

APPLICATION

Protection of logic side of ISDN S-interface.
Protection of I/O lines of microcontroller.
Signal conditioning.

FEATURES

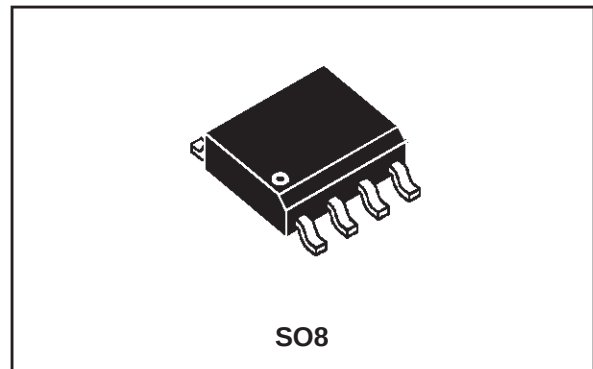
- ARRAY OF 8 OR 12 DIODES
- LOW INPUT CAPACITANCE
- SUITABLE FOR DIGITAL LINE PROTECTION

DESCRIPTION

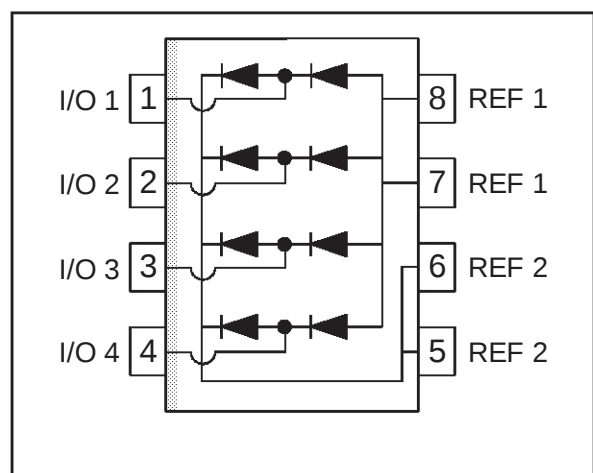
ARRAY of 8 or 12 diodes configured by cells of 2 diodes, each cell being used to protect signal line from transient overvoltages by clamping action.

COMPLIES WITH FOLLOWING STANDARDS :

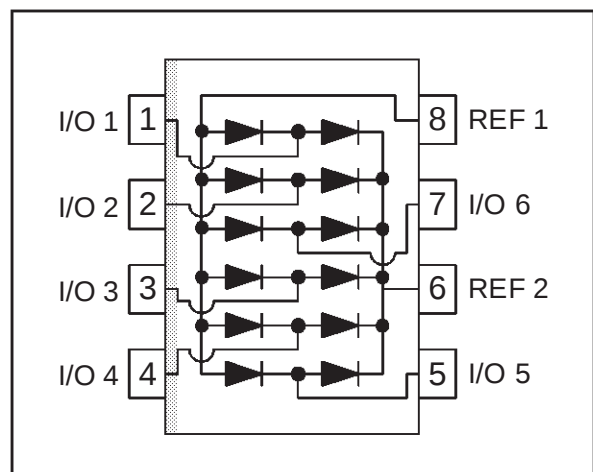
IEC1000-4-22 level 4: 15kV (air discharge)
8kV (contact discharge)



FUNCTIONAL DIAGRAM : DA108S1



FUNCTIONAL DIAGRAM : DA112S1



DA108S1 / DA112S1**ABSOLUTE MAXIMUM RATINGS** ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage (for one single diode)		18	V
I_{PP}	Repetitive peak forward current *	8/20 μs	12	A
P	Power dissipation		0.73	W
T_{stg} T_j	Storage temperature range Maximum operating junction temperature		- 55 to + 150 150	$^{\circ}\text{C}$
T_L	Maximum lead temperature for soldering during 10s.		260	$^{\circ}\text{C}$

* The surge is repeated after the device returns to ambient temperature

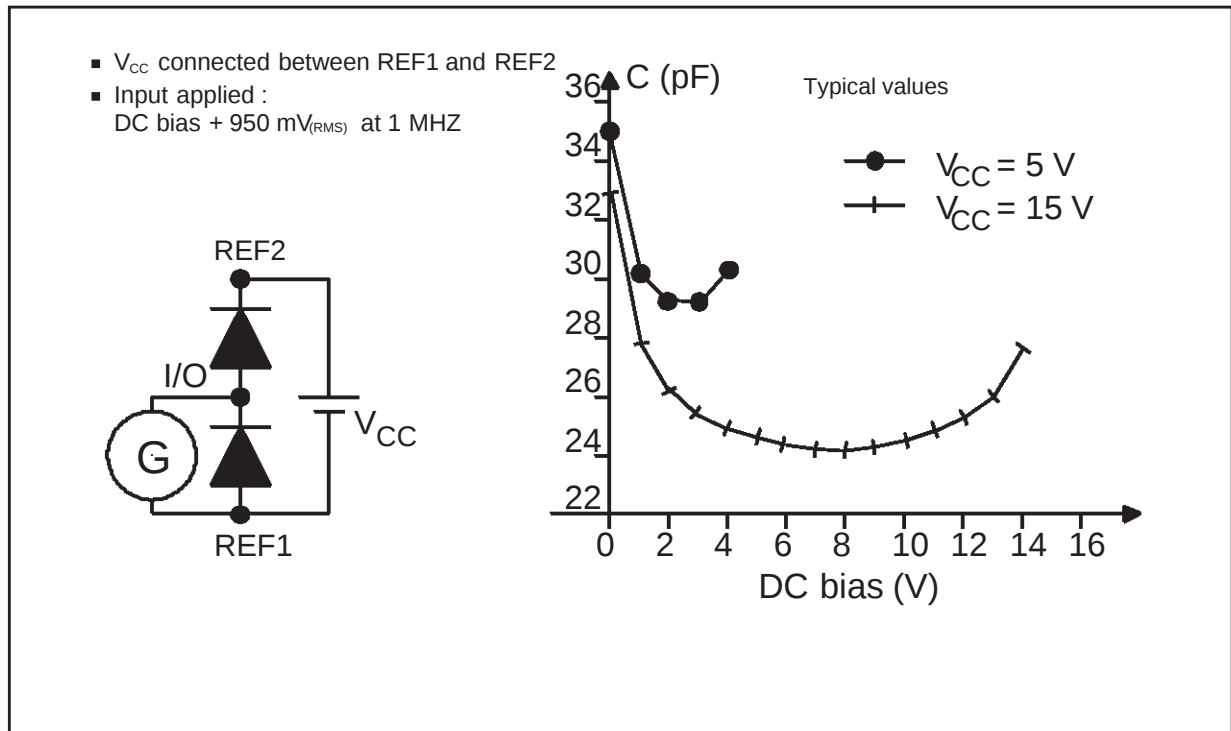
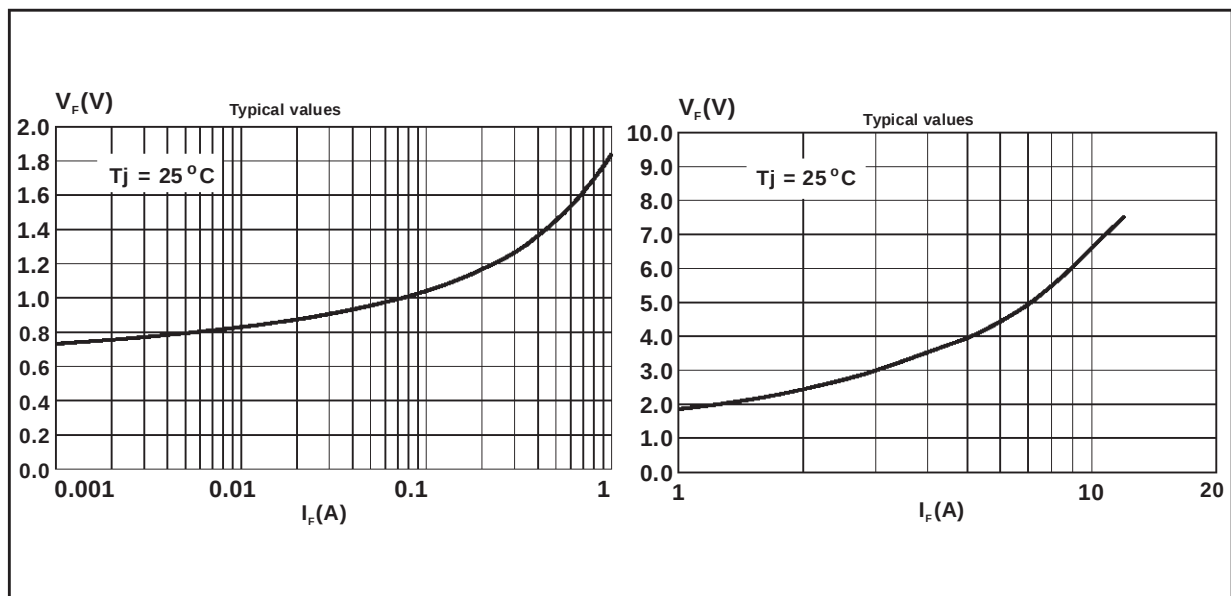
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient	170	$^{\circ}\text{C/W}$

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

Symbol	Parameter		Max.	Unit
V_{FP}	Peak forward voltage	$I_{PP} = 12\text{A}$, 8/20 μs	DA108S1 DA112S1 9 12	V
V_F	Forward voltage	$I_F = 50\text{mA}$	1.2	V
I_R	Reverse leakage current	$V_R = 15\text{V}$	2	μA

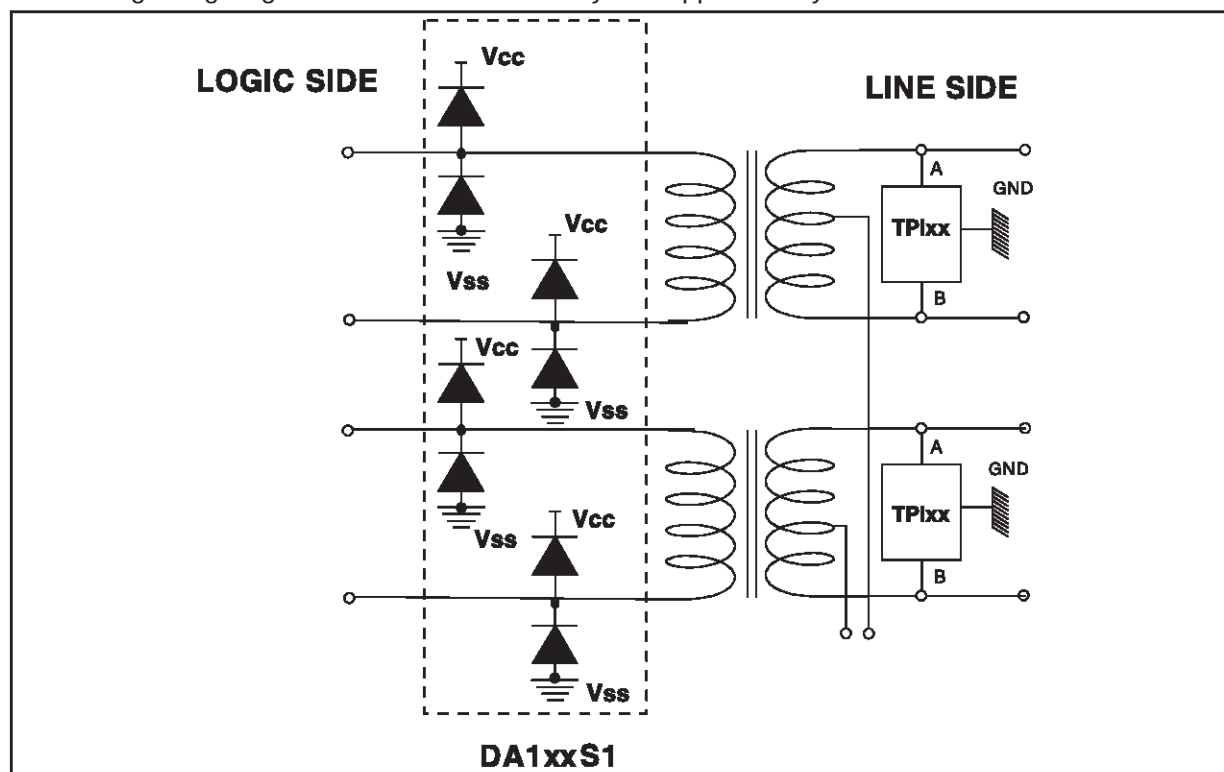
Fig.1 : Input capacitance

Fig.2 : Typical peak forward voltage characteristics (8/20 μ s pulse)

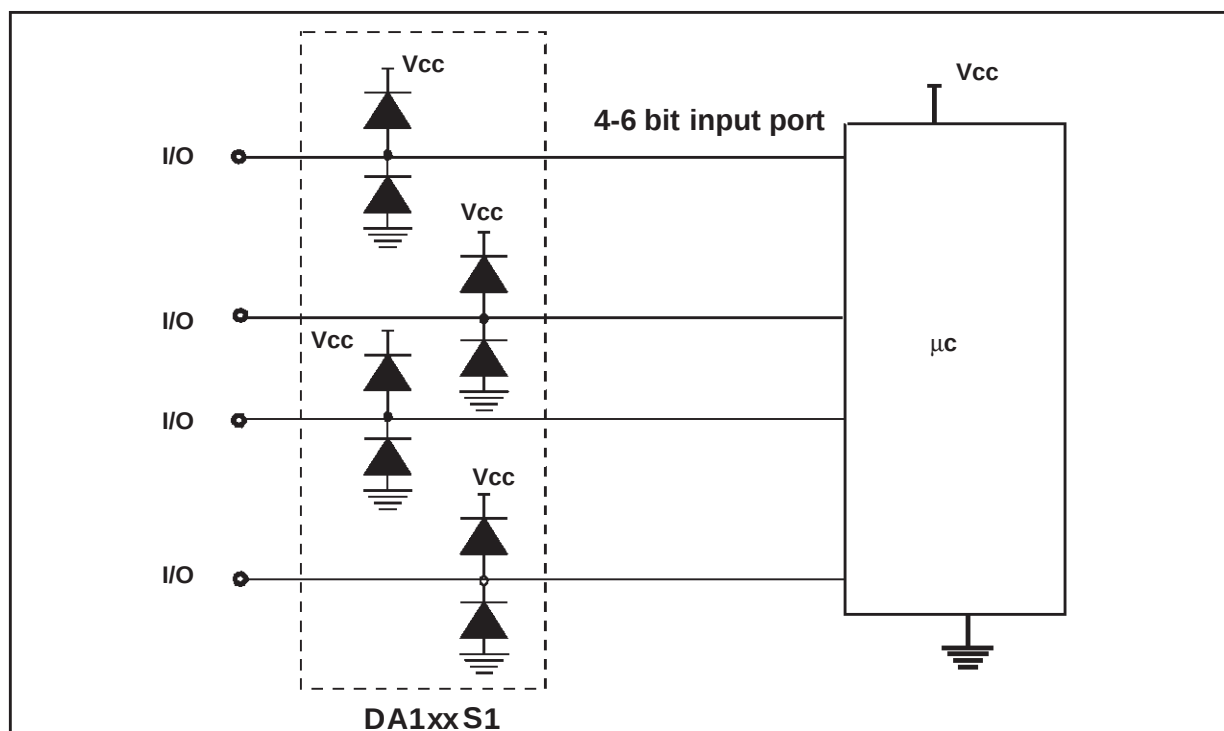
DA108S1 / DA112S1

APPLICATION 1 : ISDN Interface Protection

Residual lightning surges at transformer secondary are suppressed by DA108S1

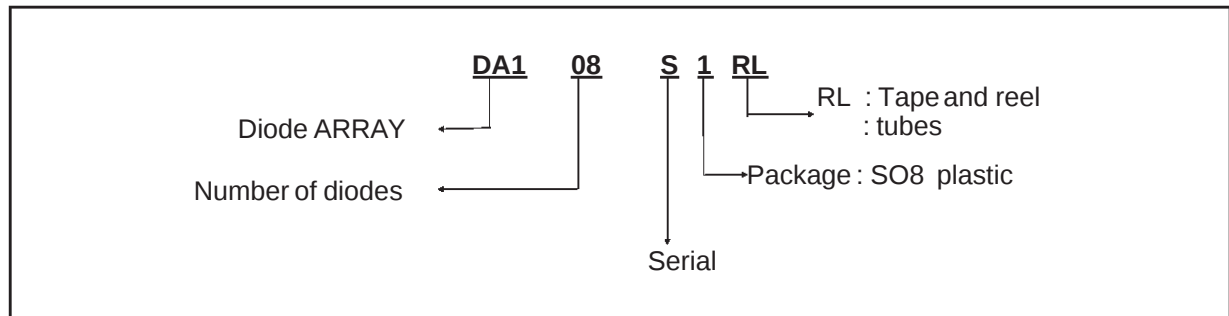


APPLICATION 2 : Microcontroller I/O port protection



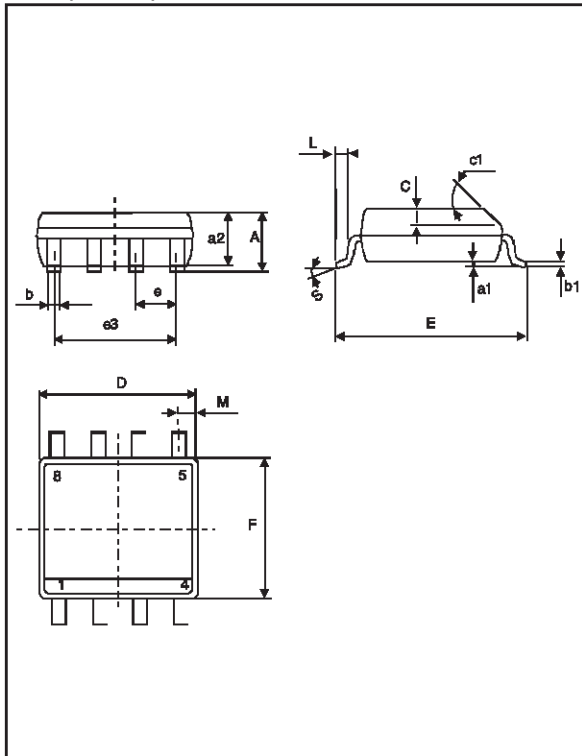
IMPORTANT : DA108S1 must imperatively be connected to the reference voltages by REF1 and REF2.

ORDER CODE



MARKING : Logo, Data Code,

DA108S1	DA108S
DA112S1	DA112S

PACKAGE MECHANICAL DATA
SO8 (Plastic)

REF.	DIMENSIONS					
	Millimetres			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C		0.50			0.020	
c1	45° (typ)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.15		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max)					

Packaging : Preference packaging is tape and reel.

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1998 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Morocco
The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.