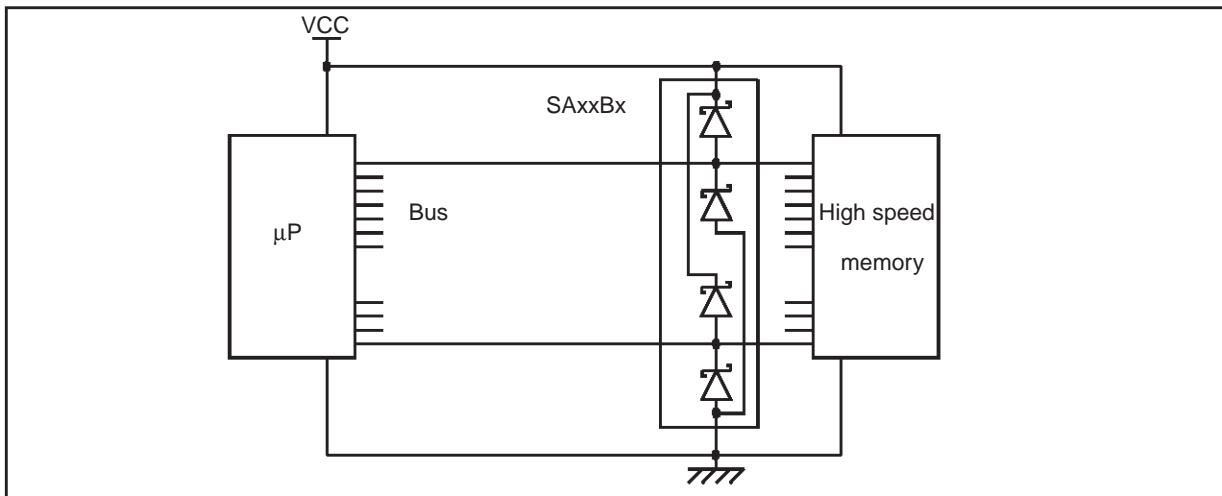


Fig 5: Capacitance between input or output and ground versus applied voltage (typical values).



SA12B5 / SA16B3 / SA16B6

TYPICAL APPLICATION

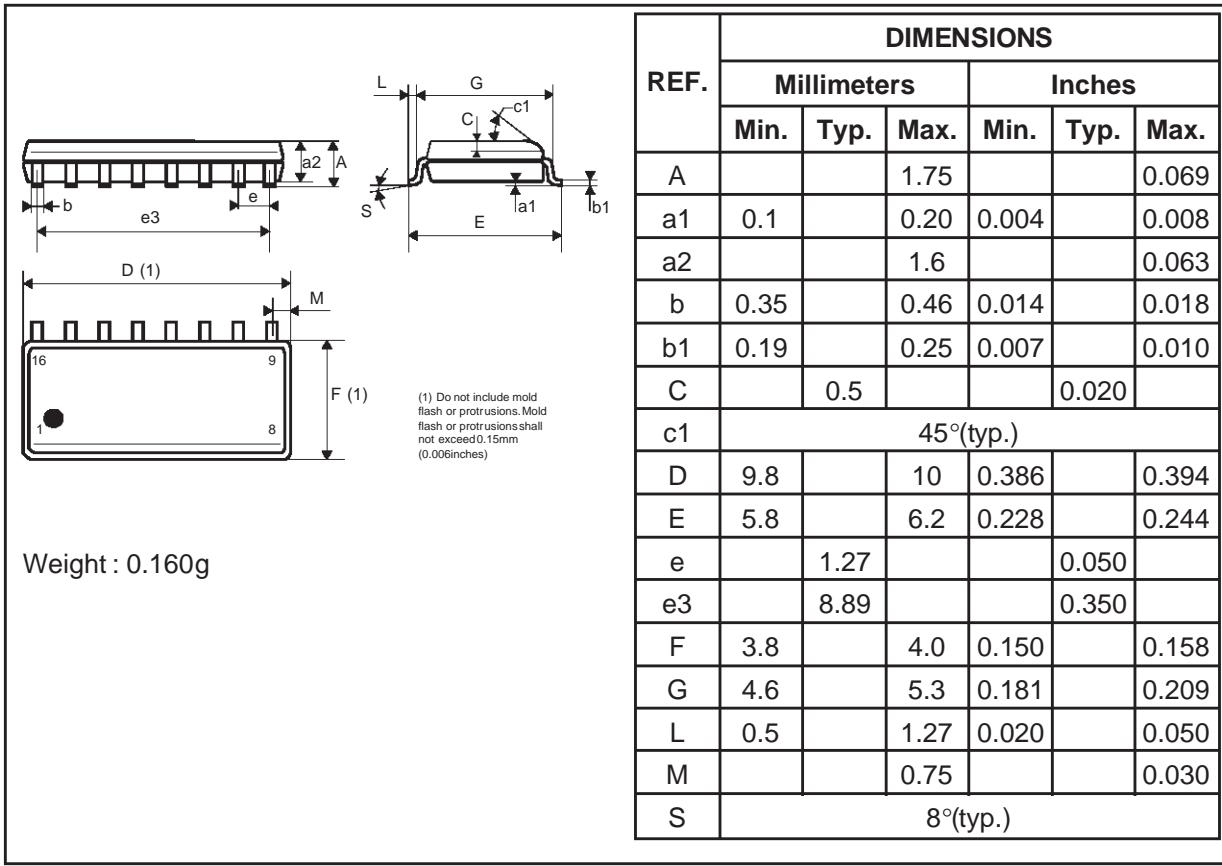


MARKING

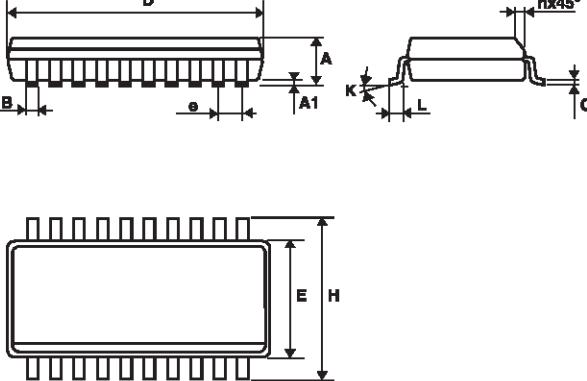
| Type | Package | Marking |
|--------|---------|---------|
| SA12B5 | SO16 | SA12B5 |
| SA16B3 | SO20 | SA16B3 |
| SA16B6 | SSOP20 | SA16B6 |

PACKAGE MECHANICAL DATA

SO-16



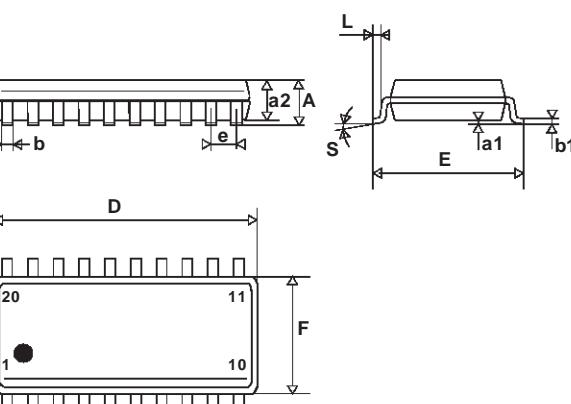
PACKAGE MECHANICAL DATA
SO-20



Weight: 0.520g

| REF. | DIMENSIONS | | | | | |
|------|-------------|------|-------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 2.35 | | 2.65 | 0.092 | | 0.104 |
| A1 | 0.10 | | 0.20 | 0.004 | | 0.008 |
| B | 0.33 | | 0.51 | 0.013 | | 0.020 |
| C | 0.23 | | 0.32 | 0.009 | | 0.013 |
| D | 12.6 | | 13.0 | 0.484 | | 0.512 |
| E | 7.40 | | 7.60 | 0.291 | | 0.299 |
| e | | 1.27 | | | 0.050 | |
| H | 10.0 | | 10.65 | 0.394 | | 0.419 |
| h | 0.25 | | 0.75 | 0.010 | | 0.029 |
| L | 0.50 | | 1.27 | 0.020 | | 0.050 |
| K | 8° (max) | | | | | |

SSOP20



Weight: 0.180g

| REF. | DIMENSIONS | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | 2.00 | | | 0.079 |
| A1 | | | 0.25 | | | 0.010 |
| A2 | 1.51 | | 2.00 | 0.059 | | 0.079 |
| b | 0.25 | 0.30 | 0.35 | 0.010 | 0.012 | 0.014 |
| c | 0.10 | | 0.35 | 0.004 | | 0.014 |
| D | 7.05 | | 8.05 | 0.278 | | 0.317 |
| E | 7.60 | | 8.70 | 0.299 | | 0.343 |
| E1 | 5.02 | 6.10 | 6.22 | 0.198 | 0.240 | 0.245 |
| e | | 0.65 | | | 0.026 | |
| k | 0° | | 10° | 0° | | 10° |
| L | 0.25 | 0.50 | 0.80 | 0.010 | 0.020 | 0.031 |

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