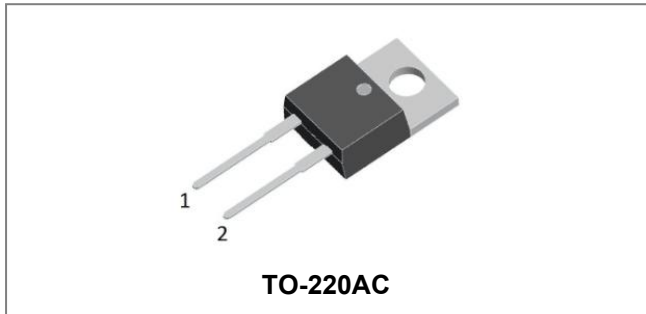


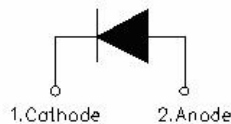
15TQ045-S SCHOTTKY RECTIFIER



Features

- 175°C T_J operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- 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
- Redundant power subsystems
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V _{RRM}	-	45	V
Working Peak Reverse Voltage	V _{RWM}			
DC Blocking Voltage	V _R			
Average Forward Current	I _{F(AV)}	50% duty cycle @T _C =116°C, rectangular wave form	15	A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	400	A
Non-repetitive avalanche energy	E _{as}	T _J = 25 °C, L = 1mH, I _{AS} = 5 A	15	mJ
Repetitive avalanche current	I _{AR}	I _{AS} decay linearly to 0 in 1 μ s Frequency limited by T _J max. V _A = 1.5 V _R	5	A
ESD-rating	ESD	level 2, human body model	4	KV

Electrical Characteristics:

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	V _{BR}	@ 100uA, Pulse, T _A = 25 °C	48	-	-	V
Forward Voltage Drop*	V _{F1}	@ 10A, Pulse, T _A = 25 °C @ 15A, Pulse, T _A = 25 °C	-	0.50 0.54	0.53 0.58	V
Forward Voltage Drop*	V _{F1}	@ 10A, Pulse, T _A = 125 °C @ 15A, Pulse, T _A = 125 °C	-	0.42 0.46	0.45 0.50	V
Reverse Current*	I _{R1}	@V _R = 20V , T _J = 25 °C @V _R = rated VR , T _J = 25 °C	-	4 15	50 150	μA
Reverse Current*	I _{R1}	@V _R = rated VR , T _J = 125°C @V _R = 20V, T _J = 150°C	-	10 15	15 50	mA
Junction Capacitance	C _T	@V _R = 5V, T _C = 25 °C, f _{SIG} = 1MHz	-	1533	1700	pF

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

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +175	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-	-55 to +175	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case(Per device)	$R_{\theta\text{JC}}$	DC operation	2.0	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	1.8	g
Case Style	TO-220AC			

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

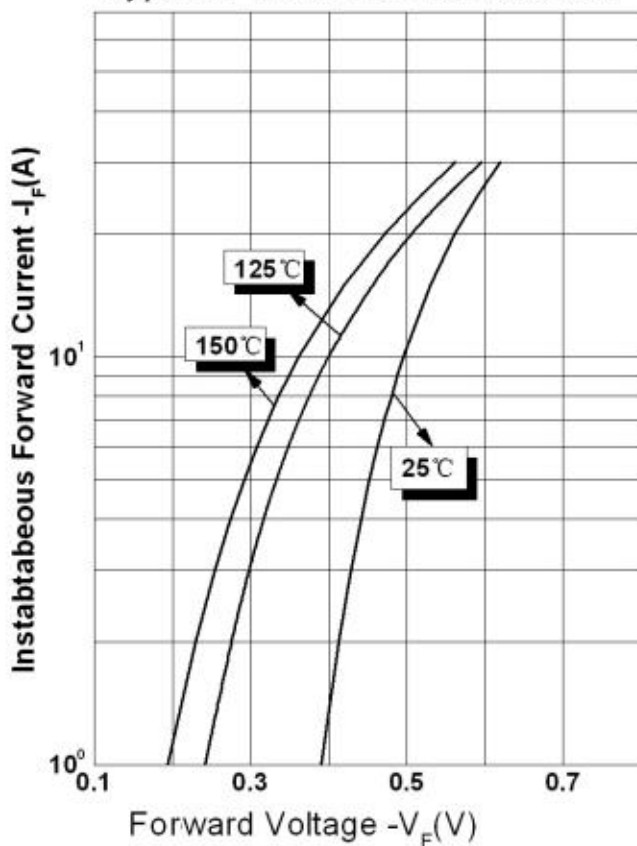


Figure 2
Typical Reverse Characteristics

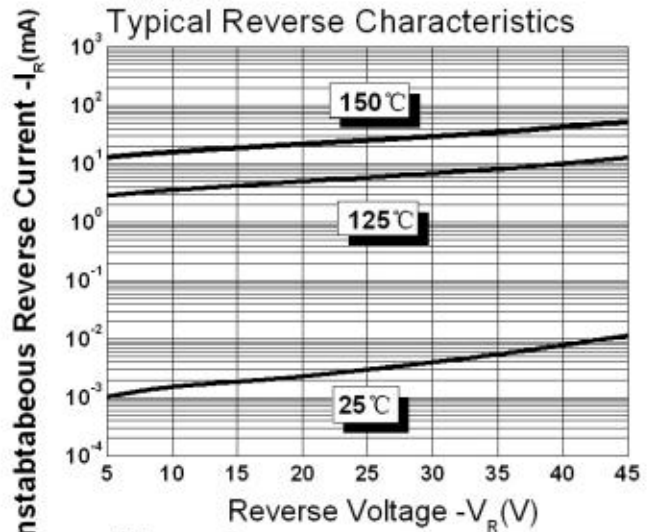
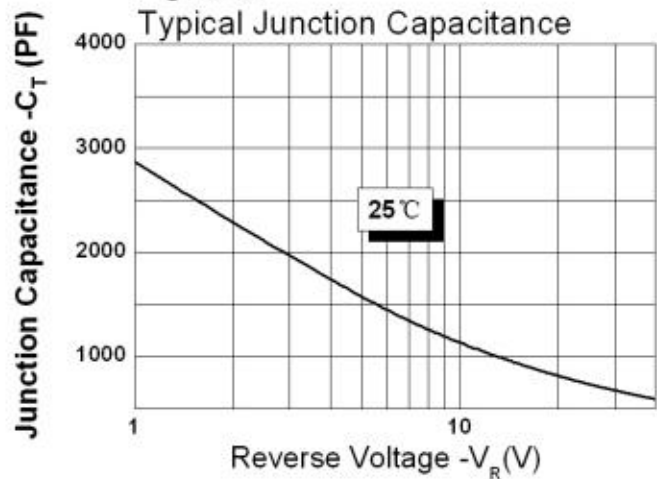


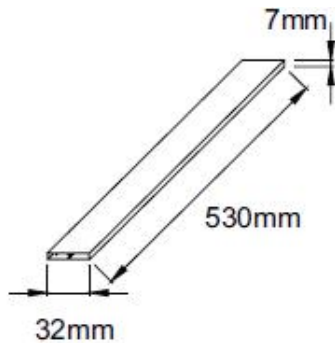
Figure 3
Typical Junction Capacitance



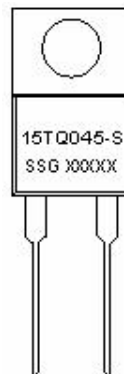
Mechanical Dimensions TO-220AC(Millimeters/Inches)



Tube Specification



Marking Diagram



Where XXXXX is YYWWL

15TQ045-S = Part Name
SSG = SSG
YY = Year
WW = Week
L = Lot Number

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

Ordering Information

Device	Package	Shipping
15TQ045-S	TO-220AC (Pb-Free)	50 pcs/ tube

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

Technical Data
Data Sheet N1541, Rev. A



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