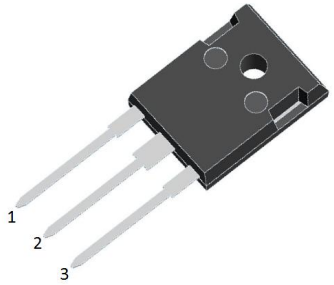
40CPQ080
40CPQ100

Technical Data
Data Sheet N0697, Rev. B

40CPQ080/40CPQ100 SCHOTTKY RECTIFIER

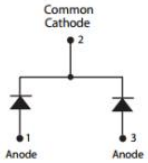


TO-247AD

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**
- **Guard ring for enhanced ruggedness and long term reliability**
- **Terminals finish: 100% Pure Tin**
- **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(limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	80(40CPQ080) 100(40CPQ100)	V
Average Rectified Forward Current	$I_{F\ (AV)}$	Tc=130°C, In DC	20(Per Leg) 40(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I_{FSM}	8.3ms, Half Sine pulse, T_C = 25 °C	360	A
Non-Repetitive Avalanche Energy(Per Leg)	E_{AS}	T_J=25℃, I_{AS}=2A, L=90. mH	11.25	mJ
Repetitive Avalanche Current(Per Leg)	I_{AR}	Current decaying linearly to zero in 1 μ sec Frequency limited by T_J max. V_A=1.5×V_R typical	0.75	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per Leg)*	V_{F1}	@ 20A, Pulse, T_J = 25 °C @ 40A, Pulse, T_J = 25 °C	0.77 0.86	0.79 0.91	V
	V_{F2}	@ 20A, Pulse, T_J = 125 °C @ 40A, Pulse, T_J = 125 °C	0.63 0.69	0.65 0.75	V
Reverse Current (Per Leg)*	I_{R1}	@V_R = rated V_R, T_J = 25 °C	0.0004	1.0	mA
	I_{R2}	@V_R = rated V_R, T_J = 125 °C	0.3	15.0	mA
Junction Capacitance(Per Leg)	C_T	@V_R = 5V, T_C = 25 °C, f_{SIG} = 1MHz	995	1200	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

* 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	$R_{\theta JC}$	DC operation	1.25(per leg) 0.63(per device)	°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.24	°C/W
Approximate Weight	wt	-	6.28	g
Case Style	TO-247AD			

Ratings and Characteristics Curves

Figure 1 Typical Forward Characteristics

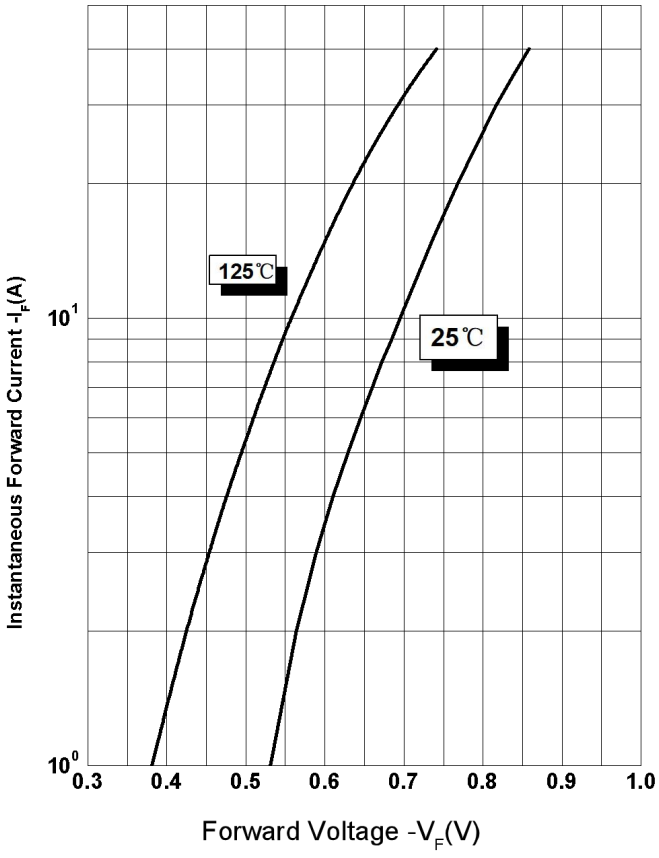


Figure 2 Typical Reverse Characteristics

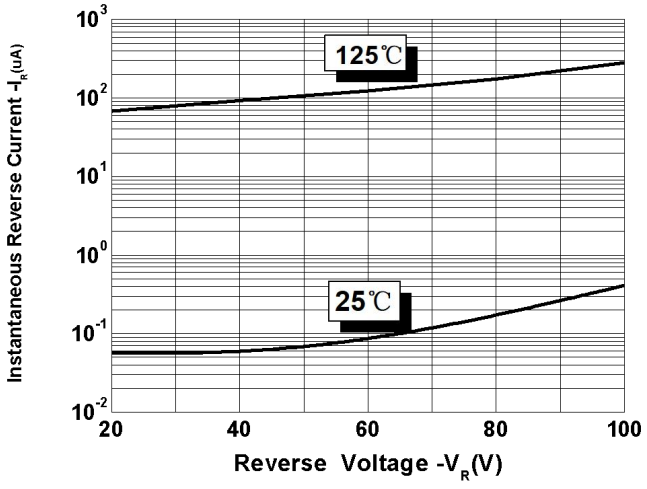
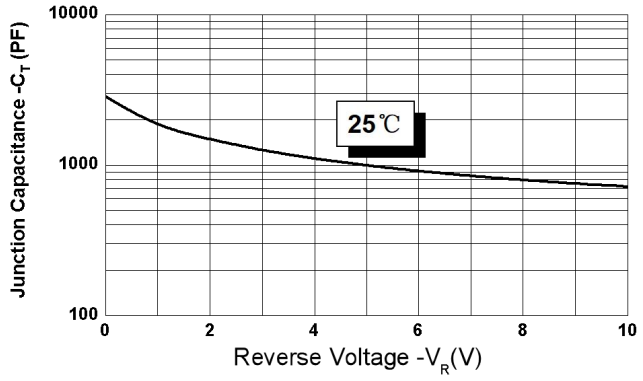


Figure 3 Typical Junction Capacitance



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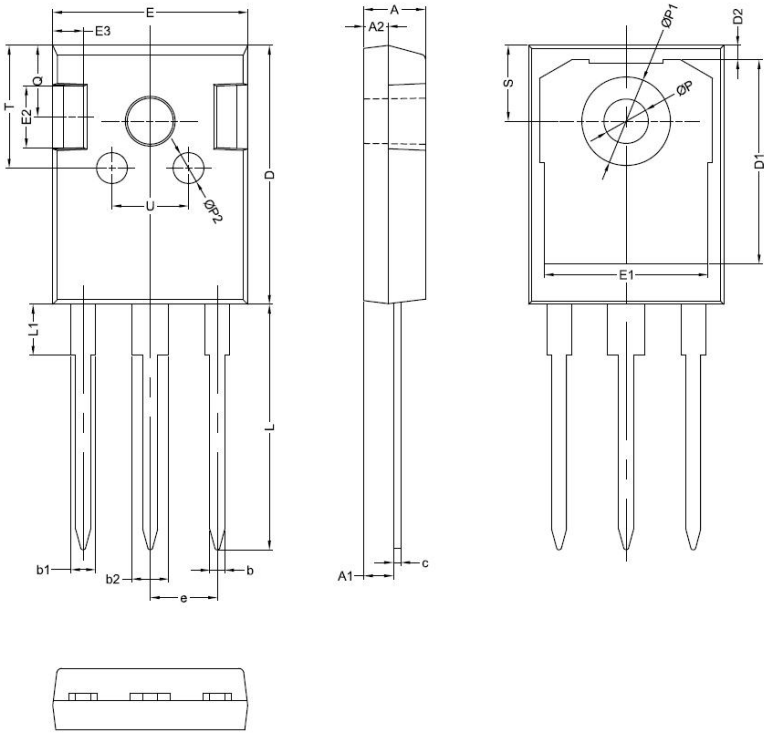
Mechanical Dimensions TO-247AD

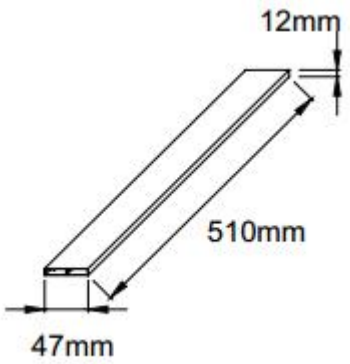


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.40
b1	1.80	2.00	2.20
b2	2.80	3.00	3.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.55	
D2		1.20	
E	15.45	15.80	16.00
E1		13.30	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.70
L1		4.13	
P	3.50	3.60	3.70
P1	7.1		7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

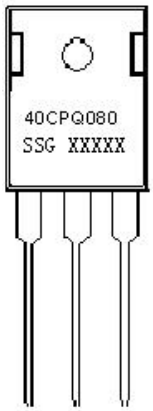
Ordering Information:

Device	Package	Shipping
40CPQ080(100)	TO-247AD(Pb-Free)	25pcs / tube

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

40	= Forward Current (40A)
C	= Configuration
PQ	= Device Type
080	= Reverse Voltage (80V)
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

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

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