



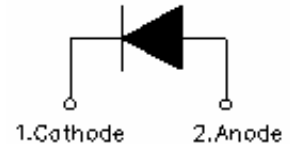
## 15TQ045-S SCHOTTKY RECTIFIER

### Applications:

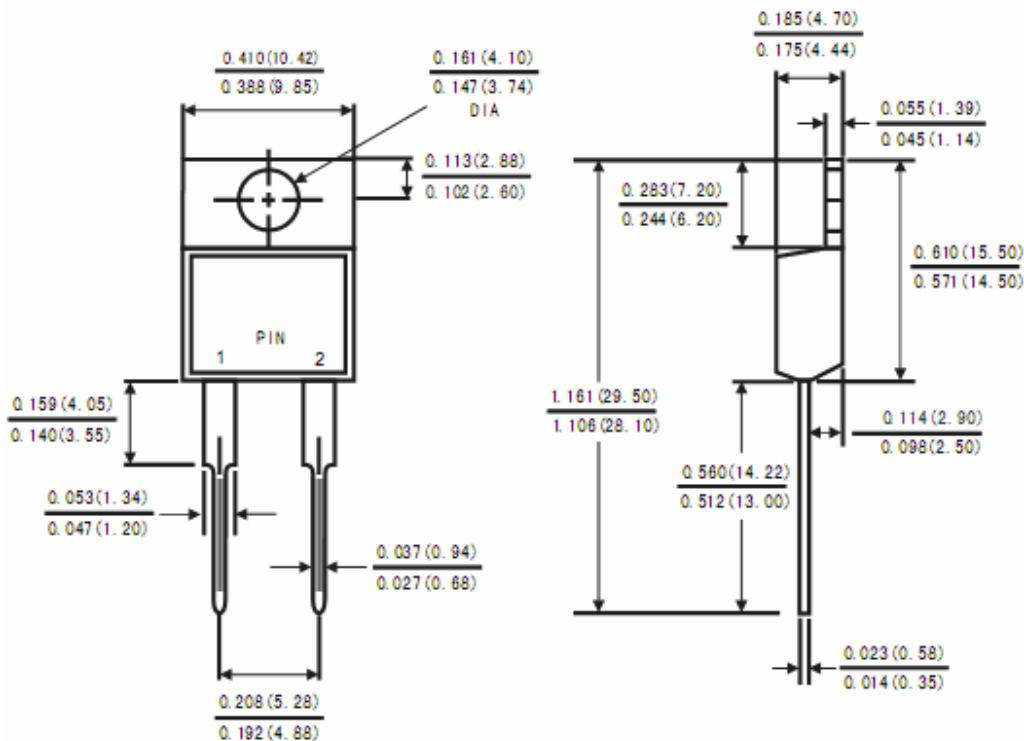
- Switching power supply
- Redundant power subsystems
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 175°C T<sub>J</sub> 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



### Mechanical Dimensions: In Inches/mm



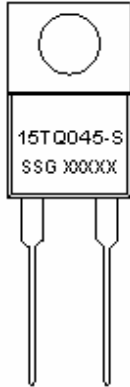
### TO-220AC(HY)



Technical Data  
Data Sheet N1541, Rev. A

**Green Products**

**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)	50pcs / tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	45	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=116^\circ\text{C}$ , 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	$E_{as}$	$T_J = 25^\circ\text{C}$ , $L = 1\text{mH}$ , $I_{AS} = 5\text{ A}$	15	mJ
Repetitive avalanche current	$I_{AR}$	$I_{AS}$ decay linearly to 0 in $1\ \mu\text{s}$ 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	$V_{BR}$	@ 100 $\mu$ A, Pulse, $T_A = 25\text{ }^\circ\text{C}$	48	-	-	V
Forward Voltage Drop	$V_{F1}$	@ 10A, Pulse, $T_A = 25\text{ }^\circ\text{C}$ @ 15A, Pulse, $T_A = 25\text{ }^\circ\text{C}$	-	0.50 0.54	0.53 0.58	V
Forward Voltage Drop	$V_{F1}$	@ 10A, Pulse, $T_A = 125\text{ }^\circ\text{C}$ @ 15A, Pulse, $T_A = 125\text{ }^\circ\text{C}$	-	0.42 0.46	0.45 0.50	V
Reverse Current *	$I_{R1}$	@ $V_R = 20\text{V}$ , $T_J = 25\text{ }^\circ\text{C}$ @ $V_R = \text{rated } V_R$ , $T_J = 25\text{ }^\circ\text{C}$	-	4 15	50 150	$\mu$ A
Reverse Current *	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 125\text{ }^\circ\text{C}$ @ $V_R = 20\text{V}$ , $T_J = 150\text{ }^\circ\text{C}$	-	10 15	15 50	mA
Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	-	1533	1700	pF

\* Pulse Width < 300 $\mu$ s, Duty Cycle <2%

**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	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	2.0	$^\circ\text{C/W}$
Approximate Weight	wt	-	2	g
Case Style	TO-220AC			



Figure 1  
Typical Forward Characteristics

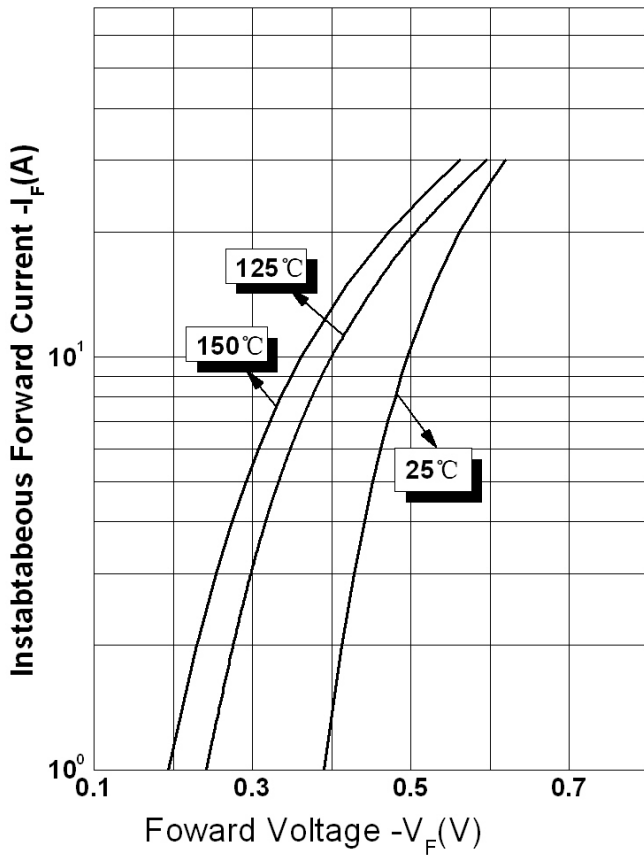


Figure 2  
Typical Reverse Characteristics

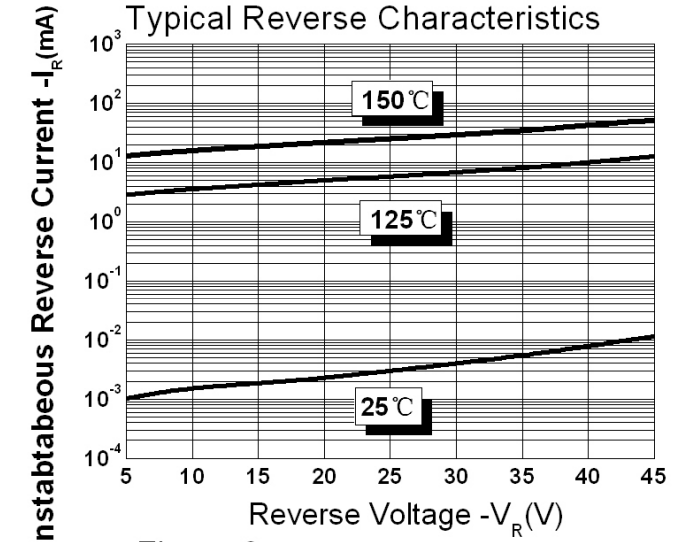
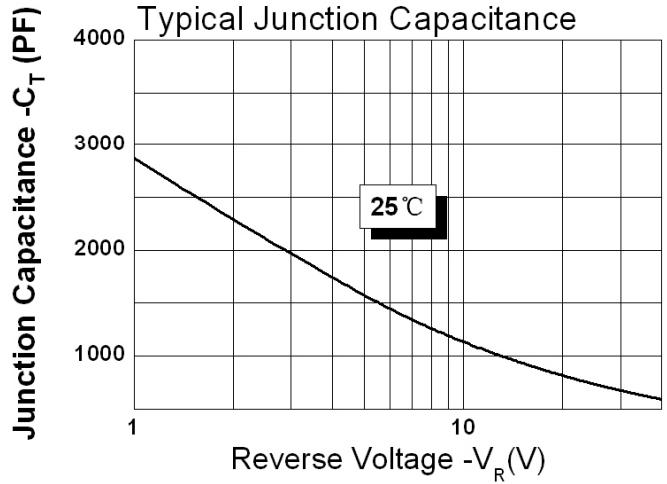


Figure 3  
Typical Junction Capacitance





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