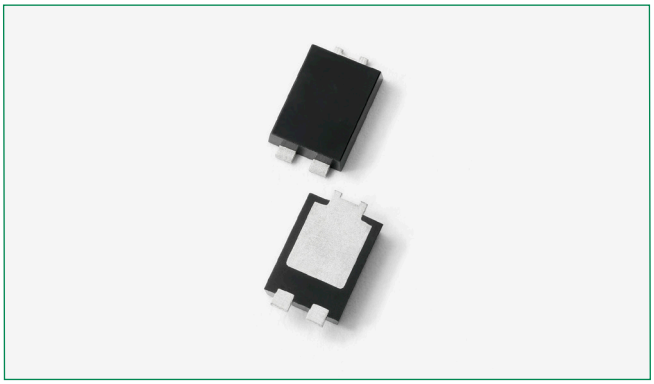
Littelfuse
Expertise Applied | Answers Delivered

Schottky Barrier Rectifier

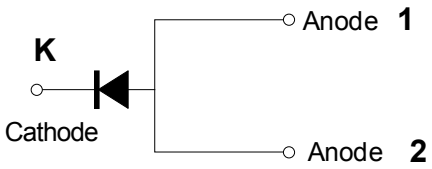
DST580S, 5A, 80V, TO-277B, Single

DST580S-A

HF RoHS



Pin out



Description

Littelfuse DST series Ultra Low V_F Schottky Barrier Rectifier is designed to meet the general requirements of automotive 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 °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 °C	0.48	-	V
		@5A, Pulse, T_J = 25 °C	0.59	0.72	
	V_{F2}	@2.5A, Pulse, T_J = 125 °C	0.45	-	
		@5A, Pulse, T_J = 125 °C	0.59	0.66	
Reverse Current*	I_{R1}	@V_R = rated V_R, T_J = 25 °C	0.011	0.4	mA
	I_{R2}	@V_R = rated V_R, T_J = 125 °C	4	15	
Junction Capacitance	C_T	@V_R = 5V, T_C = 25 °C, f_{SIG} = 1MHz	245	-	pF

* Pulse Width < 300µs, Duty Cycle <2%

Revised: TK.10/14/21

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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

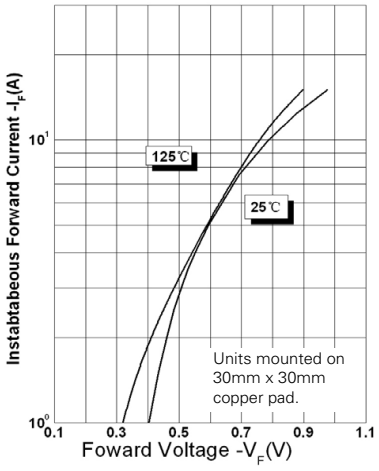


Figure 2: Typical Reverse Characteristics

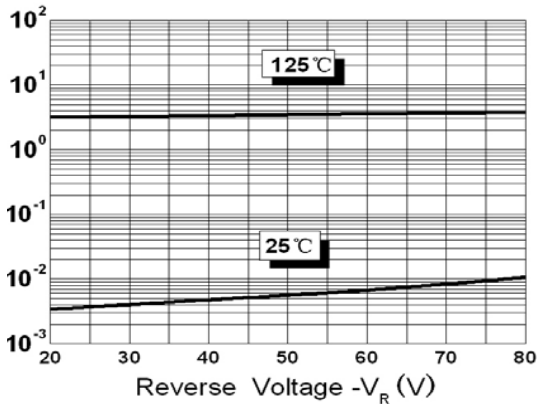
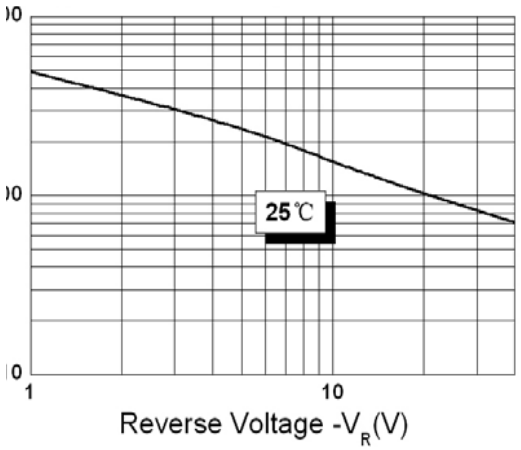


Figure 3: Typical Junction Capacitance



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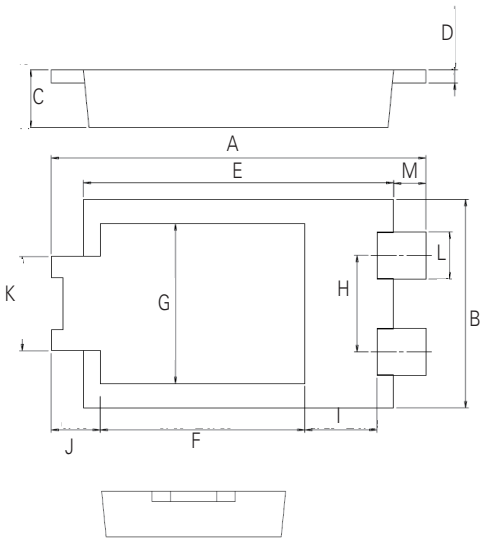
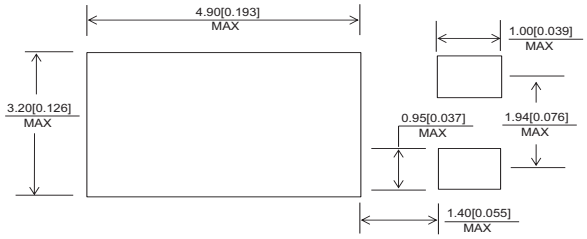
Dimensions-TO-277B



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

Mounting Pad Layout



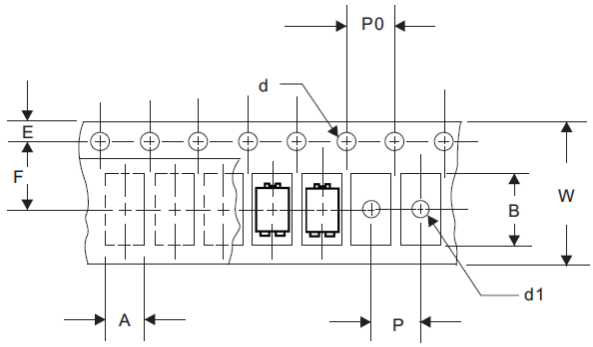
Part Numbering and Marking System

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	5000pcs / Reel	5000

Carrier Tape & Reel Specification



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

Revised: TK.10/14/21

Mouser Electronics

Authorized Distributor

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Littelfuse:
DST580S-A