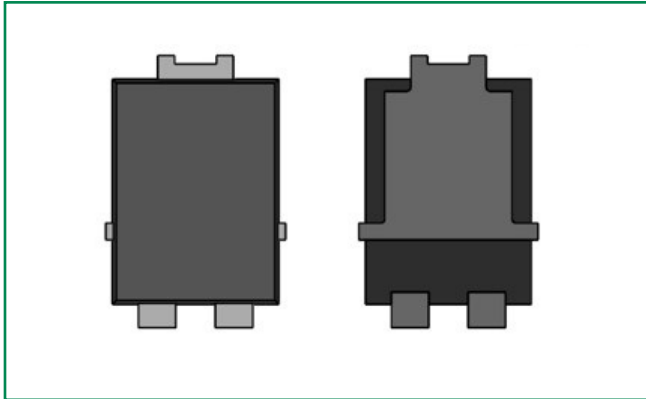
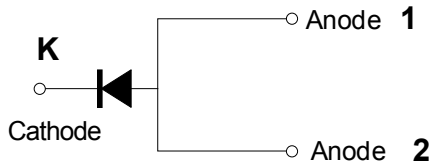


### DST580S-A



#### Pin out



#### Description

Littelfuse DST series Ultra Low  $V_F$  Schottky Barrier Rectifier is designed to meet the general requirements of commercial and industrial 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

- High reliability application and AEC-Q101 qualified
- 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	$V_{RWM}$	-	80	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_L = 125^\circ\text{C}$ rectangular wave form	5	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine pulse	80	A

#### Electrical Characteristics

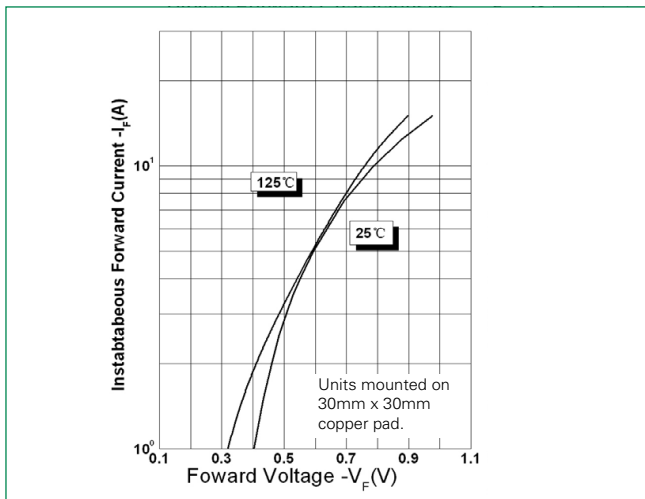
Parameters	Symbol	Test Conditions	Typ	Max	Unit
Forward Voltage Drop*	$V_{F1}$	@2.5A, Pulse, $T_J = 25^\circ\text{C}$	0.48	-	V
		@5A, Pulse, $T_J = 25^\circ\text{C}$	0.59	0.72	
	$V_{F2}$	@2.5A, Pulse, $T_J = 125^\circ\text{C}$	0.45	-	
		@5A, Pulse, $T_J = 125^\circ\text{C}$	0.59	0.66	
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.011	0.4	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	4	15	
Junction Capacitance	$C_T$	@ $V_R = 5V, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}$	245	-	pF

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

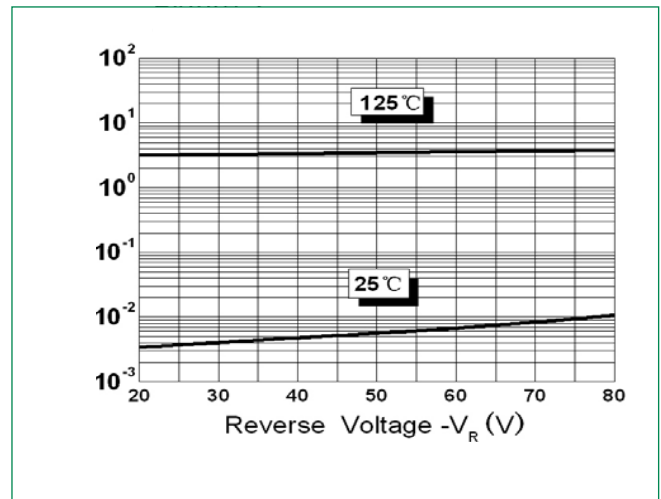
**Thermal-Mechanical Specifications**

Parameters	Symbol	Test Conditions	Max	Unit
Junction Temperature	$T_J$		-55 to +150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C
Maximum Thermal Resistance Junction to Ambient	$R_{thJA}$	DC operation	75	°C/W
Maximum Thermal Resistance Junction to Lead	$R_{thJL}$		4	°C/W
Approximate Weight	wt		0.08	g
Case Style	TO-277B			

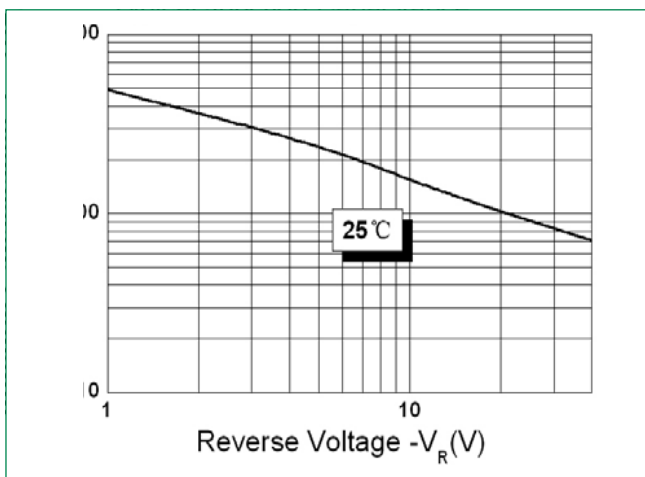
**Figure 1: Typical Forward Characteristics**



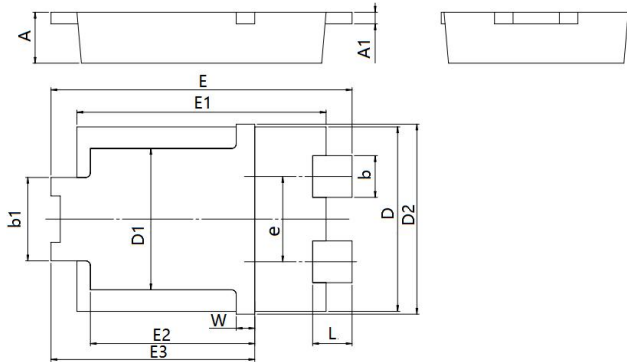
**Figure 2: Typical Reverse Characteristics**



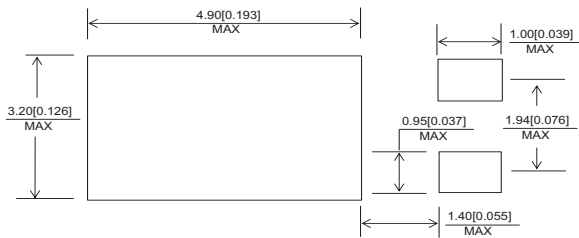
**Figure 3: Typical Junction Capacitance**



**Dimensions-TO-277B**



**Mounting Pad Layout**



Symbol	Millimeters		Inches	
	Min	Max	Min.	Max.
<b>A</b>	0.95	1.25	0.037	0.049
<b>A1</b>	0.20	0.30	0.008	0.012
<b>b</b>	0.85	0.95	0.033	0.037
<b>b1</b>	1.70	1.90	0.067	0.075
<b>D</b>	3.88	4.08	0.153	0.161
<b>D1</b>	2.90	3.20	0.114	0.126
<b>D2</b>	4.25	-	0.167	-
<b>e</b>	1.74	1.94	0.069	0.076
<b>E</b>	6.30	6.70	0.248	0.264
<b>E1</b>	5.28	5.48	0.208	0.216
<b>E2</b>	3.40	3.70	0.134	0.146
<b>E3</b>	4.20	4.60	0.165	0.181
<b>L</b>	0.65	1.05	0.025	0.041
<b>W</b>	0.25	0.55	0.010	0.022

**Part Numbering and Marking System**

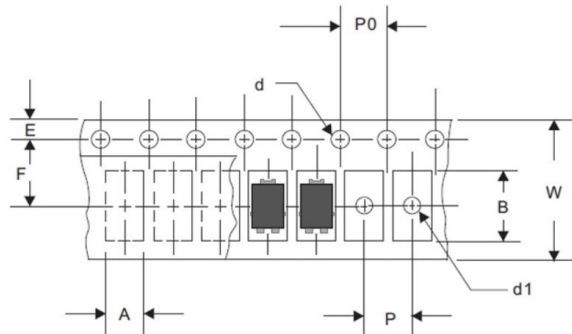


- DST = Device Type
- 5 = Forward Current (5A)
- 80 = Reverse Voltage (80V)
- S = Package Type
- A = AEC-Q101 qualified device
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

**Packing Options**

Part Number	Marking	Packing Mode	M.O.Q
DST580S-A	DST580S-A	5000 pcs / Reel	20000

**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

**Disclaimer Notice**

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.



Part of:

