

Technical Data  
Data Sheet 3107, Rev. -

## 10BQ040 SCHOTTKY RECTIFIER

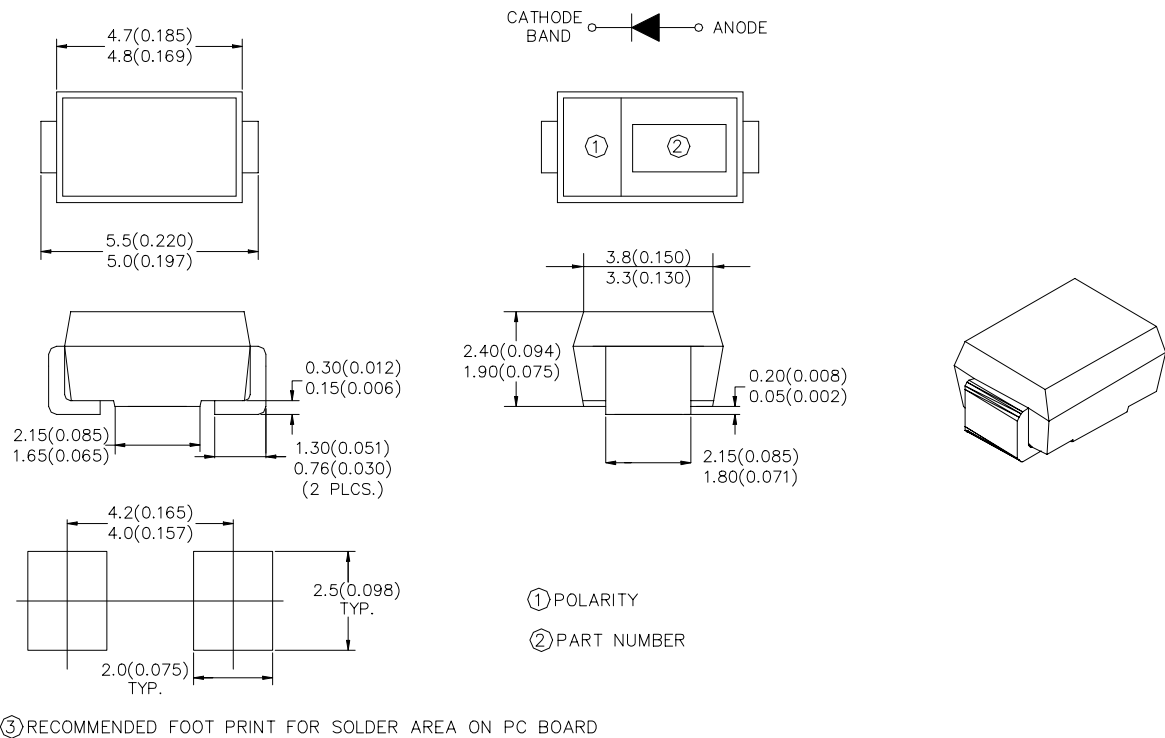
### Applications:

- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection
- Disk drives • Battery charging

### Features:

- Small foot print, surface mountable
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

### Mechanical Dimensions: In Inches / mm



### SMB

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**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	40	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_L = 112\text{ }^\circ\text{C}$ , rectangular wave form	1.0	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine pulse	54	A
Non-Repetitive Avalanche Energy	$E_{AS}$	$T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 2.0\text{ A}$ , $L = 4.0\text{ mH}$	18	mJ
Repetitive Avalanche Current	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical	0.2	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	$V_{F1}$	@ 1.0 A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.53	V
		@ 2.0 A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.70	
	$V_{F2}$	@ 1.0 A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.49	V
		@ 2.0 A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.64	
Max. Reverse Current *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	0.1	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	4	mA
Max. Junction Capacitance	$C_T$	@ $V_R = 5\text{ V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	80	pF
Typical Series Inductance	$L_S$	Measured lead to lead 5 mm from package body	2.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu\text{s}$

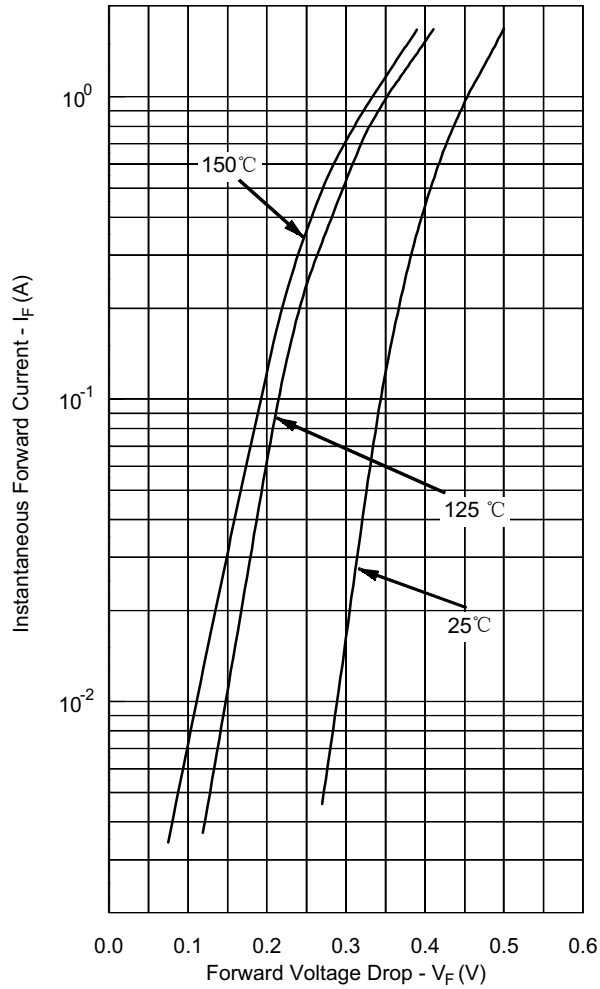
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

**Thermal-Mechanical Specifications:**

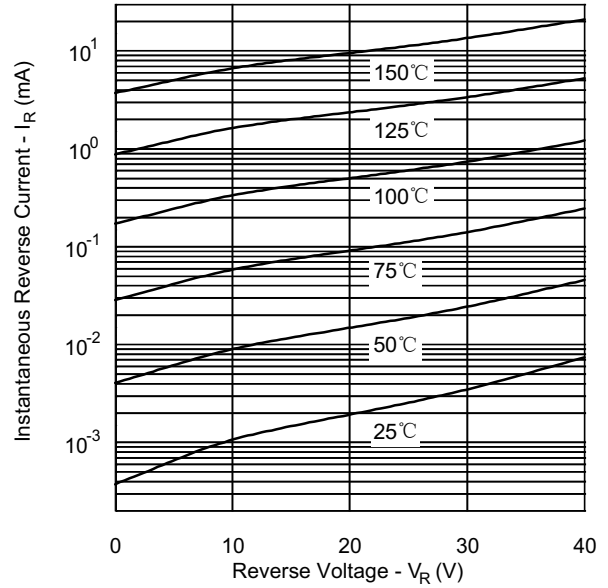
Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +150	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	$^\circ\text{C}$
Max. Thermal Resistance, Junction to Lead	$R_{\theta JL}$	DC operation	36	$^\circ\text{C/W}$
Max. Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	DC operation	140	$^\circ\text{C/W}$
Approximate Weight	wt	-	0.10	g
Case Style	SMB			

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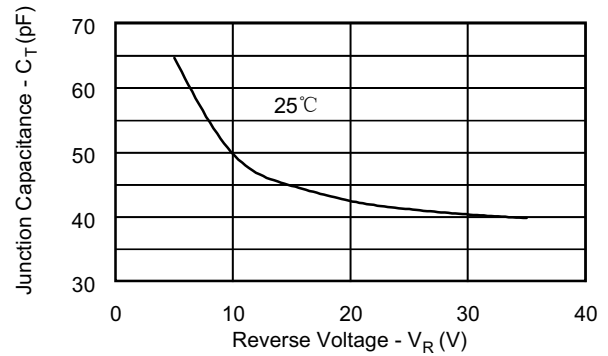
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



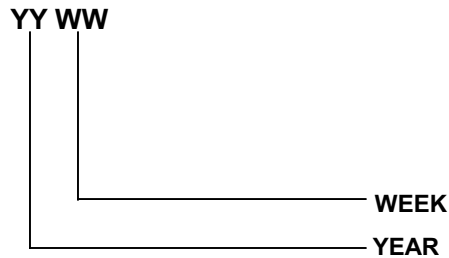
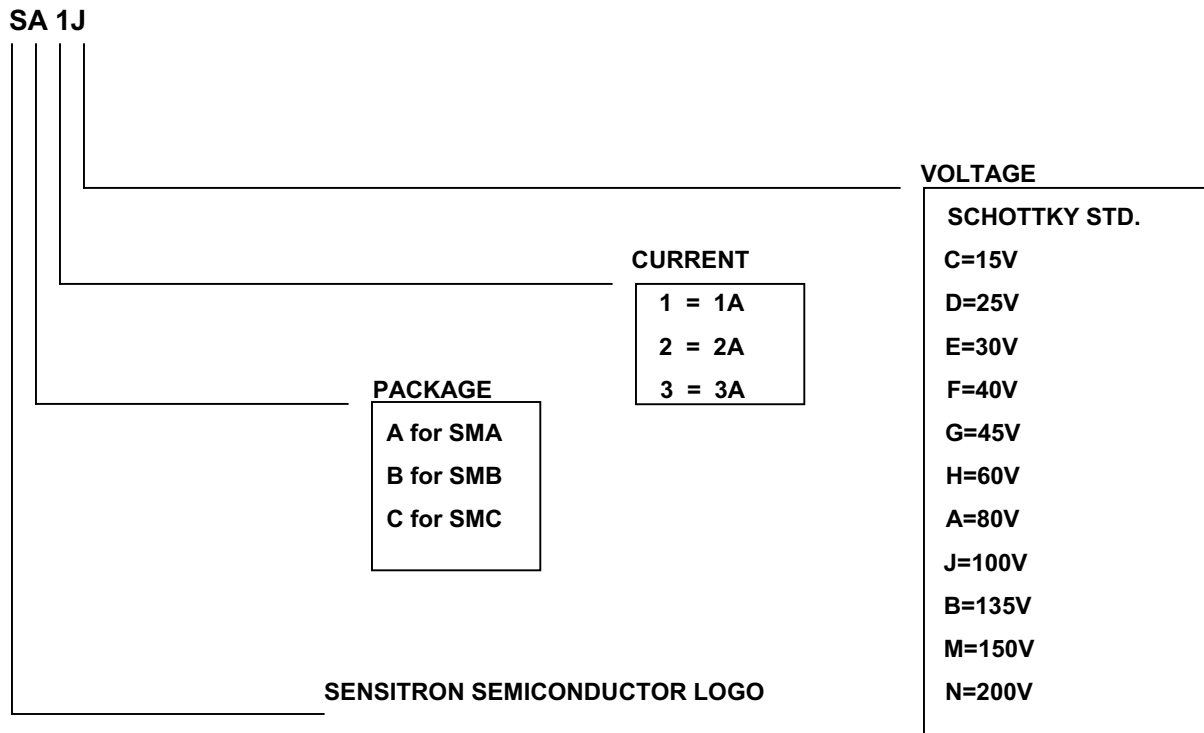
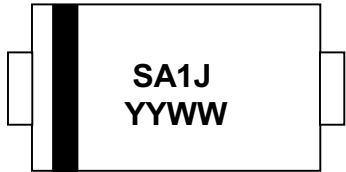
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### Marking & Identification

Each device has 2 rows of marking for identification.

The first row designates the device as manufactured by Sensitron Semiconductor as indicated by the letter "S". It also contains the information about package style, current and voltage rating.

The second row indicates the year and the week of manufacturing.



**TECHNICAL DATA**

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