

## Secondary protection for DSL lines

### Features

- Stand off voltage: 30 V
- Surge capability:  $I_{pp} = 30 \text{ A } 8/20 \mu\text{s}$
- Low capacitance device: 4.5 pF at 2 V
- RoHS package
- Low leakage current: 0.5  $\mu\text{A}$  at 25 °C

### Description

The DDSL01 has been developed to provide a low capacitance and a high surge capability to comply with various standards such as IEC 61000-4-5, GR-1089 and ITU-T K20/21 in DSL applications.

The DDSL01 is packaged in SOT23-3L.

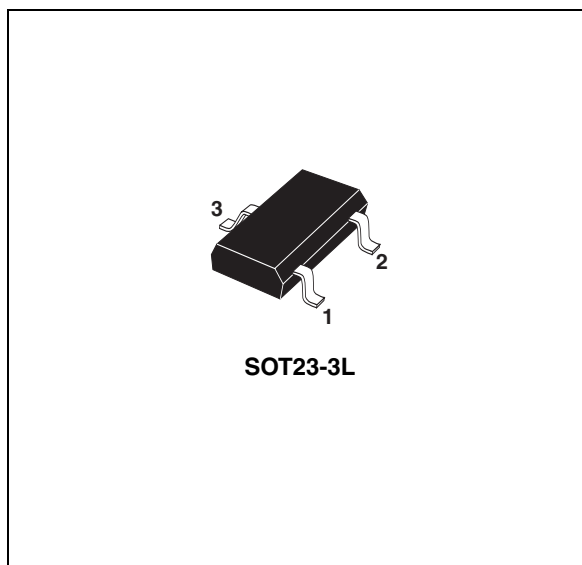
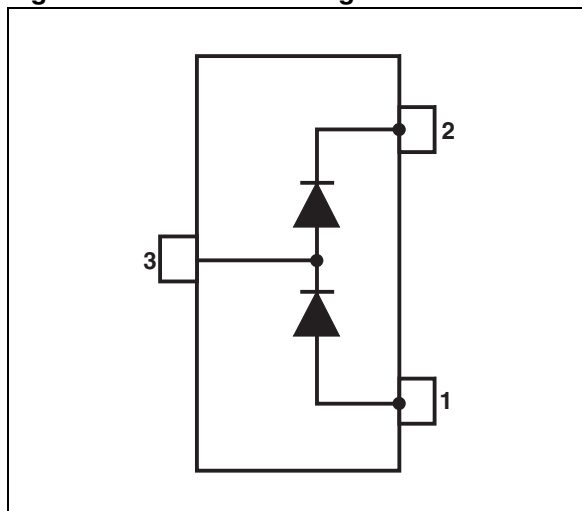


Figure 1. Functional diagram



# 1 Characteristics

**Table 1. Absolute maximum ratings ( $T_{amb} = 25^{\circ}\text{C}$ )**

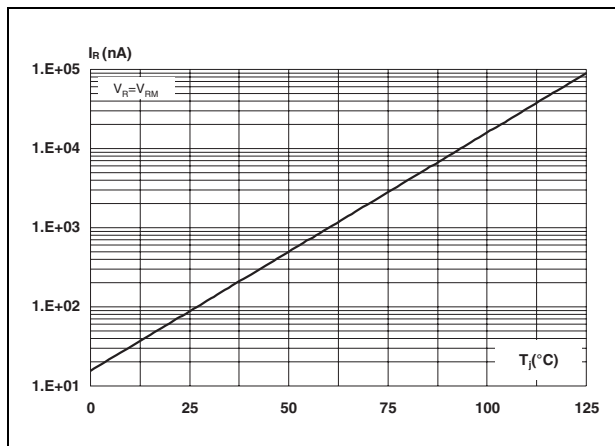
Symbol	Parameter	Value	Unit
$I_{PP}$	Peak pulse current (8/20 $\mu\text{s}$ )	30	A
$T_j$	Operating junction temperature range	-40 to 125	$^{\circ}\text{C}$
$T_{stg}$	Storage temperature range	-55 to +150	$^{\circ}\text{C}$
$T_L$	Maximum lead temperature for soldering during 10 s	260	$^{\circ}\text{C}$

**Table 2. Electrical characteristics ( $T_{amb} = 25^{\circ}\text{C}$ )**

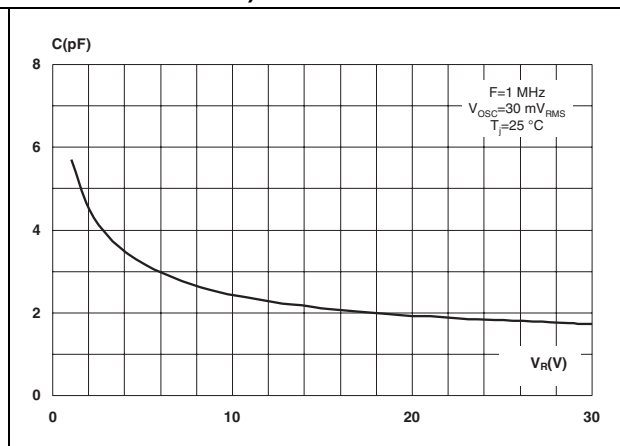
Order code	$I_{RM} @ V_{RM}$		$V_F @ I_F$		$C^{(1)}$
	max.		max.		max.
	$\mu\text{A}$	V	V	mA	pF
DDSL01-030SL	0.5	30	0.6	50	7

1. Test conditions:  $V_R = 2\text{ V}$  bias,  $V_{RMS} = 30\text{ mV}$ ,  $F = 1\text{ MHz}$

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

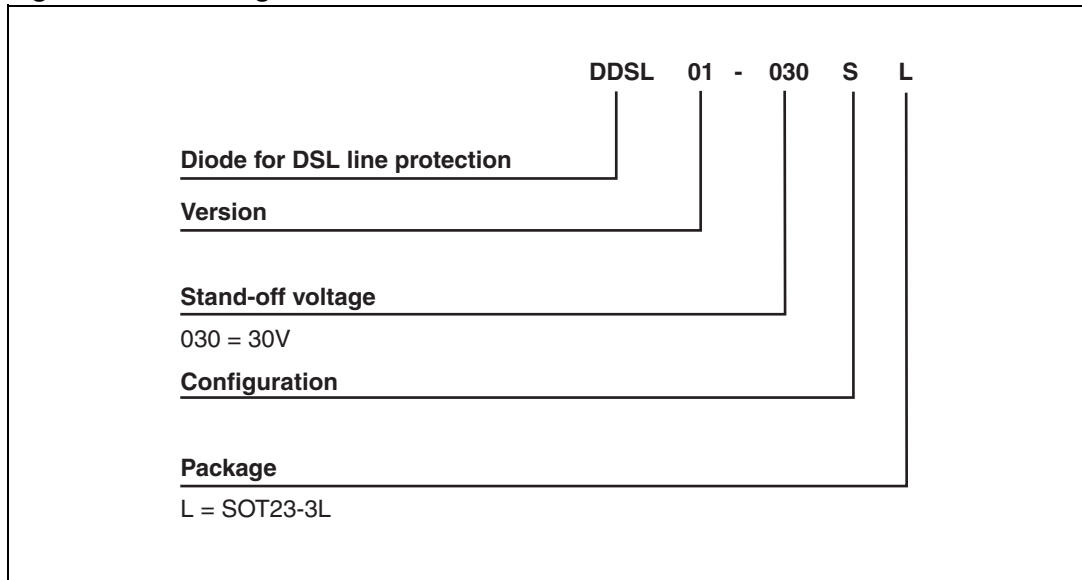


**Figure 3. Junction capacitance versus reverse applied voltage (typical values)**



## 2 Ordering information scheme

Figure 4. Ordering information scheme



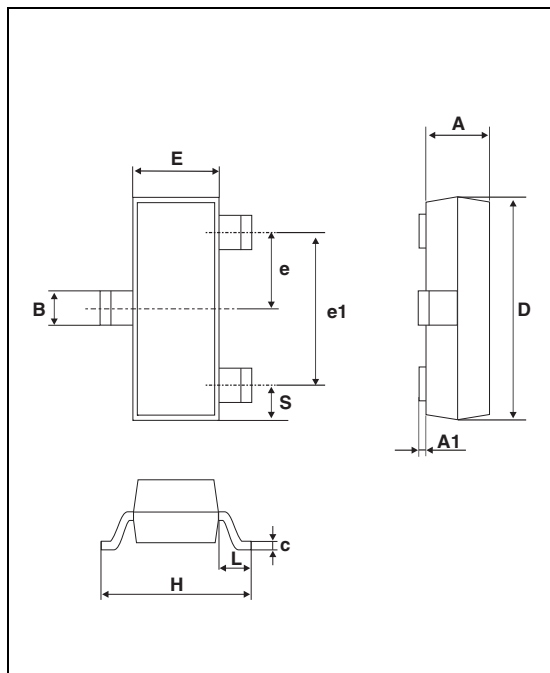
### 3 Package information

- Epoxy meets UL94, V0
- Lead-free packages

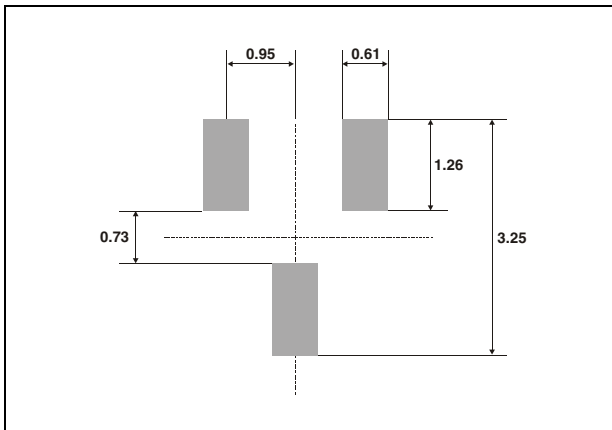
In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: [www.st.com](http://www.st.com). ECOPACK® is an ST trademark.

**Table 3. SOT23-3L dimensions**

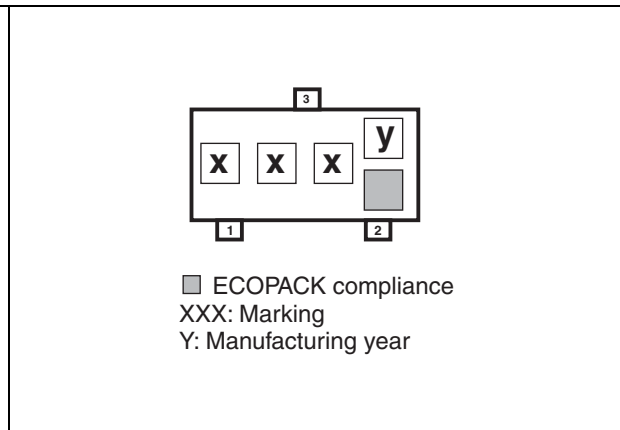
Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.89	1.4	0.035	0.055
A1	0	0.1	0	0.004
B	0.3	0.51	0.012	0.02
c	0.085	0.18	0.003	0.007
D	2.75	3.04	0.108	0.12
e	0.85	1.05	0.033	0.041
e1	1.7	2.1	0.067	0.083
E	1.2	1.6	0.047	0.063
H	2.1	2.75	0.083	0.108
L	0.6 typ.		0.024 typ.	
S	0.35	0.65	0.014	0.026



**Figure 5. Footprint (dimensions in mm)**



**Figure 6. Marking**



## 4 Ordering information

Table 4. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
DDSL01-030SL	DD1	SOT23-3L	0.01 g	3000	Tape and reel

## 5 Revision history

Table 5. Document revision history

Date	Revision	Changes
15-Apr-2010	1	First issue.

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