



# New Product Announcement

## DLLFSD01 Switching Diodes

### DLLFSD01 Series Gives Designers a Competitive Edge for Ultra-low Leakage Current and Super-fast Speed Applications

Diodes Incorporated announces the introduction of the new ultra-low leakage and super-fast switching diode series. The initial release includes the DLLFSD01T which is housed in the SOD523 type case, the DLLFSD01LPH4 which is housed in the X2-DFN1006-2 type case, and the DLLFSD01LP3 which is housed in the X3-DFN0603-2 type case. These state-of-the-art SOD and DFN packages, of low-profile and small form-factor, enable compact dimensions for applications where space is at a premium.

The DLLFSD01 series offers ultra-low leakage current ( $I_R \sim 5\text{nA}$ ), super-fast reverse recovery time ( $t_{rr} \leq 4\text{ns}$ ), and extremely low total capacitance ( $C_T \sim 0.5\text{pF}$ ). These unique characteristics improve system power consumption as well as reduce the switching loss of the application circuit.

The targeted end markets for these devices are LCD displays, portable electronics, mobile communication, consumer products, notebook computers, desktop computers, and computer peripherals.

Delivering superior performance, these devices are ideally suited for the fully-automated assembly line commonly deployed in the manufacturing process.

The SOD523, X2-DFN1006-2, and X3-DFN0603-2 packages are fully green and RoHS-compliant. (See [www.diodes.com](http://www.diodes.com) for further details).



#### The Diodes' Advantage

##### ■ Ultra-low Reverse Leakage Current

The device has ultra-low reverse leakage current ( $I_R \sim 5\text{nA}$  @  $V_R = 5\text{V}$  typ.), which improves the power dissipation of the diode for reverse-mode operation.

##### ■ Super-fast Reverse Recovery Time and Extremely Low Capacitance

The device has super-fast reverse recovery time ( $t_{rr} \leq 4\text{ns}$  max.) which allows it to quickly switch from a conducting state to a blocking state. In addition, the total capacitance is  $C_T \sim 0.5\text{pF}$  typ. at 1.0MHz.

##### ■ Super-fast Switching Speed for High Power Efficiency

The super-fast switching speed of the device reduces switching loss and increases power efficiency. It is ideal for applications such as portable electronics and mobile communications that require fast switching speed and high power efficiency.

#### Circuit Functions

- Super fast switching
- Super fast recovery time
- Ultra-low leakage current

#### Target Markets

- LCD display
- Mobile phones
- Portable electronics
- Consumer products
- Notebook, desktop computers, and computer peripherals



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### Product Portfolio

Part	Recovery Switching Speed	Max Average Rectified Current $I_O$ (A)	Peak Repetitive Reverse Voltage $V_{RRM}$ (V)	Maximum Forward Voltage Drop $V_F$ (V)	Maximum Reverse Current $I_R$ ( $\mu$ A)	Maximum Peak Forward Surge Current $I_{FSM}$ (A)	Maximum Reverse Recovery Time $t_{rr}$ (ns)	Typical Total Capacitance $C_T$ (pF)	Maximum Power Dissipation $P_d$ (W)
DLLFSD01T-7	Super-fast	0.1	80	1.2	0.2	2	4	0.5	0.15
DLLFSD01LPH4-7B	Super-fast	0.1	80	1.2	0.2	2	4	0.5	0.35
DLLFSD01LP3-7	Super-fast	0.1	80	1.2	0.2	2	4	0.5	0.20

### Cross Reference

Diodes Device	Competitors	Cross Reference
DLLFSD01T-7	NXP, On Semi, Panjit, MCC, Comchip, TSC	BAS516, 1SS400T1G, 1SS400, 1SS387, 1SS400-G, 1SS400
DLLFSD01LPH4-7B	Panjit, NXP	1SS387FN2, BAS16L
DLLFSD01LP3-7	N/A	N/A

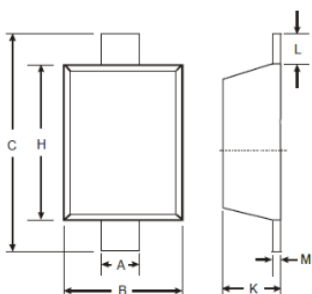
Deviations may exist between the specifications of the Diodes devices and the specifications of the competitor devices listed above. The customer is encouraged to carefully review the Diodes Inc. and competitor datasheets to verify the suitability of the Diodes device as a cross for any given competitor product. It is solely the responsibility of the customer to determine whether the Diodes device is suitable for any given application.



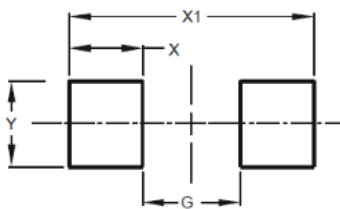
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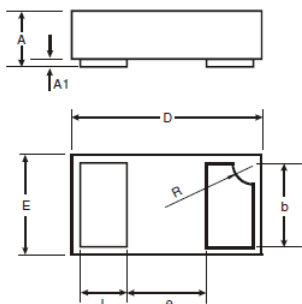
### Package Outline Dimensions & Suggested Pad Layout



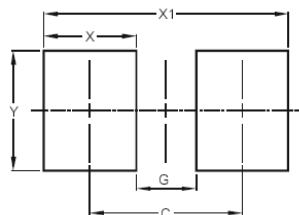
SOD523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		



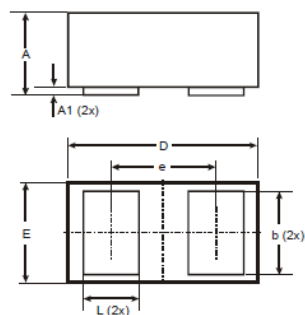
Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70



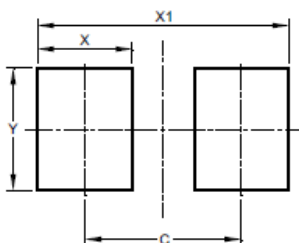
X2-DFN1006-2			
Dim	Min	Max	Typ
A	0.34	0.4	0.37
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.08	1.00
E	0.55	0.68	0.60
e	--	--	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			



Dimensions	Value (in mm)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70



X3-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.60	0.65	0.62
E	0.30	0.35	0.32
e	--	--	0.36
L	0.14	0.24	0.19
All Dimensions in mm			



Dimensions	Value (in mm)
C	0.38
X	0.23
X1	0.61
Y	0.30