

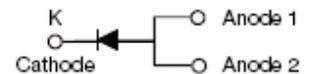
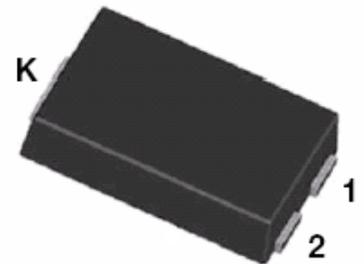
## ST1045S SCHOTTKY RECTIFIER

### Applications:

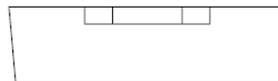
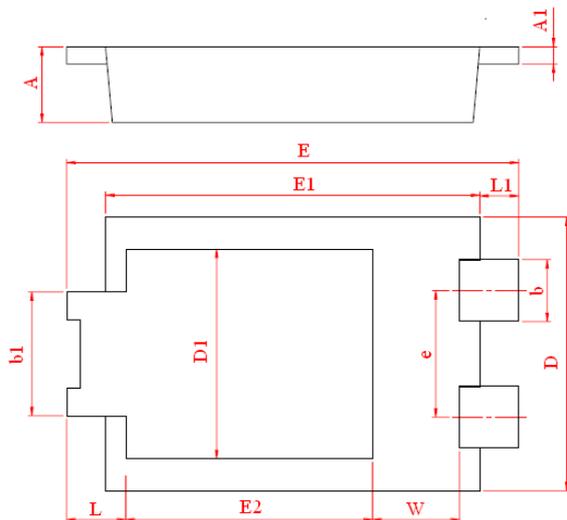
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 150 °C T<sub>J</sub> operation
- Center tap configuration
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request
- This is an AEC-Q101 qualified device



### Mechanical Dimensions: In mm



Dim.	TO-277B			
	Min.	Max.	Min.	Max.
A	0.95	1.25	0.037	0.049
A1	0.20	0.30	0.008	0.012
b	0.85	0.95	0.033	0.037
b1	1.70	1.90	0.067	0.075
D	3.88	4.08	0.153	0.161
D1	2.90	3.20	0.114	0.126
e	1.74	1.94	0.069	0.076
E	6.30	6.70	0.248	0.264
E1	5.28	5.48	0.208	0.216
E2	3.40	3.70	0.134	0.146
L	0.70	1.00	0.028	0.039
L1	0.41	0.71	0.016	0.028
W	1.10	1.40	0.043	0.055
	In mm		In inch	

### TO-277B(JK)

**Marking Diagram:**



Where XXXXX is YYWWL

- S = Device Type
- T = Ultralow VF
- 10 = Forward Current (10)
- 45 = Reverse Voltage (45V)
- S = Package type
- YY = Year
- WW = Week
- L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information:**

Device	Package	Shipping
ST1045S	TO-277B (Pb-Free)	5000pcs/ reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	45	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 80\text{ }^\circ\text{C}$ rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	150	A



**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.40	0.51	V
		@ 10A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.46	0.57	
	$V_{F2}$	@ 5A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.30	0.43	V
		@ 10A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.37	0.50	
Reverse Current (per leg)	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	0.15	0.80	mA
Reverse Current (per leg) *	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	78	100	mA
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	579	-	pF

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

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Ambient	$R_{\theta JA}$	DC operation	75	$^\circ\text{C/W}$
Approximate Weight	wt	-	0.08	g
Case Style	TO-227B			

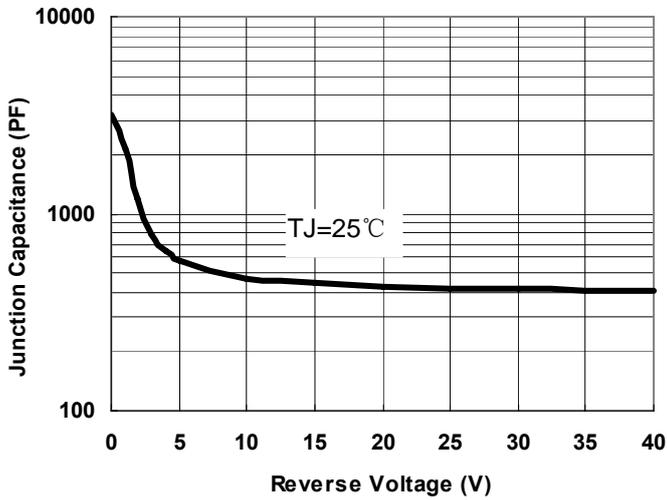


Fig.1-Typical Junction Capacitance

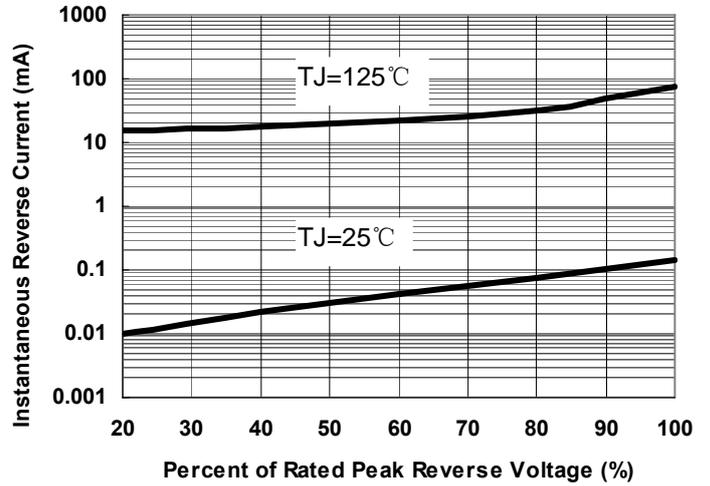


Fig.2-Typical Reverse Characteristics

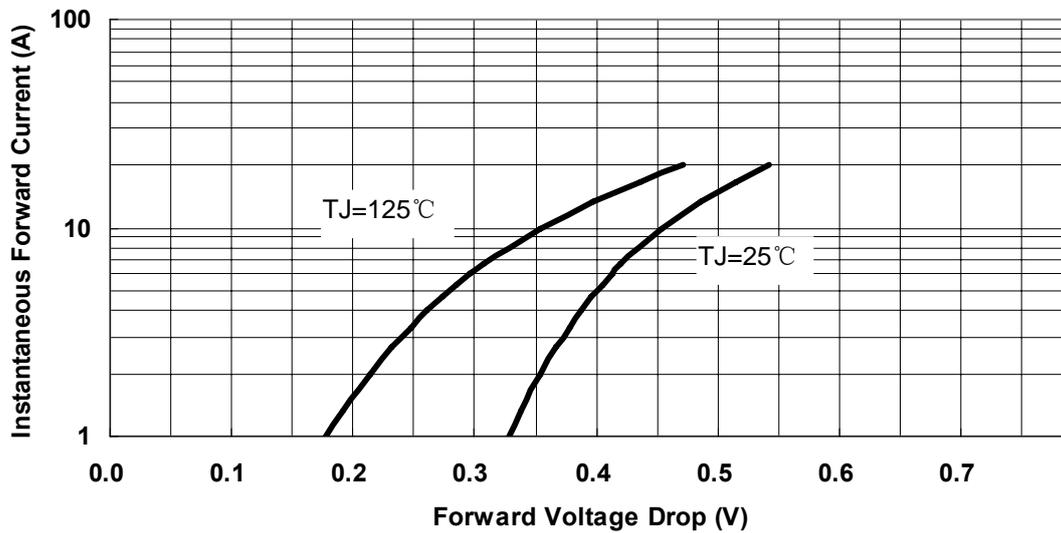


Fig.3-Typical Instantaneous Forward Voltage Characteristics



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