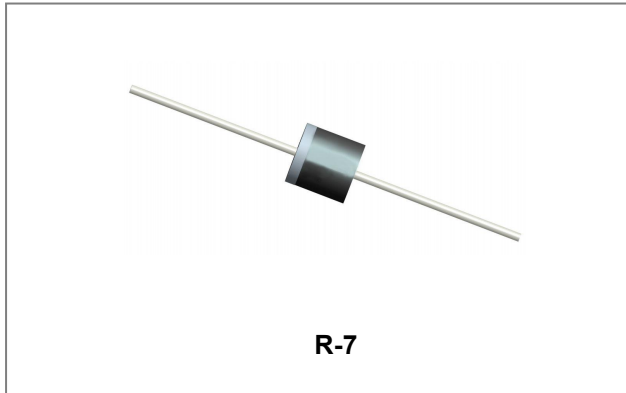


## 40SQ045-D/40SQ045-C SCHOTTKY BARRIER RECTIFIER



### Features

- 200°C T<sub>J</sub> operation
- Super-high speed & low noise switching
- Low voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Planar Schottky technology
- 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

- DC-DC converters
- AC adapter
- High frequency rectification circuit
- Bypass diodes

### 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 <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	45	V
Average Rectified Forward Current	I <sub>F(AV)</sub>	T <sub>c</sub> =110°C, I <sub>n</sub> DC	40	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3 ms, half Sine pulse	350	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Peak Forward Voltage*	V <sub>FM</sub>	I <sub>FM</sub> =40.0A, T <sub>a</sub> =25°C	0.52	0.55	V
Peak Reverse Current*	I <sub>RRM1</sub>	V <sub>RM</sub> =V <sub>RRM</sub>	T <sub>a</sub> =25°C	0.08	mA
	I <sub>RRM2</sub>		T <sub>a</sub> =100°C	-	
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHZ	5900	-	pF
Thermal Resistance	R <sub>θJ-c</sub>	Between junction and case	1.8	-	°C/W

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

### Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	IN DC Forward Mode, without reverse bias, $t \leq 1$ h	-55 to +200	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}\text{C}$
Approximate Weight	wt	40SQ045-D 40SQ045-C	2.6 3	g
Case Style		R-7		

### Ratings and Characteristics Curves

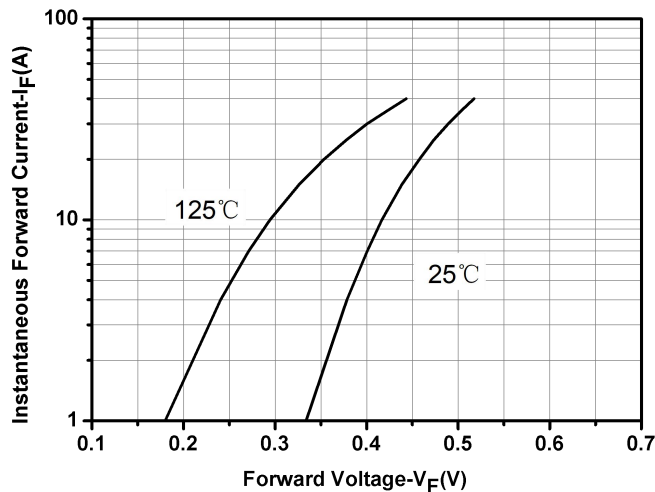


Fig.1-Typical Forward Voltage Characteristics

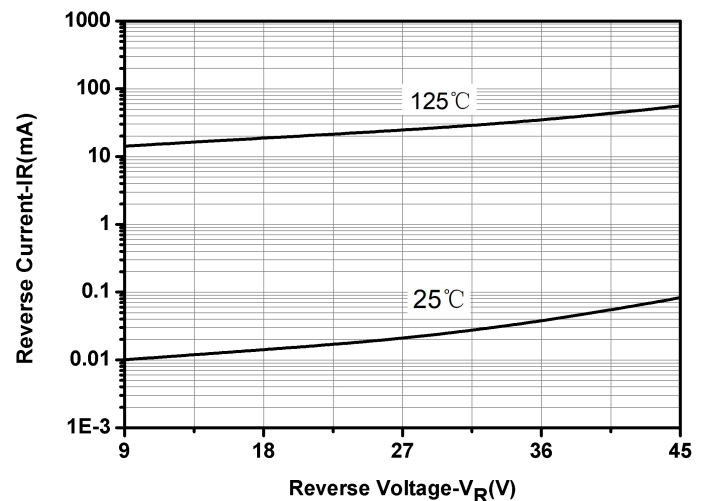


Fig.2-Typical Reverse Characteristics

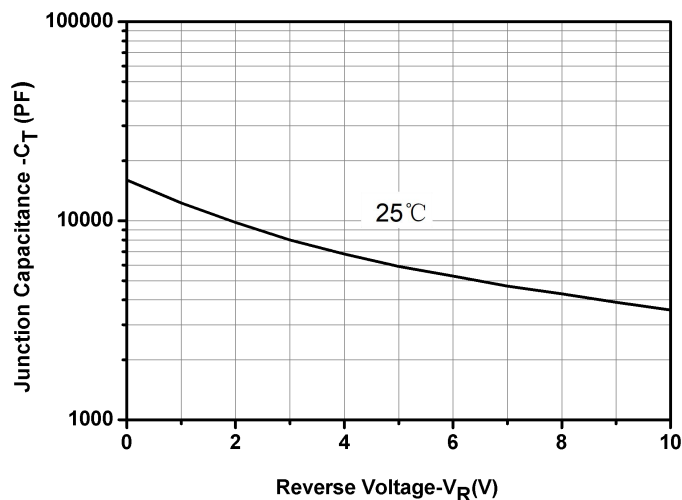
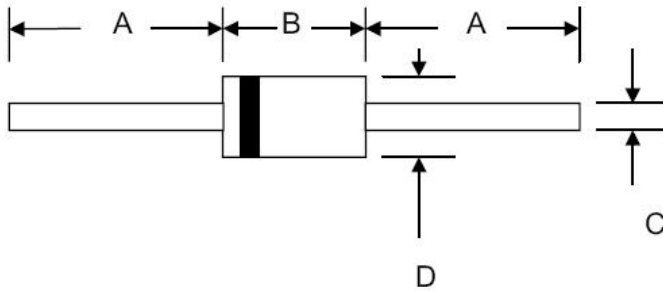


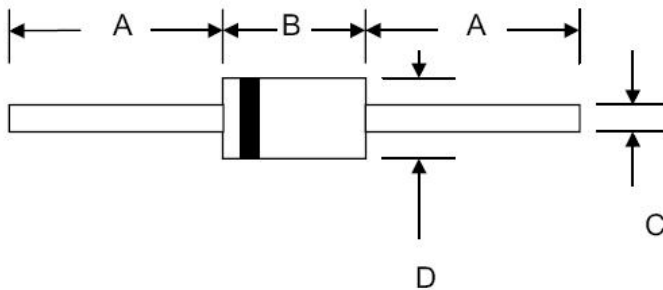
Fig.3-Capacitance vs. Reverse Voltage

**Mechanical Dimensions R-7(40SQ045-D)**



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	15.00	-	0.590	-
B	8.60	9.10	0.340	0.360
C	1.90	2.10	0.075	0.083
D	8.60	9.10	0.340	0.360

**Mechanical Dimensions R-7(40SQ045-C)**



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.4	-	1.000	-
B	8.60	9.10	0.340	0.360
C	1.90	2.10	0.075	0.083
D	8.60	9.10	0.340	0.360

### Ordering Information

Device	Package	Shipping
40SQ045-D	R-7(Pb-Free)	800pcs / reel
40SQ045-C	R-7(Pb-Free)	800pcs / reel
40SQ045-DTR	R-7(Pb-Free)	800pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

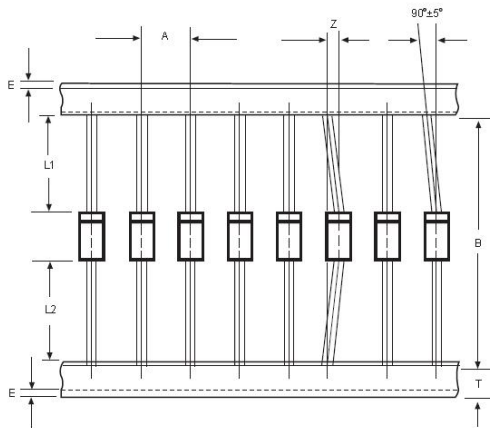
### Marking Diagram



Where XXXXX is YYWWL

40 = Forward Current (40A)  
 S = Package Type  
 Q = Device Type  
 045 = Reverse Voltage (45V)  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

### Carrier Tape Specification R-7



SYMBOL	Millimeters	
	Min.	Max.
A	9.50	10.50
B	50.9	53.9
Z	-	1.20
T	5.60	6.40
E	-	0.80
IL1-L2I	-	1.0

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