

## ST860S SCHOTTKY RECTIFIER



### Features

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Terminals finish: 100% Pure Tin
- “-A” is an AEC-Q101 qualified device
- This is a Halogen Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

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

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>L</sub> =125°C, rectangular wave form	8	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3ms, Half Sine pulse, T <sub>J</sub> = 25 °C	140	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 4A, Pulse, T <sub>J</sub> = 25 °C	0.42	-	V
		@ 8A, Pulse, T <sub>J</sub> = 25 °C	0.50	0.61	
	V <sub>F2</sub>	@ 4A, Pulse, T <sub>J</sub> = 125 °C	0.34	-	V
		@ 8A, Pulse, T <sub>J</sub> = 125 °C	0.44	0.55	
Reverse Current*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.02	0.6	mA
Reverse Current*	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	10	25	mA
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	502	-	pF

\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	°C
Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	-	3.5	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	-	70	°C/W
Approximate Weight	wt	-	0.08	g

**Ratings and Characteristics Curves**

Figure 1  
Typical Forward Characteristics

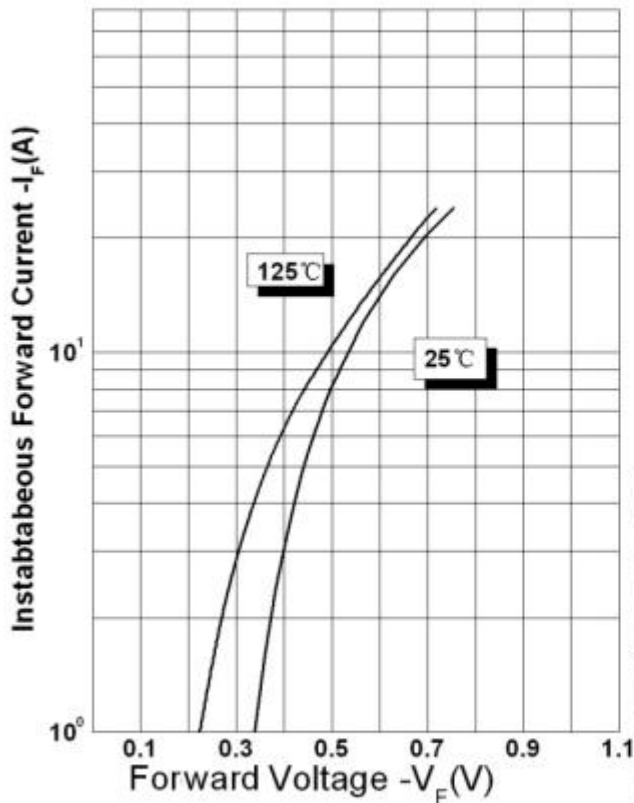


Figure 2  
Typical Reverse Characteristics

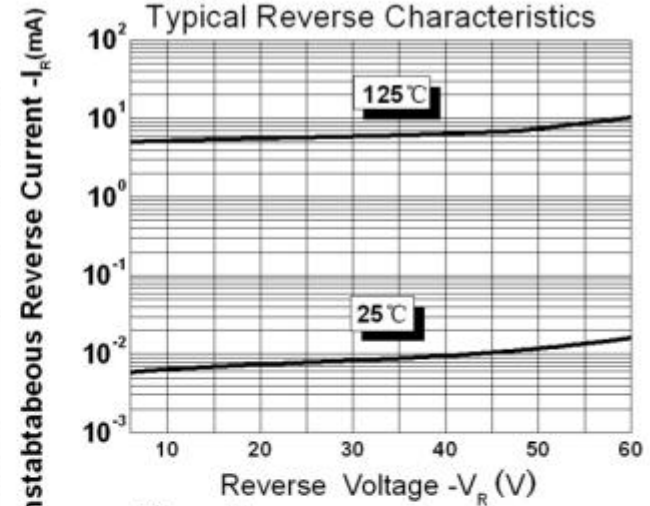
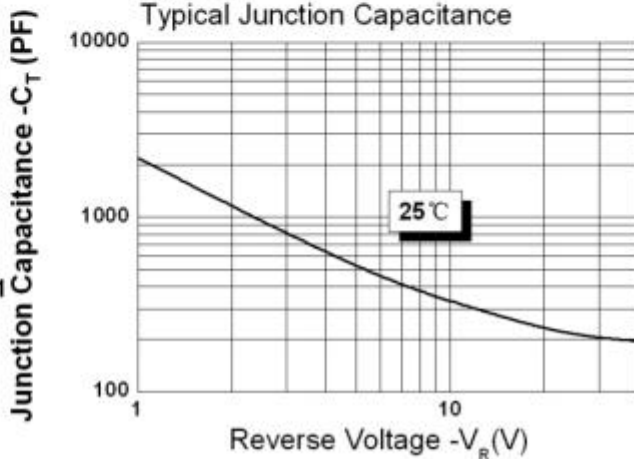
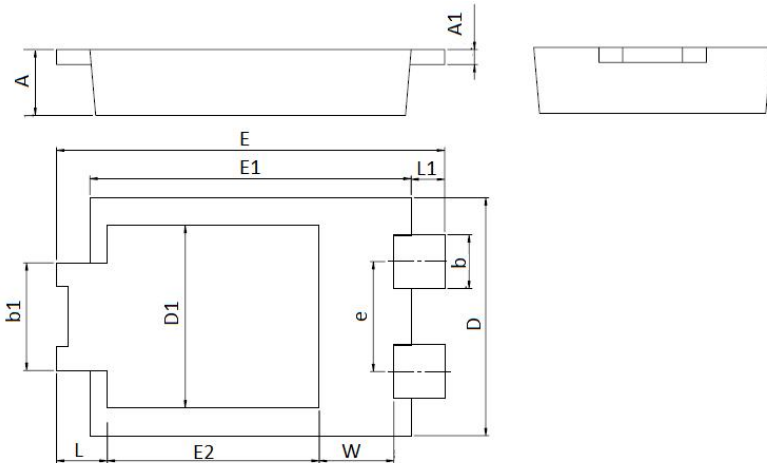


Figure 3  
Typical Junction Capacitance

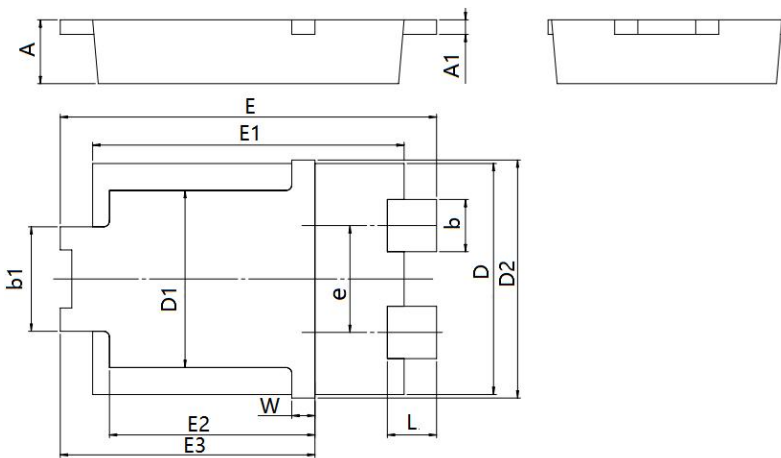


**Mechanical Dimensions TO-277B**



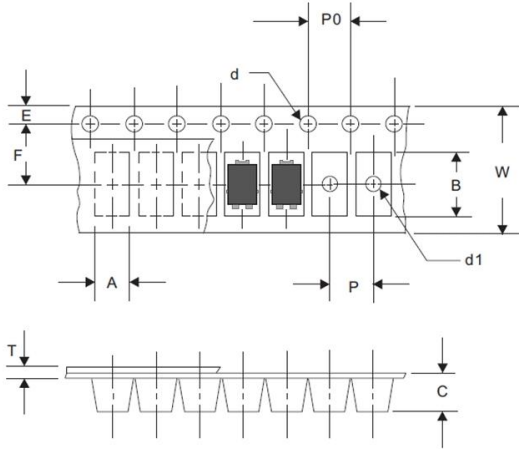
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.25	0.037	0.049
A1	0.20	0.30	0.008	0.012
b	0.85	0.95	0.033	0.037
b1	1.70	1.90	0.067	0.075
D	3.88	4.08	0.153	0.161
D1	2.90	3.20	0.114	0.126
e	1.74	1.94	0.069	0.076
E	6.30	6.70	0.248	0.264
E1	5.28	5.48	0.208	0.216
E2	3.40	3.70	0.134	0.146
L	0.70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

**Mechanical Dimensions TO-277B(New)**



SYMBOL	Millimeters		Inches	
	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
D2	4.25	-	0.167	-
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
E3	4.20	4.60	0.165	0.181
L	0.65	1.05	0.025	0.041
W	0.25	0.55	0.010	0.022

Notes: New Mechanical Dimensions is performed from date code 2236X.

**Carrier Tape Specification TO-277B**


SYMBOL	Millimeters	
	Min.	Max.
A	4.28	4.48
B	6.80	7.10
C	1.30	1.50
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
T	0.24	0.44
W	11.70	12.30

**Ordering Information**

Device	Package	Shipping
ST860S	TO-277B(Pb-Free)	5000pcs/ reel
ST860STR	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.

**Marking Diagram**


Where XXXXX is YYWWL

- ST = Device Type
- 8 = Forward Current (8A)
- 60 = Reverse Voltage (60V)
- S = Package type
- YY = Year
- WW = Week
- L = Lot Number

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

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