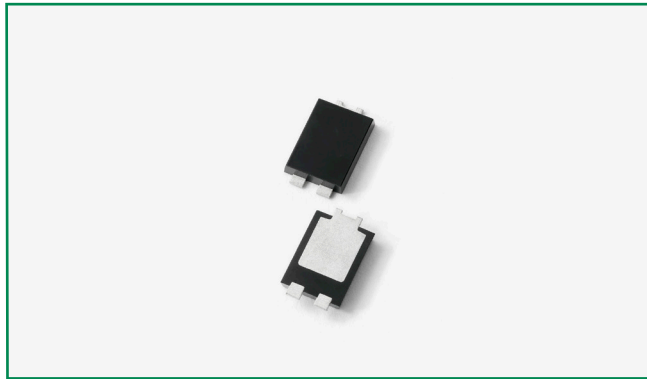
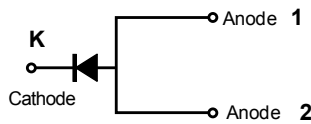


DST1040S



### Pin out



### Description

Littelfuse DST series Ultra Low  $V_F$  Schottky Barrier Rectifier is designed to meet the general requirements of commercial and industry applications by providing high temperature, low leakage and lower  $V_F$  products.

It is suitable for high frequency switching mode power supply, free-wheeling diodes and polarity protection diodes.

### Features

- Ultra low forward voltage drop
- High frequency operation
- MSL: Level 1 - unlimited
- High junction temperature capability
- Trench MOS Schottky technology
- Single die in TO-277B Package
- Pb-free E3 means 2nd level interconnect is Pb-free and the terminal finish material is tin(Sn) (IPC/ JEDEC J-STD-609A.01)

### Applications

- Switching mode power supply
- DC/DC converters
- Free-Wheeling diodes
- Polarity Protection Diodes

### Maximum Ratings

Parameters	Symbol	Test Conditions	Max	Unit
Peak Inverse Voltage	$V_{RWM}$	-	40	V
Average Forward Current (per device) *	$I_{F(AV)}$	50% duty cycle @ $T_M = 121^\circ\text{C}$ rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	150	A

\* Mounted on 30 mm x 30 mm pad areas aluminum PCB

### Electrical Characteristics

Parameters	Symbol	Test Conditions	Typ	Max	Unit
Forward Voltage Drop (per leg) *	$V_{F1}$	@5A, Pulse, $T_J = 25^\circ\text{C}$	0.43	-	V
		@10A, Pulse, $T_J = 25^\circ\text{C}$	0.49	0.57	
	$V_{F2}$	@5A, Pulse, $T_J = 125^\circ\text{C}$	0.33	-	
		@10A, Pulse, $T_J = 125^\circ\text{C}$	0.41	-	
Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.017	0.80	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	15	100	
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5V, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}$	639	-	pF

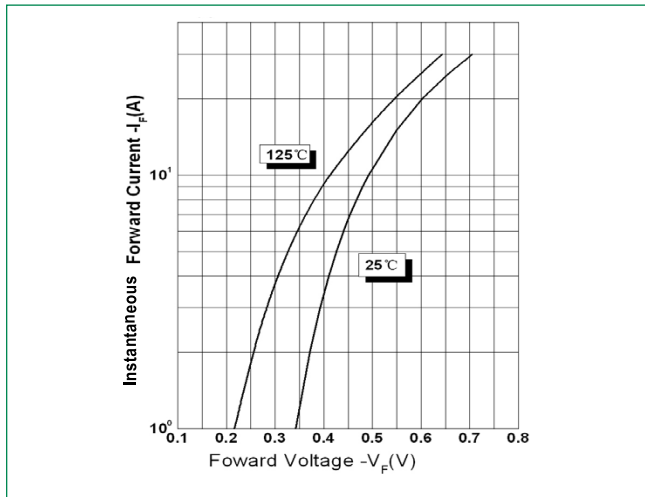
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

### Thermal-Mechanical Specifications

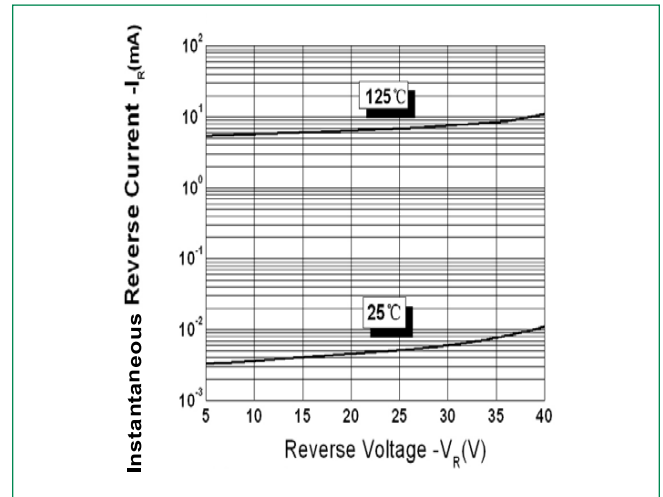
Parameters	Symbol	Test Conditions	Max	Unit
Junction Temperature	$T_J$		-55 to +150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C
Typical Thermal Resistance	$R_{thJM}$	DC operation	4	°C/W
Approximate Weight	wt		0.08	g
Case Style		TO-277B		

Mounted on 30 mm x 30 mm aluminum PCB; thermal resistance  $R_{thJM}$  - junction to mount

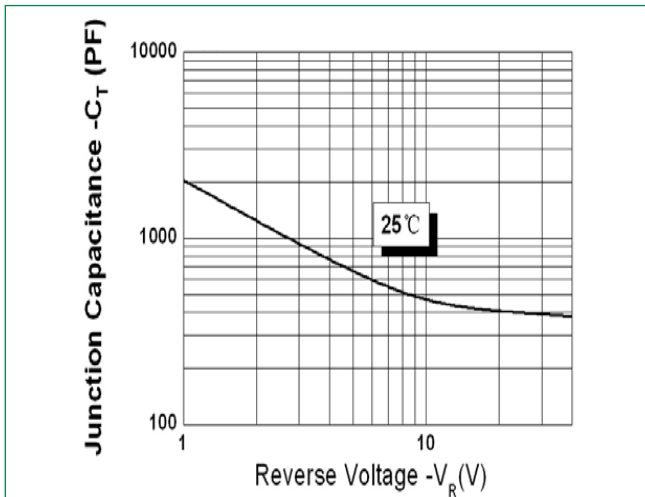
**Figure 1: Typical Forward Characteristics**



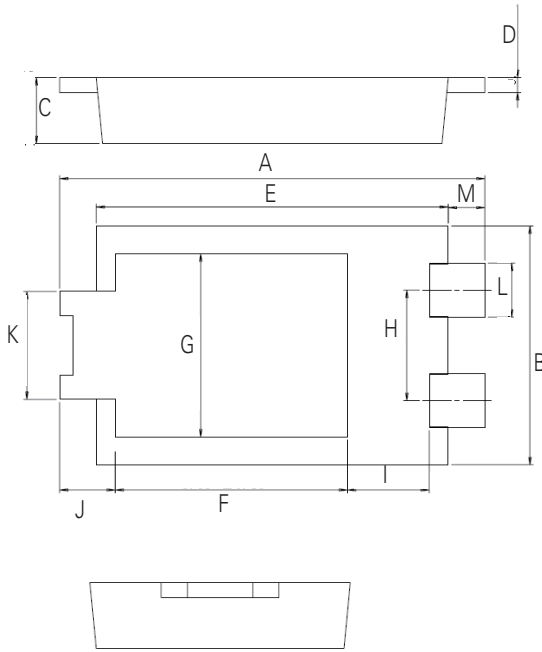
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**



### Dimensions-TO-277B

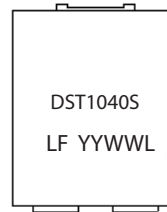


Symbol	Millimeters		
	Min	Typ	Max
<b>A</b>	6.30	6.50	6.70
<b>B</b>	3.88	3.98	4.08
<b>C</b>	0.95	1.10	1.25
<b>D</b>	0.20	0.25	0.30
<b>E</b>	5.28	5.38	5.48
<b>F</b>	3.40	3.55	3.70
<b>G</b>	2.90	3.05	3.20
<b>H</b>	1.74	1.84	1.94
<b>I</b>	1.10	1.25	1.40
<b>J</b>	-	0.85	-
<b>K</b>	1.70	1.80	1.90
<b>L</b>	0.85	0.90	0.95
<b>M</b>	-	0.56	-

### Packing Options

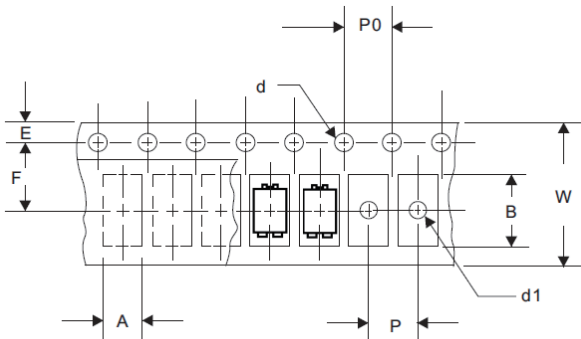
Part Number	Marking	Packing Mode	M.O.Q
DST1040S	DST1040S	5000pcs / Reel	5000

### Part Numbering and Marking System



**DST** = Device Type  
**10** = Forward Current (10A)  
**40** = Reverse Voltage (40V)  
**S** = Package Type  
**LF** = Littelfuse  
**YY** = Year  
**WW** = Week  
**L** = Lot Number

### Carrier Tape & Reel Specification



Symbol	Millimeters	
	Min	Max
<b>A</b>	4.28	4.48
<b>B</b>	6.80	7.00
<b>d</b>	1.40	1.60
<b>d1</b>	-	1.50
<b>E</b>	1.65	1.85
<b>F</b>	5.40	5.60
<b>P</b>	7.90	8.10
<b>P0</b>	3.90	4.10
<b>W</b>	11.70	12.30

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