SA12B5
SA16B3 / SA16B6

SCHOTTKY ARRAYS

Application Specific Discretes
A.S.D.™

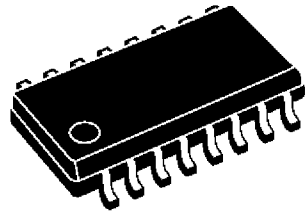
MAIN APPLICATIONS

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

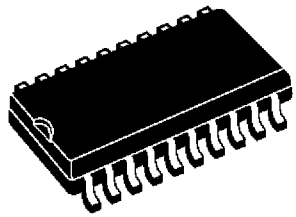
- PCs
- Workstations
- High frequency processor boards
- Dataline interface

DESCRIPTION

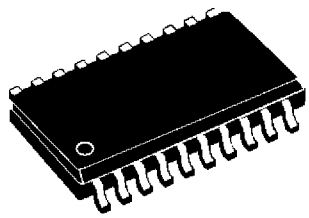
Dedicated to bus termination, the Schottky arrays SA12B5, SA16B3 and SA16B6 minimise stray emissions from PCB tracks. They provide suitable termination by avoiding signal reflexions and distortions.



SO-16



SO-20



SSOP20

FEATURES

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

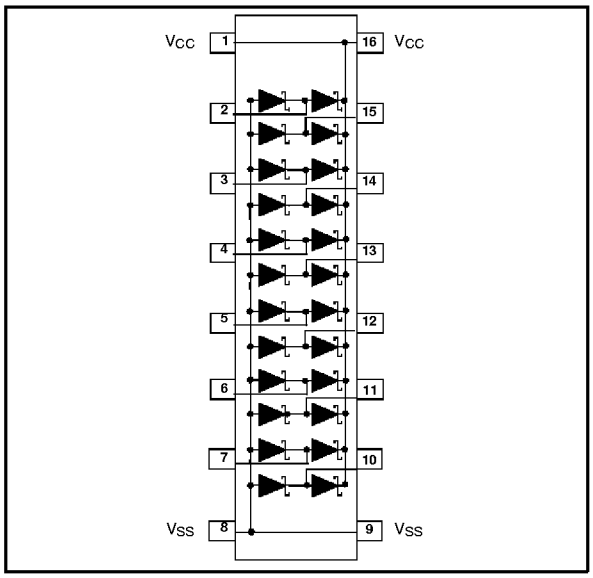
BENEFITS

- 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.

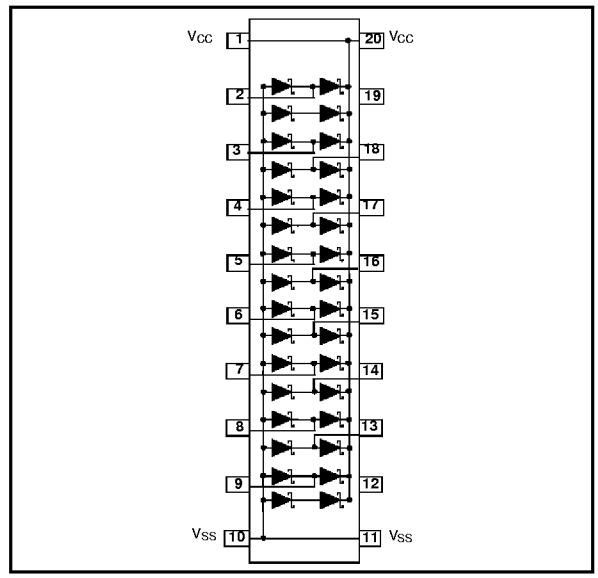
COMPLIES WITH FOLLOWING STANDARD :

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

FUNCTIONAL DIAGRAM (SO-16)



FUNCTIONAL DIAGRAM (SO-20 and SSOP20)



ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 (V_{CC} - V_{SS})		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°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)	IPP = 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 schotty 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

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

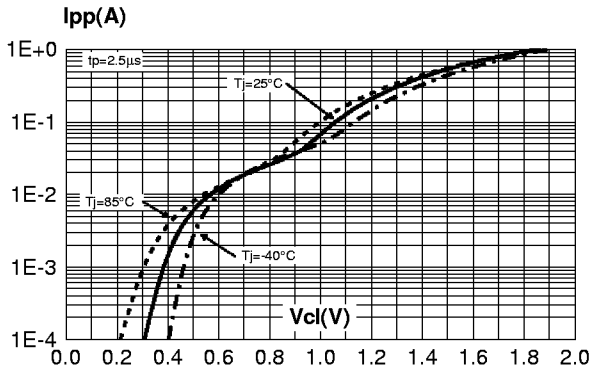


Fig1-2: Clamping forward voltage versus peak pulse current (typical values, high level).

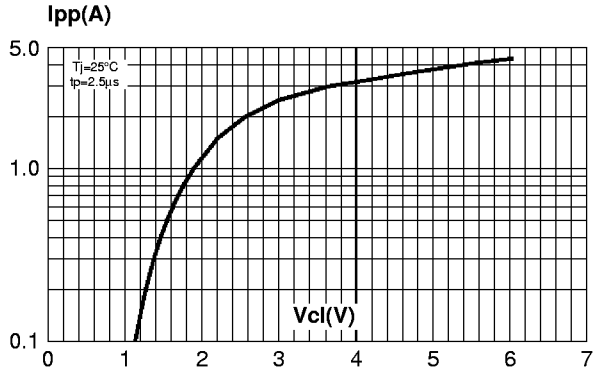


Fig 2: Leakage current versus junction temperature (typical values).

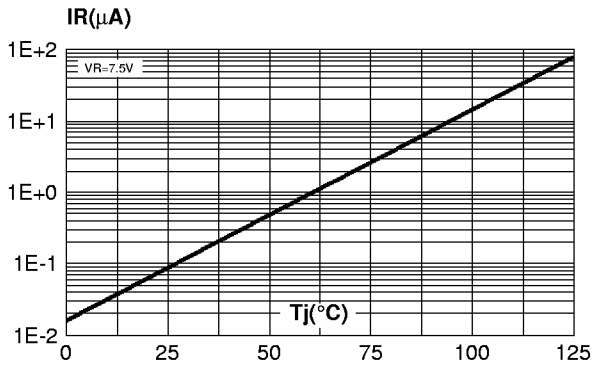


Fig 3: Non repetitive surge peak forward current versus pulse duration (rectangular waveform).

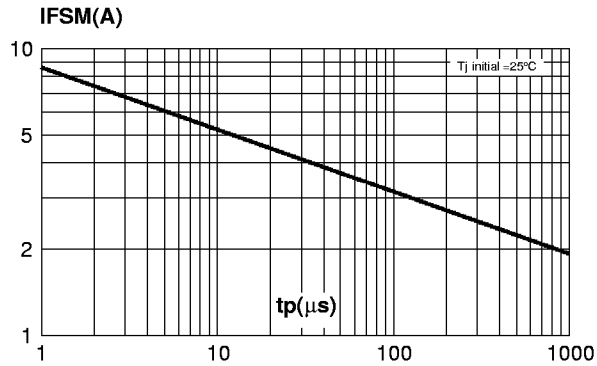


Fig 4: Non repetitive surge peak forward current versus initial junction temperature.

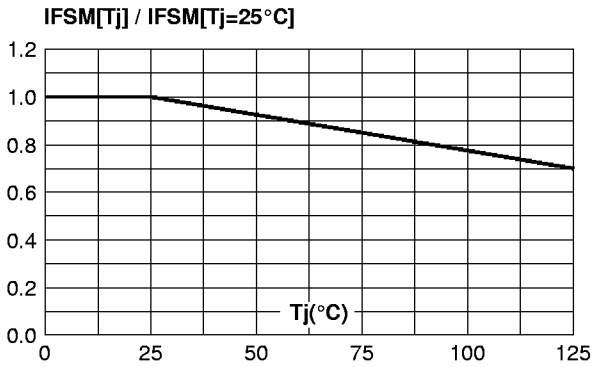
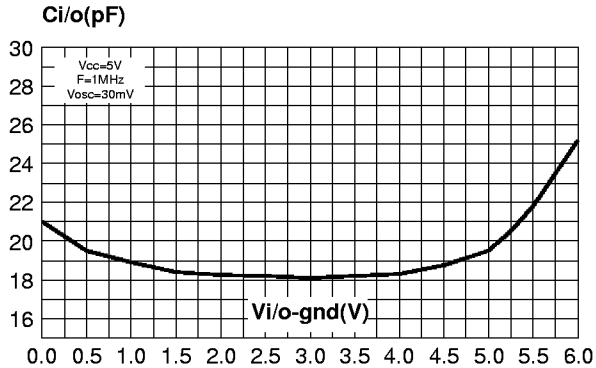
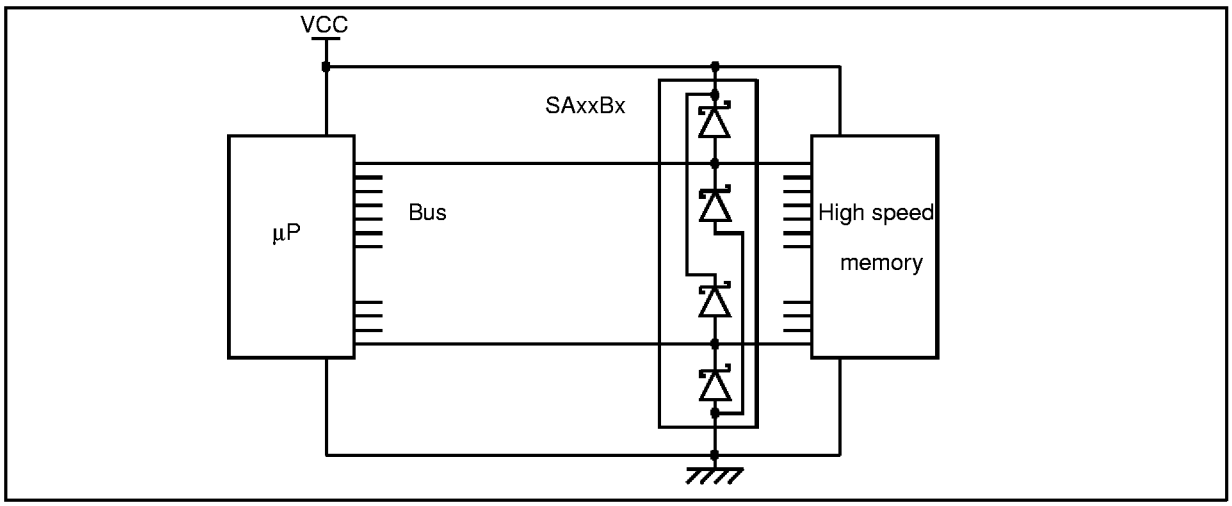


Fig 5: Capacitance between input or output and ground versus applied voltage (typical values).



TYPICAL APPLICATION

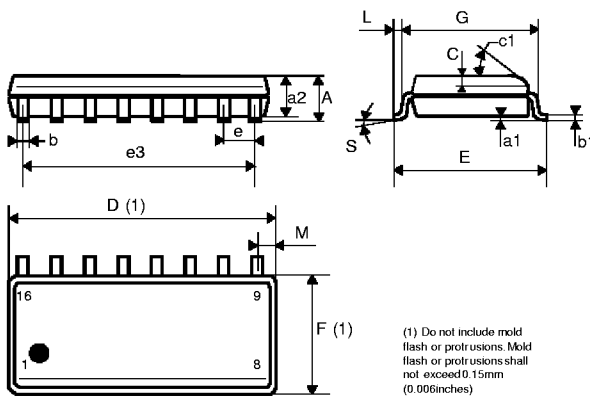


MARKING

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

PACKAGE MECHANICAL DATA

SO-16

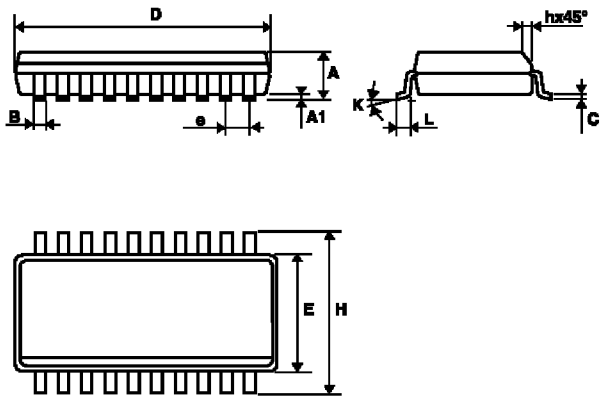


Weight : 0.160g

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

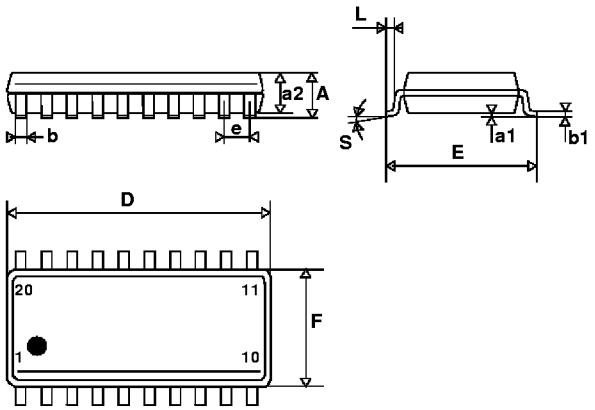
SO-20



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)					

Weight : 0.520g

SSOP20



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

Weight : 0.180g