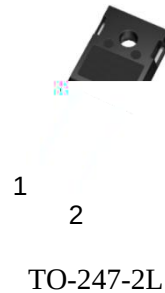


- 1.2kv schottky Rectifier
- Zero Reverse Recovery Current / Zero forward recovery
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Low forward voltage
- Positive Temperature Coefficient on V_F
- Increased Creepage/Clearance Distance
- Automotive Qualified (AEC-Q101)



- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- High Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway



- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drives
- AC/DC converters

		($T_C = 135^\circ\text{C}$)			
S1D030120C	1200V	43A	157nC	S1D030120C	TO-247-2L

(Tc = 25°C unless otherwise specified)

V _{RRM}	Repetitive Peak Reverse Voltage	1200	V	-	
V _{RSM}	Surge Peak Reverse Voltage	1300	V	-	
V _R	DC Peak Reverse Voltage	1200	V	-	
I _F	Continuous Forward Current	88 43 30	A	Tc = 25°C Tc = 135°C Tc = 152°C	Fig.7
I _{FSM}	Non-Repetitive Peak Forward Surge Current	260	A	Tc = 25 tp = 10ms Half Sine Pulse	
P _{tot}	Power Dissipation	366 159	W	Tc = 25°C Tc = 110°C	Fig.6
∫i ² dt	∫i ² dt	338	A ² S	Tc = 25 tp = 10ms	
T _{stg} , T _J	Operating Junction Range	-55 to +175		-	

R _{th(j-c)}	Thermal resistance from junction to case	0.41	°C/W	-	Fig.8

(T_c = 25°C unless otherwise specified)

V _F	Forward Voltage	1.4 1.9	1.6 2.2	V	I _F = 30A T _J = 25 I _F = 30A T _J = 175	Fig.1
I _R	Reverse Current	1 10	100 200	μA	V _R = 1200V T _J = 25 V _R = 1200V T _J = 175	Fig.2
Q _c	Total Capacitive Charge	157	-	nC	V _R = 800V I _F = 30A di/dt = 200A/μs T _J = 25	Fig.4
C	Total Capacitance	3190 140 101	-	pF	V _R = 0V T _J = 25 f = 1MHz V _R = 400V T _J = 25 f = 1MHz V _R = 800V T _J = 25 f = 1MHz	Fig.3
E _C	Capacitance Stored Energy	84	-	μJ	V _R = 800V	Fig.5

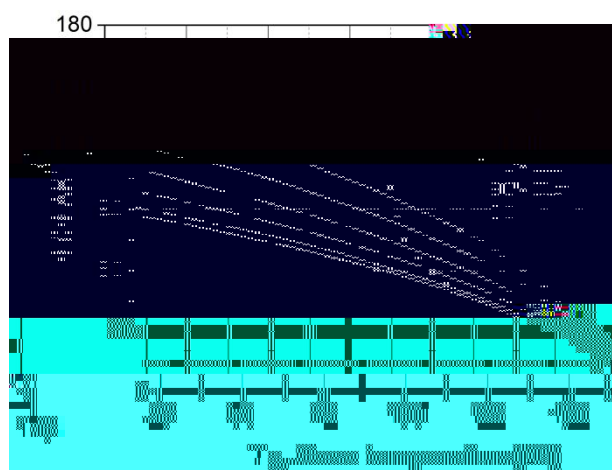


Figure 7. Current Derating

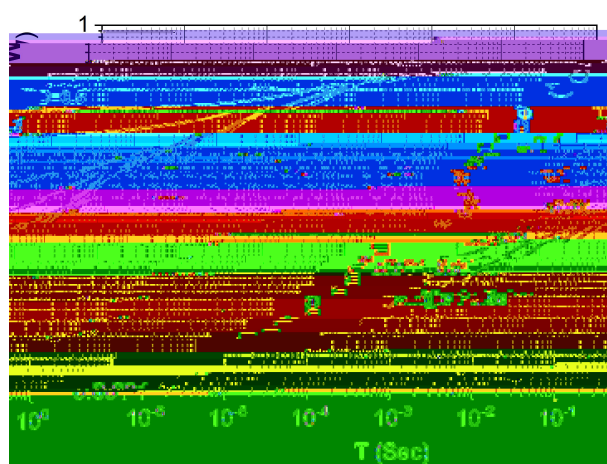
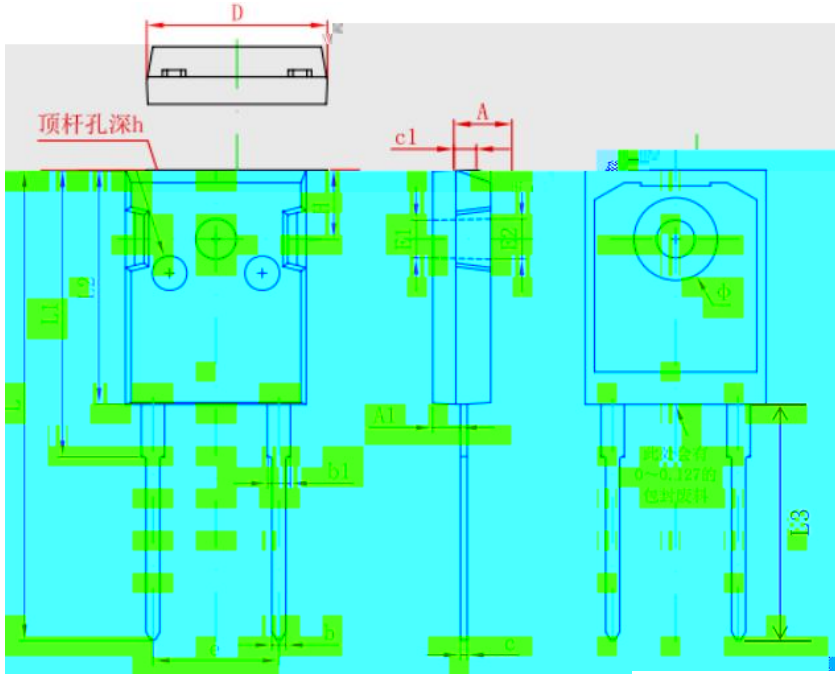


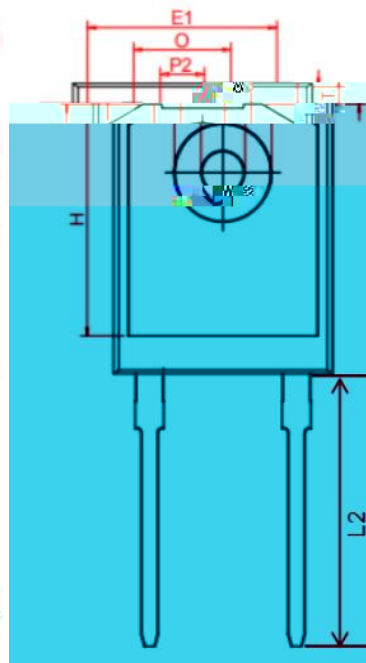
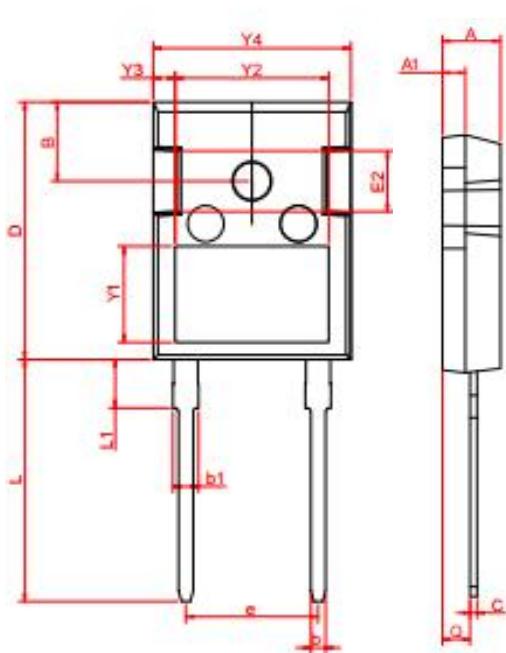
Figure 8. Transient Thermal Impedance

(TO-247-2L-A&TO-247-2L-B)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	MAX	Min	MAX
A	4.850	5.150	0.191	0.203
A1	1.700	1.900	0.067	0.075
b1	0.500	0.700	0.020	0.028
c1	0.500	0.700	0.020	0.028
D	24.800	25.100	0.976	0.988
L1	24.800	25.100	0.976	0.988
L2	24.800	25.100	0.976	0.988
L3	24.800	25.100	0.976	0.988
L	24.800	25.100	0.976	0.988

TO-247-2L-A



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	MAX	Min	MAX
A	4.70	5.30	0.185	0.209
A1	1.70	1.90	0.067	0.075
C	0.45	0.75	0.018	0.030
Q	2.20	2.60	0.087	0.102
O	7.10	7.40	0.280	0.291
P2	3.45	3.75	0.136	0.148
L	19.00	21.00	0.748	0.827
L1	4.20	4.50	0.165	0.177
L2	20.30	21.00	0.799	0.827
b	1.00	1.40	0.039	0.055
b1	1.80	2.25	0.071	0.089
e	10.65	10.95	0.419	0.431
D	20.95	21.35	0.825	0.841
Y1	7.60	8.10	0.299	0.319
Y2	11.00	13.00	0.433	0.512
Y3	1.75	2.25	0.069	0.089
Y4	16.00	16.40	0.630	0.646
E2	4.60	4.90	0.181	0.193
T	1.35 REF		0.053 REF	
H	16.25 REF		0.640 REF	
E1	14.00 REF		0.551 REF	
B	6.55 REF		0.258 REF	

TO-247-2L-B

1.

The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/ EC (RoHS2), as implemented January 2, 2013.

2.

REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, please contact a Sichain representative to insure you get the most up-to-date REACH SVHC Declaration. REACH banned substance information (REACH Article 67) is also available upon request.

3. With respect to information regarding the application of the product, Sichain hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

4. Any information given in this documents subject to customer's compliance with its obligations and any applicable legal requirements, norms and standards concerning any use of the product of Sichain in any customer's applications.

5. Specifications of any and all products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment.

6. Due to technical requirements products may contain dangerous substances. For information on the types in question please contact Sichain office.

7. Except as otherwise explicitly approved by Sichain in a written document signed by authorized representatives of Sichain, Sichain' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.

8. For use of our products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a Sichain representatives, for example but not limited to: transportation equipment, primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, and power transmission systems.