



# DALC112S1

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

## LOW CAPACITANCE DIODE ARRAY FOR ESD PROTECTION

### MAIN APPLICATIONS

Where ESD protection for high speed datalines is required :

- LAN / WAN equipment
- Computer I/O
- Graphic video port
- Set top box I/O

### DESCRIPTION

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

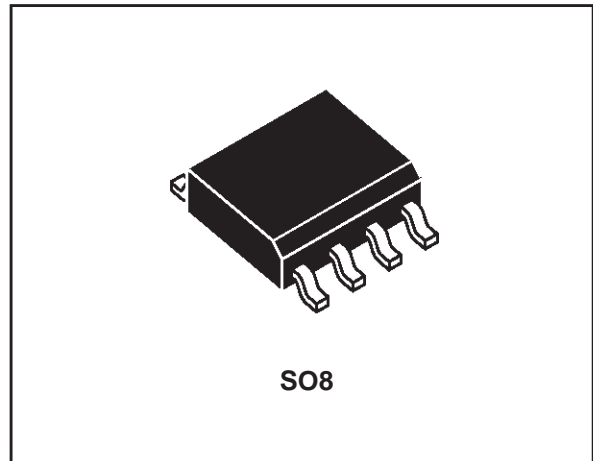
Its very low capacitance allows to protect fast signals with no distortion. It is particularly suited for the protection of graphic video ports.

### FEATURES

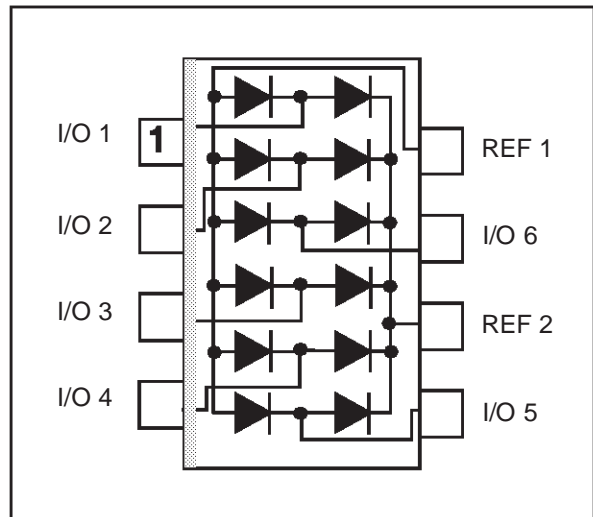
- ARRAY OF 12 DIODES FOR ESD PROTECTION.
- PEAK REVERSE VOLTAGE  $V_{RRM} = 18V$  PER DIODE.
- VERY LOW CAPACITANCE PER DIODE :  $C < 5pF$ .
- VERY LOW LEAKAGE CURRENT :  $I_R < 2 \mu A$ .

### COMPLIES WITH THE FOLLOWING STANDARDS :

IEC 1000-4-2 level 3      8 kV (air discharge)  
                                     6 kV (contact discharge)

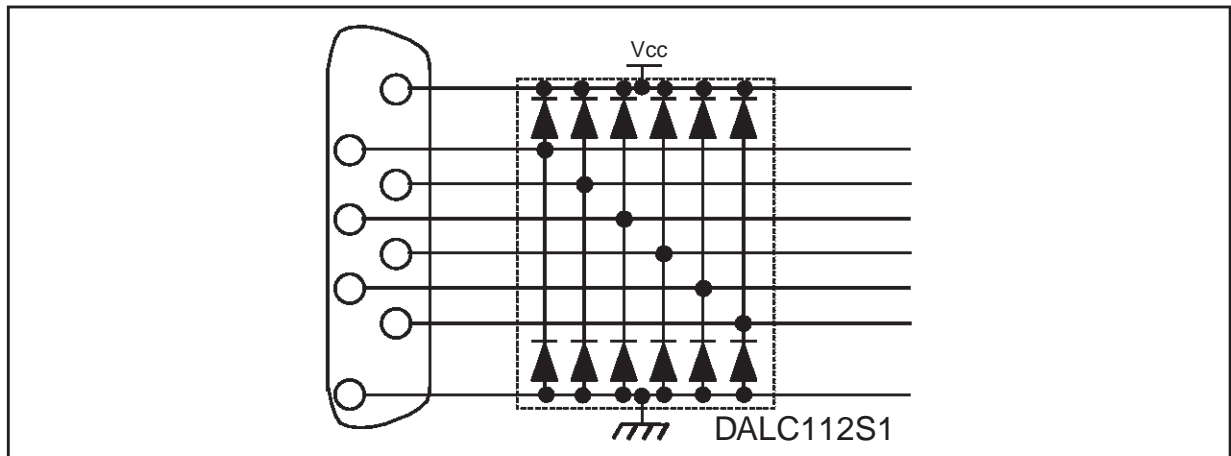


### FUNCTIONAL DIAGRAM



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## TYPICAL APPLICATION



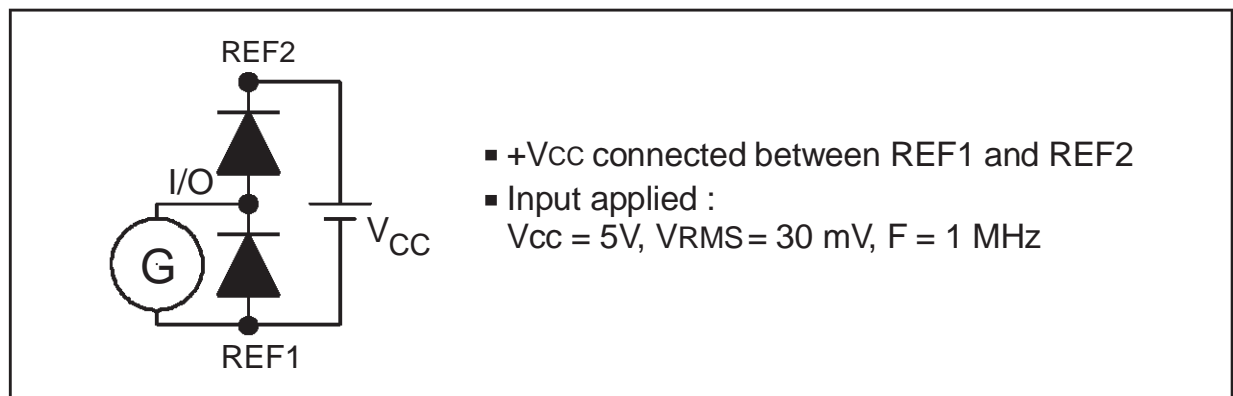
### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25°C).

| Symbol                             | Parameter   | Value               | Unit     |
|------------------------------------|---|---------------------|----------|
| V <sub>RRM</sub>                   | Peak reverse voltage per diode                            | 18                  | V        |
| T <sub>stg</sub><br>T <sub>j</sub> | Storage temperature range<br>Maximum junction temperature | -55 to + 150<br>150 | °C<br>°C |

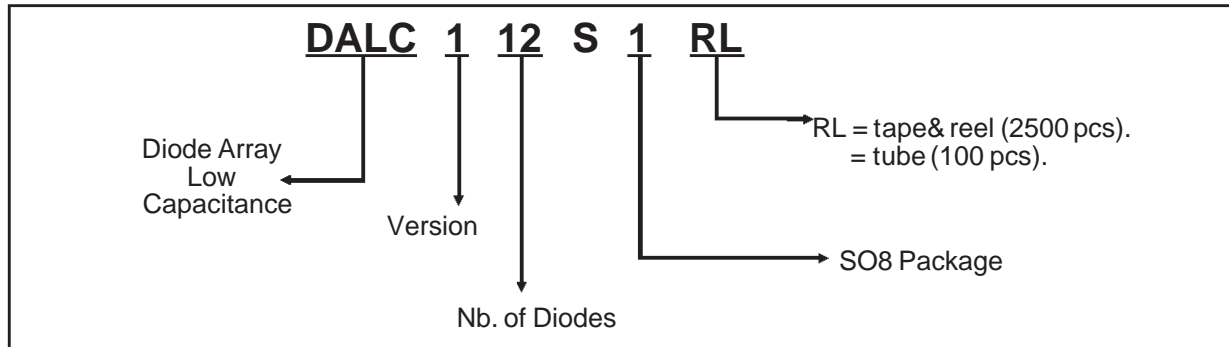
### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C).

| Symbol         | Parameter  | Typ. | Max. | Unit |
|----------------|--|------|------|------|
| V <sub>F</sub> | Forward voltage<br>I <sub>F</sub> = 50 mA  |      | 1.3  | V    |
| I <sub>R</sub> | Reverse leakage current per diode<br>V <sub>R</sub> = 15 V   |      | 2    | μA   |
| C              | Input capacitance between Line and GND<br>V <sub>cc</sub> = 5 V, V <sub>RMS</sub> = 30 mV, F = 1 MHz<br>(see figure 1 below) | 7    |      | pF   |

**Fig 1** : Input capacitance measurement



**ORDER CODE**

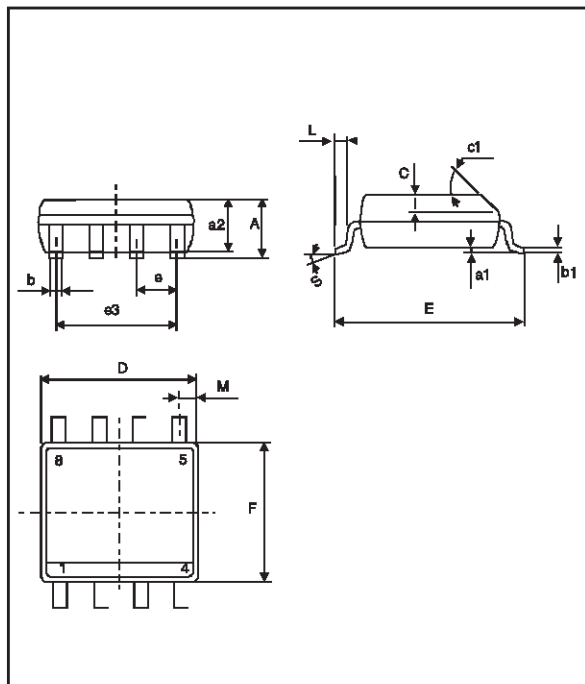


**MARKING**

| Type      | Marking | Order Code               | Packaging (Base Qty)             |
|-----------|---------|--------------------------|----------------------------------|
| DALC112S1 | DALC12  | DALC112S1<br>DALC112S1RL | tube (100)<br>tape & reel (2500) |

**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:** Preferred packaging is tape and reel.

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