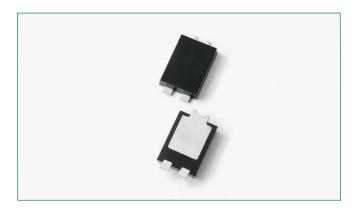
Schottky Barrier Rectifier DST1040S-A, 10A, 45V, T0-277B, Single

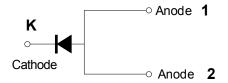
D3110403-A, 10A, 43V, 10-217B, Sillyle

DST1045S-A





Pin out



Description

Littelfuse DST series Ultra Low VF Schottky Barrier Rectifier is designed to meet the general requirements of automotive applications by providing high temperature, low leakage and low VF products.

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

Features

- Ultra low forward voltage drop
- Schottky technology
- High frequency operation
- Single die in TO-277B Package
- High junction temperature capability
- High reliability application and AEC-Q101 qualified
- Trench MOS Barrier

Applications

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

Maximum Ratings

Parameters	Symbol	Test Conditions	Max	Unit
Peak Inverse Voltage	V _{RWM}	-	45	V
Average Forward Current *	I _{F(AV)}	50% duty cycle @T _L = 125 °C rectangular wave form	10	А
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	150	А

^{*} Mounted on 30 mm x 30 mm pad areas aluminum PCB

Electrical Characteristics

Parameters	Symbol	Test Conditions	Тур	Max	Unit
Forward Voltage Drop *	V _{F1}	@5A, Pulse, T _J = 25 °C	0.43	0.51	V
		@10A, Pulse, T _J = 25 °C	0.49	0.57	
	V _{F2}	@5A, Pulse, T _J = 125 °C	0.32	0.43	
		@10A, Pulse, T _J = 125 °C	0.41	0.50	
Reverse Current *	I _{R1}	$@V_R = rated V_{R,T_J} = 25 \text{ °C}$	0.003	0.019	mA
	I _{R2}	$@V_R = \text{rated } V_{R_i} T_J = 125 ^{\circ}\text{C}$	5	15	IIIA
Junction Capacitance	C_{T}	$@V_R = 5V, T_C = 25 ^{\circ}C, f_{SIG} = 1MHz$	656	-	pF

^{*} Pulse Width < 300µs, 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	
Thermal Resistance Junction to Ambient	R _{eJA}	DC operation	75	°C/W	
Typical Thermal Resistance Junction to Lead	R _{eJL} *	DC operation	3.5	°C/W	
Approximate Weight	wt	-	0.08	g	
Case Style	TO-277B				

⁽¹⁾ Free air, mounted on recommended copper pad area; thermal resistance $R_{\Theta^{JA}}$ - junction to ambient

Figure 1: Forward Current Derating Curve

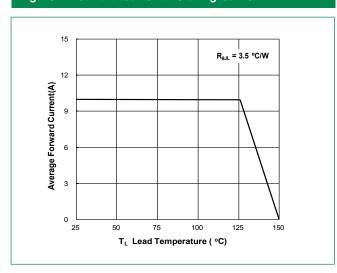


Figure 2: Forward Power Loss Characteristics

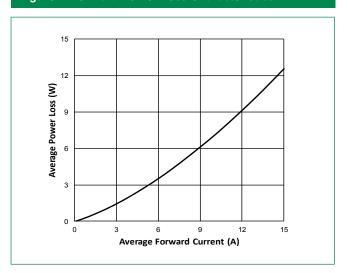


Figure 3: Typical Instantaneous Forward Voltage Characteristics

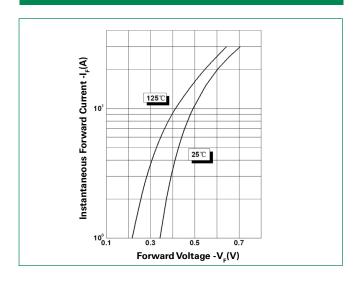
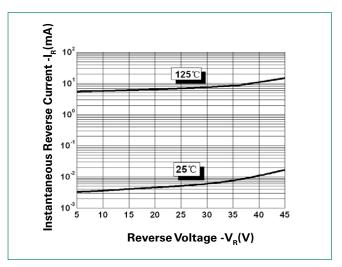


Figure 4: Typical Reverse Characteristics

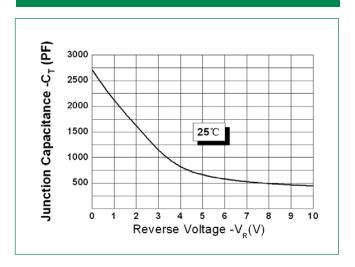


⁽²⁾ Mounted on 30 mm x 30 mm pad areas aluminum PCB; thermal resistance R_{eu} - junction to lead

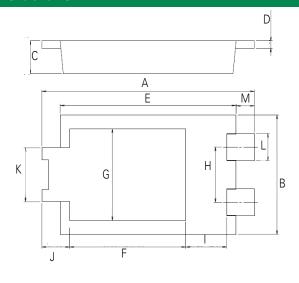
^{*}Lead temperature monitored at the cathode pin



Figure 5: Typical Junction Capacitance

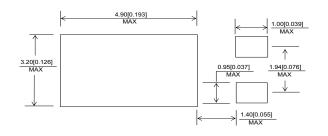


Dimensions-TO-277B



Symbol	Millimeters			
Cymbol	Min	Тур	Max	
А	6.30	6.50	6.70	
В	3.88	3.98	4.08	
С	0.95	1.10	1.25	
D	0.20	0.25	0.30	
Е	5.28	5.38	5.48	
F	3.40	3.55	3.70	
G	2.90	3.05	3.20	
Н	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 = CompnentType 10 = Forward Current (10A)

45 = Reverse Voltage (45V)

S = Package Type

A = AEC-Q101 Qualified Compnent

LF = Littelfuse YY = Year WW = Week

= Lot Number

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