



# SA12B5 SA16B3 / SA16B6 SCHOTTKY ARRAYS

Application Specific Discretes  
A.S.D.™

## 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

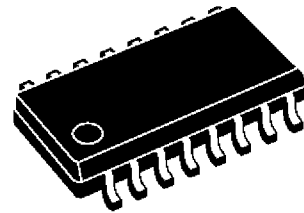
- 12-BIT (SA12) OR 16-BIT (SA16) DUAL SCHOTTKY DIODE ARRAYS
- REVERSE VOLTAGE :  $V_{RRM} = 7.5 \text{ V}$
- FORWARD VOLTAGE  $V_F < 1.3 \text{ V}$

## BENEFITS

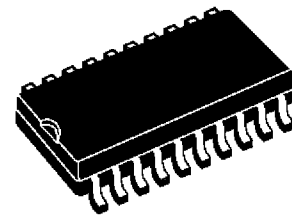
- Provides impedance matching, and minimizes distortion.
- Lowers EMI / RFI radiation.
- Eliminates negative voltage : minimizes risk of latch-up for sensitive ICs.
- Saves valuable space on board.

## COMPLIES WITH FOLLOWING STANDARD :

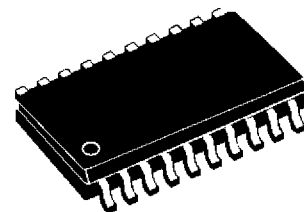
- MIL STD 883C - Method 3015-6 - class 3
- IEC1000-4-2 level 4



SO-16



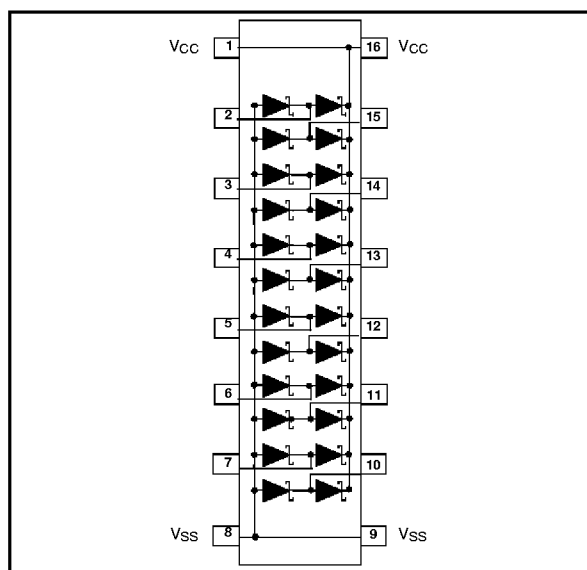
SO-20



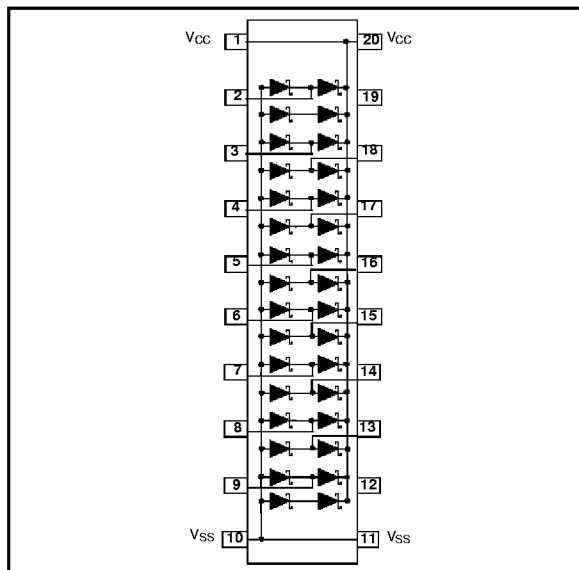
SSOP20

# SA12B5 / SA16B3 / SA16B6

## FUNCTIONAL DIAGRAM (SO-16)



## FUNCTIONAL DIAGRAM (SO-20 and SSOP20)



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

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

Note 1: within the T<sub>OP</sub> range, the SAxx keep on operating. The impacts of the ambient temperature are given by derating curves on the following page.

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

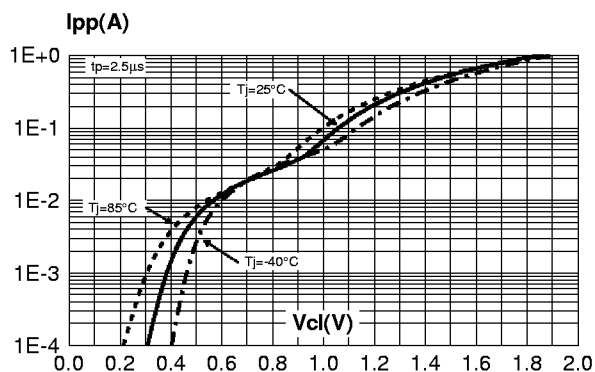
Symbol	Parameter and test conditions		Typ.	Max.	Unit
I <sub>R</sub>	Leakage current @ $V_{RRM} = 7.5\text{ V}$			5	μA
V <sub>F</sub>	Forward voltage (see note 2)	I <sub>PP</sub> = 18 mA I <sub>PP</sub> = 50 mA		1.05 1.3	V
C <sub>d</sub>	Capacitance	V <sub>bias</sub> = 0V, F = 1MHz		16	pF

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

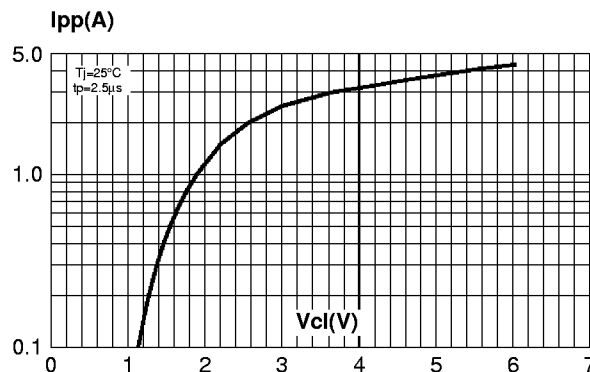
### THERMAL RESISTANCE

Symbol	Parameter	Packages	Value	Unit
R <sub>th(j-a)</sub>	Junction to ambient	SO-16 and SSOP20 SO-20	140 100	°C/W

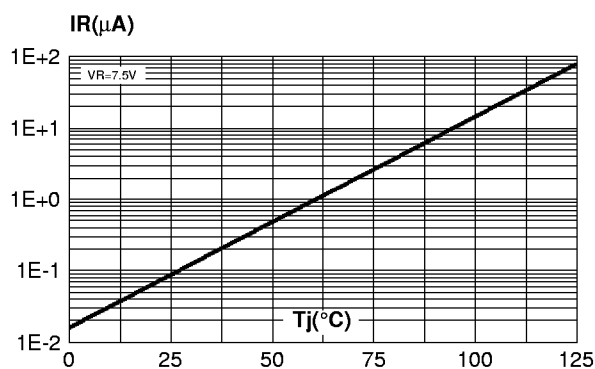
**Fig1-1:** Clamping forward voltage versus peak pulse current (typical values, low level).



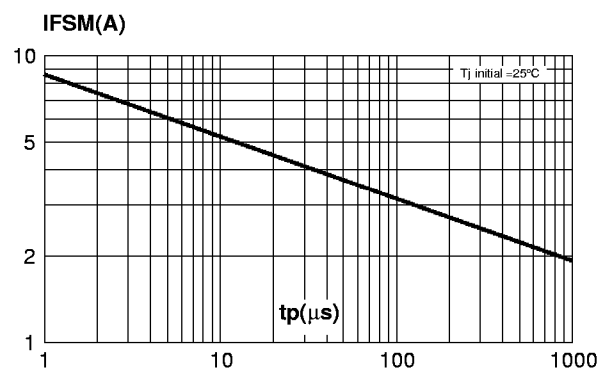
**Fig1-2:** Clamping forward voltage versus peak pulse current (typical values, high level).



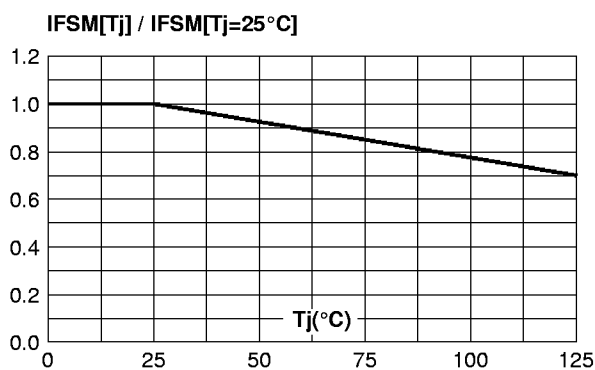
**Fig 2:** Leakage current versus junction temperature (typical values).



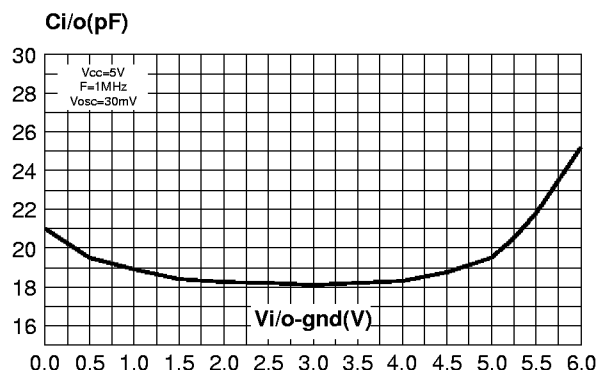
**Fig 3:** Non repetitive surge peak forward current versus pulse duration (rectangular waveform).



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

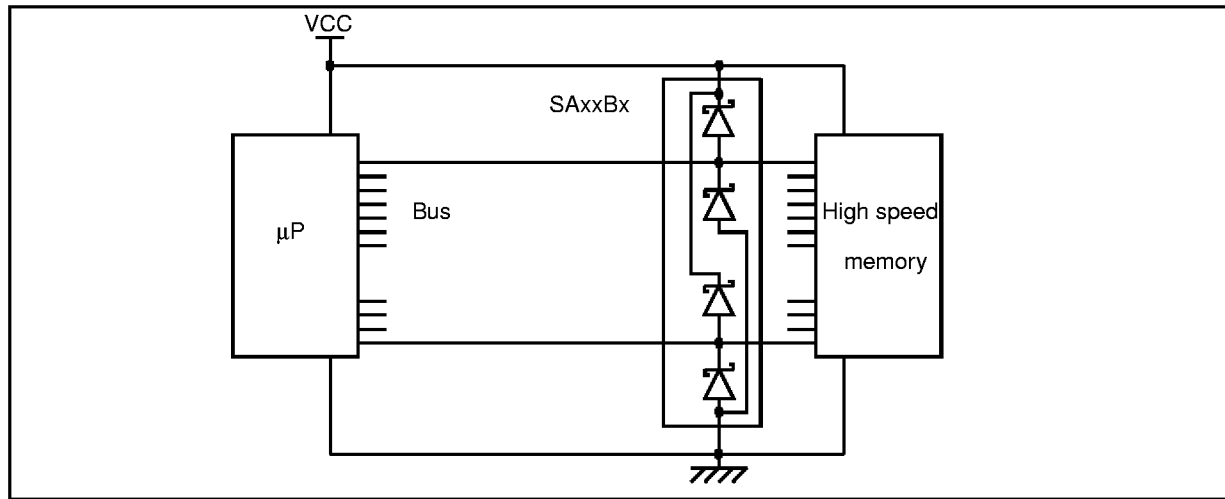


**Fig 5:** Capacitance between input or output and ground versus applied voltage (typical values).



# SA12B5 / SA16B3 / SA16B6

## TYPICAL APPLICATION



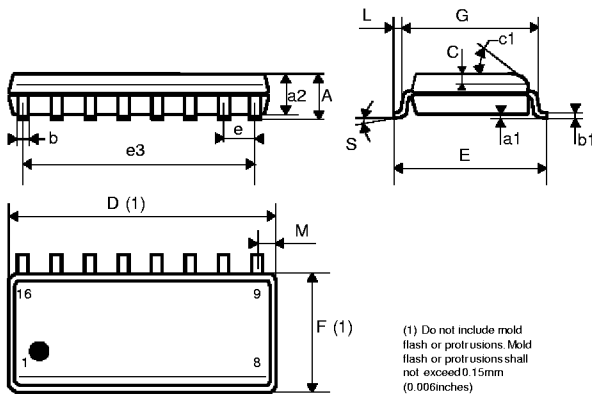
## MARKING

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

## PACKAGE MECHANICAL DATA

### SO-16

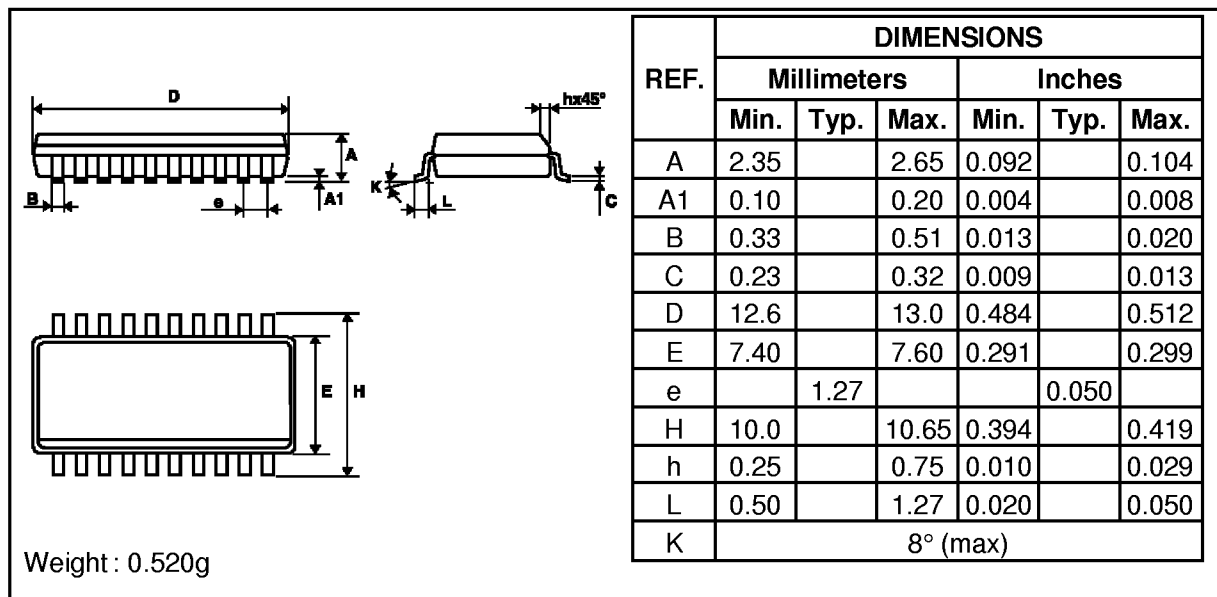
REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.20	0.004		0.008
a2			1.6			0.063
b	0.35		0.46	0.014		0.018
b1	0.19		0.25	0.007		0.010
C		0.5			0.020	
c1	45°(typ.)					
D	9.8		10	0.386		0.394
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		8.89			0.350	
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.)					



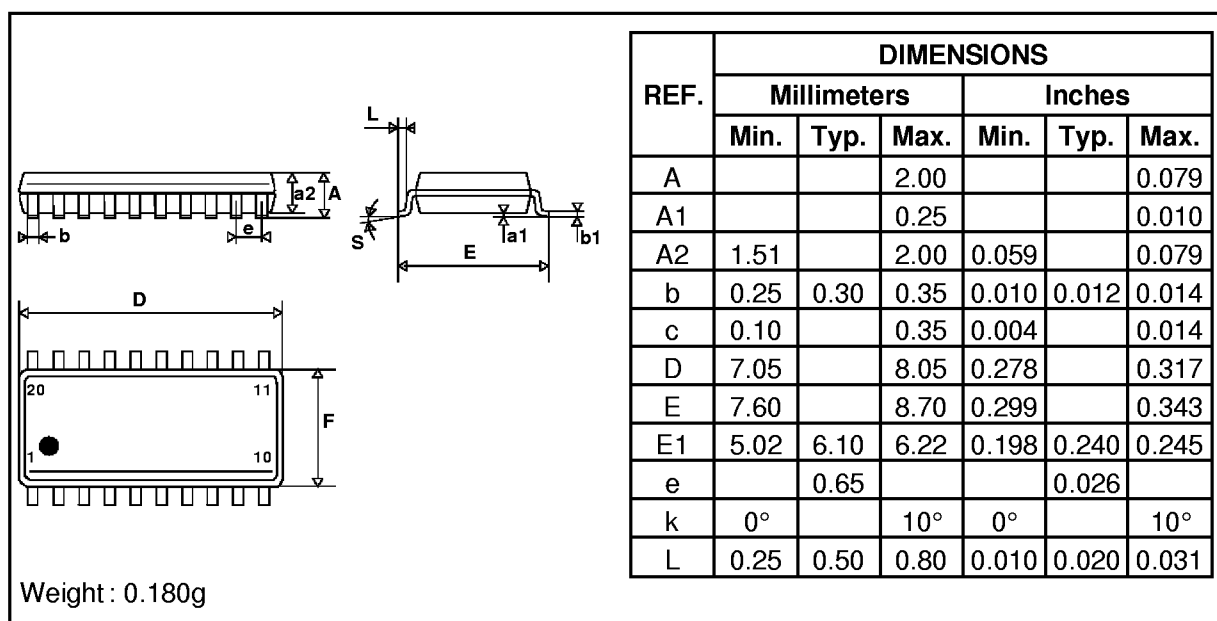
Weight : 0.160g

## PACKAGE MECHANICAL DATA

SO-20



## SSOP20



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