THE DATASHEET OF

ST12100S

Technical Data
Data Sheet N1041, Rev. E

RoHS HF

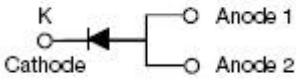
ST12100S SCHOTTKY RECTIFIER

TO-277B

Features

- 150°C T_J operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Trench MOS Schottky technology
- "-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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	100	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @T_C=80°C, rectangular wave form	12	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse, T_J = 25 °C	200	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 5A, Pulse, T_J = 25 °C @ 12A, Pulse, T_J = 25 °C	0.50 0.68	- 0.70	V
	V_{F2}	@ 5A, Pulse, T_J = 125 °C @ 12A, Pulse, T_J = 125 °C	0.47 0.61	- 0.64	V
Reverse Current*	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.02	0.3	mA
Reverse Current*	I_{R2}	@V_R = rated V_R T_J = 125 °C	28	50	mA
Junction Capacitance	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	600	-	pF

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

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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

Figure1
Typical Forward Characteristics

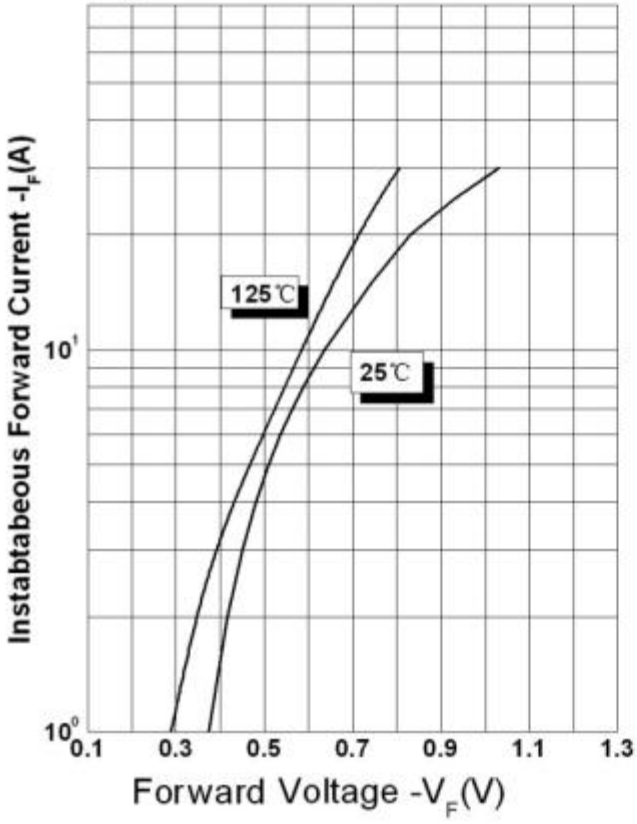


Figure 2
Typical Reverse Characteristics

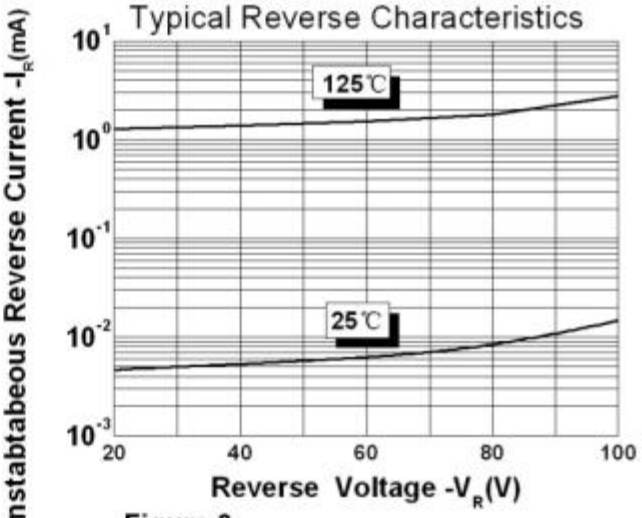
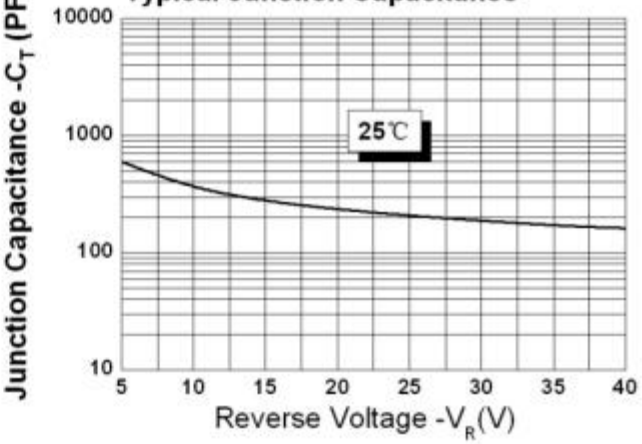


Figure 3
Typical Junction Capacitance



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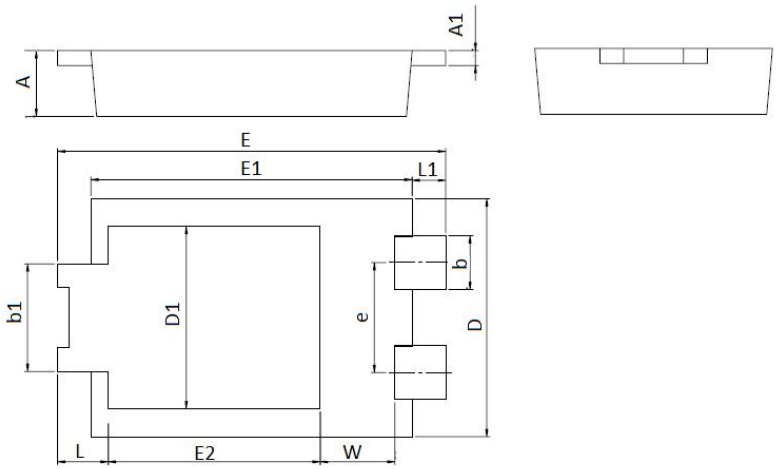
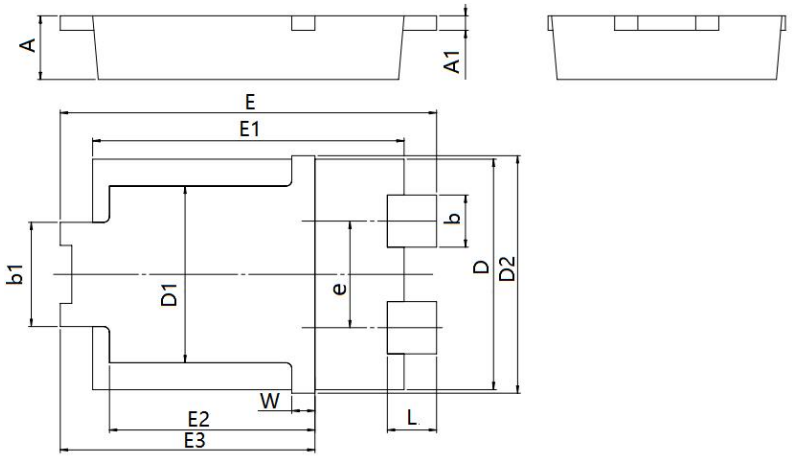
Mechanical Dimensions TO-277B



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	4.00	4.25	0.157	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.

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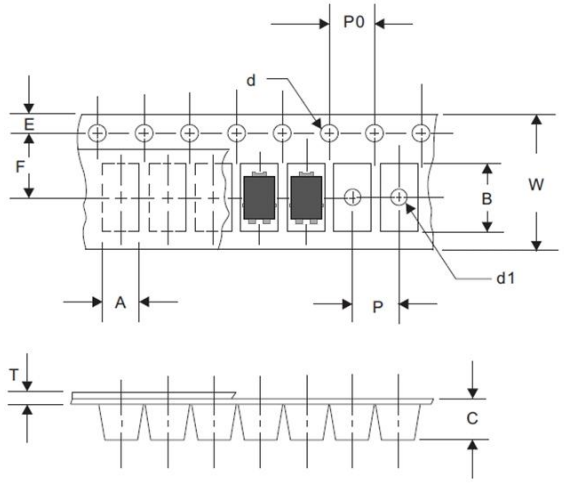
Carrier Tape Specification TO-277B



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
ST12100S	TO-277B(Pb-Free)	5000pcs/ reel
ST12100STR	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

T = Device Type
12 = Forward Current (12A)
100 = Reverse Voltage (100V)
S = Package type
YY = Year
WW = Week
L = Lot Number

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

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