

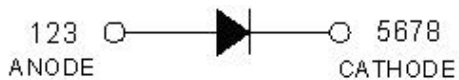
## ST2050DJF SCHOTTKY RECTIFIER



### Features

- Ultralow forward voltage drop
- Very small conduction losses
- Negligible switching losses
- Extremely fast switching
- Low thermal resistance
- Avalanche capability specified
- Thin package: 1 mm
- This is a Pb – 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	$V_{RRM}$ $V_{RWM}$ $V_R$	-	50	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=80^\circ\text{C}$ , rectangular wave form	20	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse, $T_C = 25^\circ\text{C}$	250	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 10A, Pulse, $T_J = 25^\circ\text{C}$	0.47	-	V
		@ 20A, Pulse, $T_J = 25^\circ\text{C}$	0.52	0.65	V
	$V_{F2}$	@ 10A, Pulse, $T_J = 125^\circ\text{C}$	0.38	-	V
		@ 20A, Pulse, $T_J = 125^\circ\text{C}$	0.48	0.60	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	0.03	4	mA
Reverse Current*	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	30	180	mA
Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	1300	-	pF

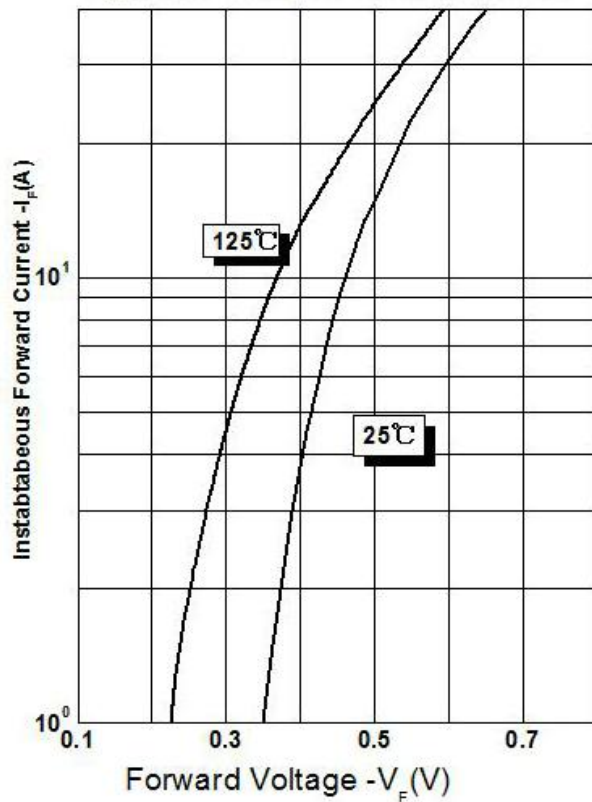
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

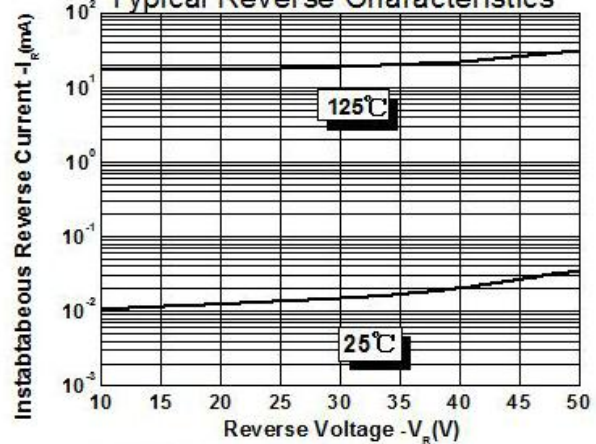
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	DC operation	2.5	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	0.095	g

**Ratings and Characteristics Curves**

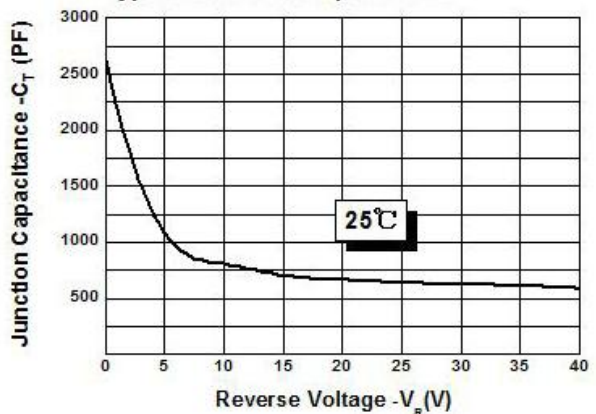
**Figure 1**  
Typical Forward Characteristics

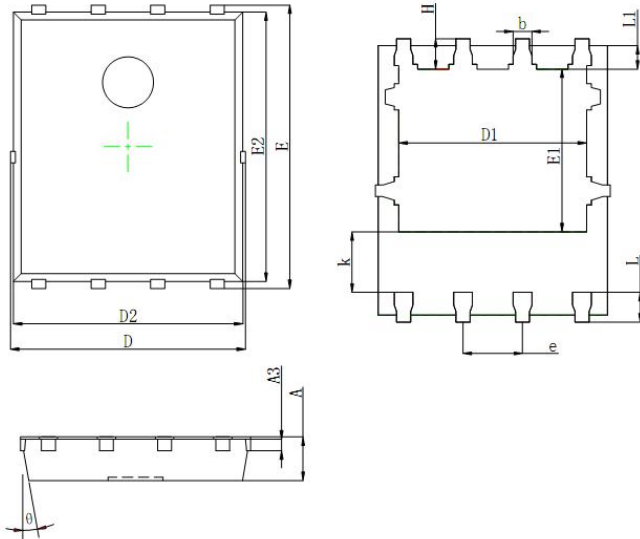


**Figure 2**  
Typical Reverse Characteristics

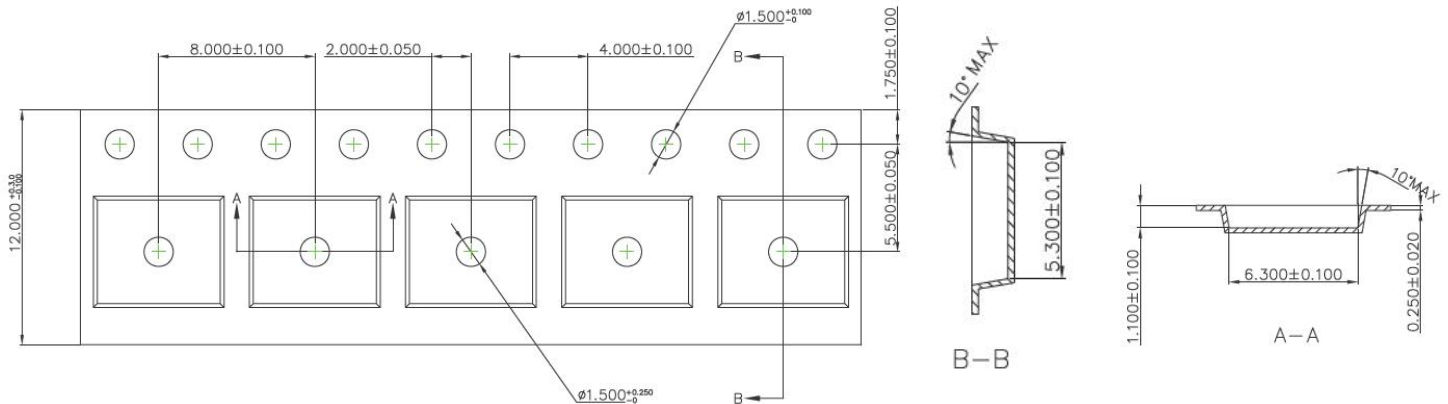


**Figure 3**  
Typical Junction Capacitance



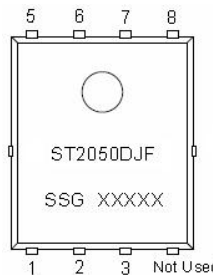
**Mechanical Dimensions PDFNWB5×6-8L**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	5.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270 TYP.		0.050 TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
Θ	10°	12°	10°	12°

**Carrier Tape Specification PDFNWB5×6-8L(mm)**

**Ordering Information**

Device	Package	Shipping
ST2050DJF	PDFNWB5×6-8L (Pb-Free)	3000 pcs / 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
- 20 = Forward Current (20A)
- 50 = Reverse Voltage (50)
- DJF = Package type
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

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