

Single Ultra Low VF Schottky Rectifier

FEATURES AND BENEFITS

- Low power loss, high efficiency operation
- Low forward voltage drop
- Fast switching capability
- High forward surge capability
- Excellent High Temperature Stability

MECHANICAL DATA

- Epoxy : UL94 V-0 rated flame retardant
- Case: TOLL Package
- Terminals: Matte Tin annealed over copper

Primary Characteristic	
I_O	40A
V_{RRM}	150V
I_{FSM}	600A
V_F Typical= 5A, $T_J=125^\circ\text{C}$	0.40V
T_{Jmax}	150°C



Maximum Ratings (Ta=25°C unless otherwise specified)						
Characteristics			Symbol	Value		Unit
Peak Repetitive Reverse Voltage			V _{RRM}	150		V
Working Peak Reverse Voltage			V _{RWM}	150		V
DC Blocking Voltage			V _{DC}	150		V
RMS Reverse Voltage			V _{RMS}	105		V
Average Forward Rectified Current (per diode)			I _O	40		Amps
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)			I _{FSM}	600		Amps
Electrical Characteristics (Ta=25°C unless otherwise specified)						
Characteristics			Symbol	Typ.	Max.	Unit
Forward Voltage Drop ¹⁾	IF=3A	Ta=25°C	V _F	0.46	0.50	V
	IF=5A	Ta=25°C	V _F	0.52	0.56	V
	IF=10A	Ta=25°C	V _F	0.66	0.70	V
	IF=40A	Ta=25°C	V _F	0.76	0.82	V
	IF=3A	Ta=125°C	V _F	0.33	0.37	V
	IF=5A	Ta=125°C	V _F	0.40	0.44	V
	IF=10A	Ta=125°C	V _F	0.52	0.56	V
	IF=40A	Ta=125°C	V _F	0.58	0.64	V
Reverse Current ²⁾	VR=150V	Ta=25°C	I _R	60	180	μA
	VR=150V	Ta=125°C	I _R	15	45	mA
THERMAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)						
Characteristics			Symbol	Value		Unit
Typical Thermal Resistance, junction to case		TOLL	R _{θJC}	0.45		°C/W
Operating Temperature Range (in DC Mode) and Storage Temperature Range			T _J , T _{STG}	-65 to +150		°C

Notes (1): Pulse test: 300 μs pulse width, 1% duty cycle.

Notes (2): Pulse width $\leq 40\text{ms}$

Notes (3): FR-4 PCB, 2oz copper. Minimum recommended pad layout

RATINGS AND CHARACTERISTICS CURVES

Fig 1. Typical Forward Characteristics

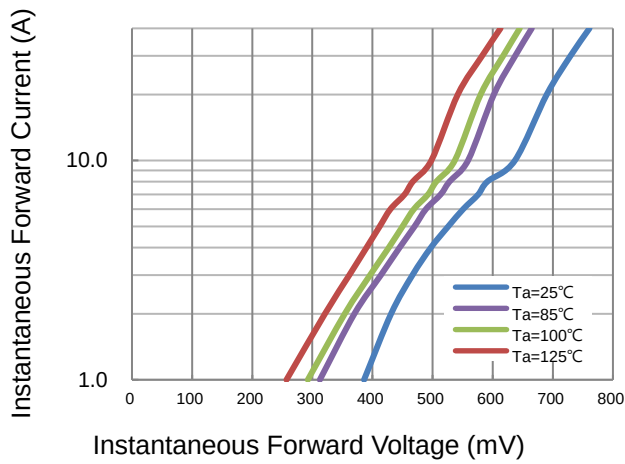


Fig 2. Typical Reverse Characteristics

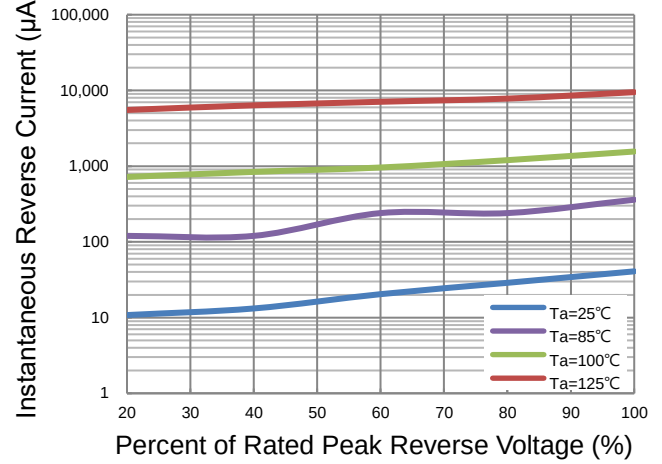


Fig 3. Typical Forward Current Derating Curve

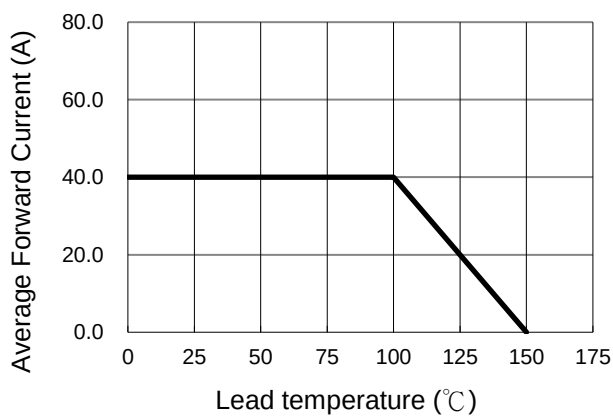
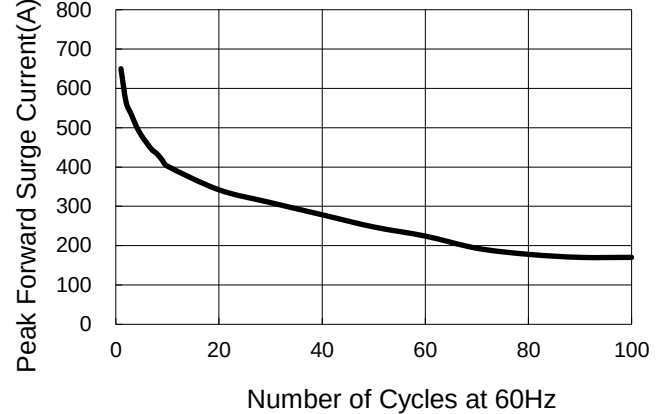
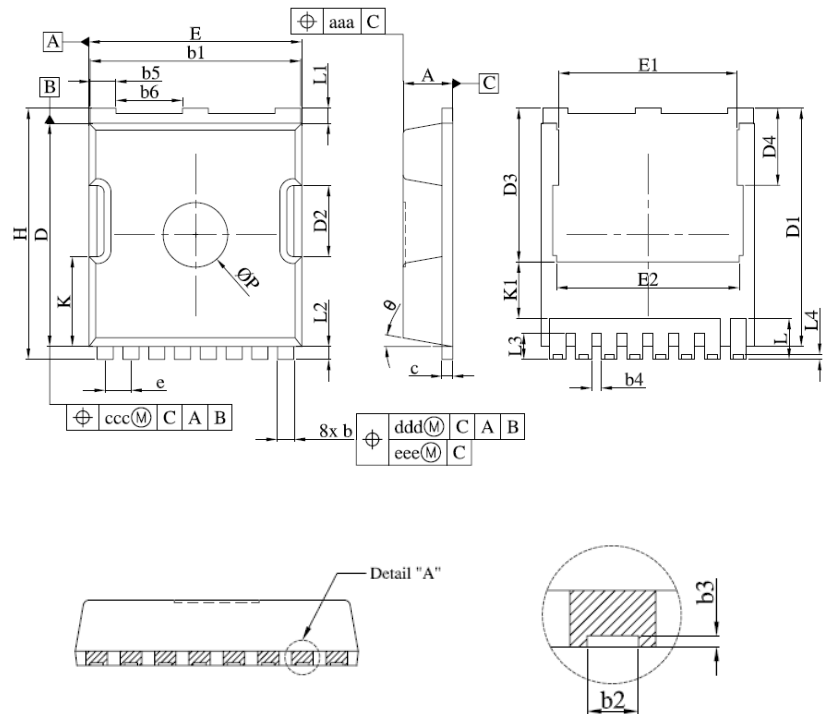


Fig 4. Non-repetitive Forward Surge Current

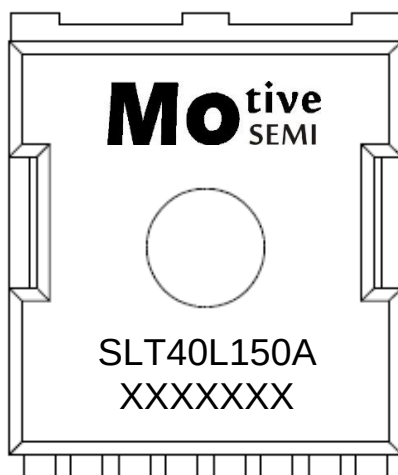


Package Outline Dimensions (in millimeters)

TOLL				
SYMBOL	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	2.20	2.40	0.087	0.094
b	0.70	0.90	0.028	0.035
b1	9.70	9.90	0.382	0.390
b2	0.36	0.55	0.014	0.022
b3	0.05	0.35	0.002	0.014
b4	0.30	0.50	0.012	0.020
b5	1.10	1.30	0.043	0.051
b6	3.00	3.20	0.118	0.126
c	0.40	0.60	0.016	0.024
D	10.28	10.55	0.405	0.415
D1	10.98	11.18	0.432	0.440
D2	3.20	3.40	0.126	0.134
D3	7.00	7.30	0.276	0.287
D4	3.44	3.74	0.135	0.147
e	1.10	1.30	0.043	0.051
E	9.80	10.00	0.386	0.394
E1	8.20	8.40	0.323	0.331
E2	8.35	8.65	0.329	0.341
H	11.50	11.85	0.453	0.467
K	4.08	4.28	0.161	0.169
K1	2.45	-	0.096	-
L	1.60	2.10	0.063	0.083
L1	0.50	0.90	0.020	0.035
L2	0.50	0.70	0.020	0.028
L3	1.00	1.30	0.039	0.051
L4	0.13	0.33	0.005	0.013
P	2.85	3.15	0.112	0.124
θ	10° REF.			
aaa	0.20		0.008	
ccc	0.20		0.008	
ddd	0.25		0.010	
eee	0.20		0.008	



Marking Information



mO-SEMI
SAT40L150
XXXXXXX
*A=TOLL

=Series Name
=Part Number Marking Code
=Product Tracking Code
=Single TOLL