



SBA120Q / SBA130Q / SBA140Q

EXTREME LOW VF SCHOTTKY RECTIFIER

Voltage	20-40 V	Current	1 A
----------------	----------------	----------------	------------

Features

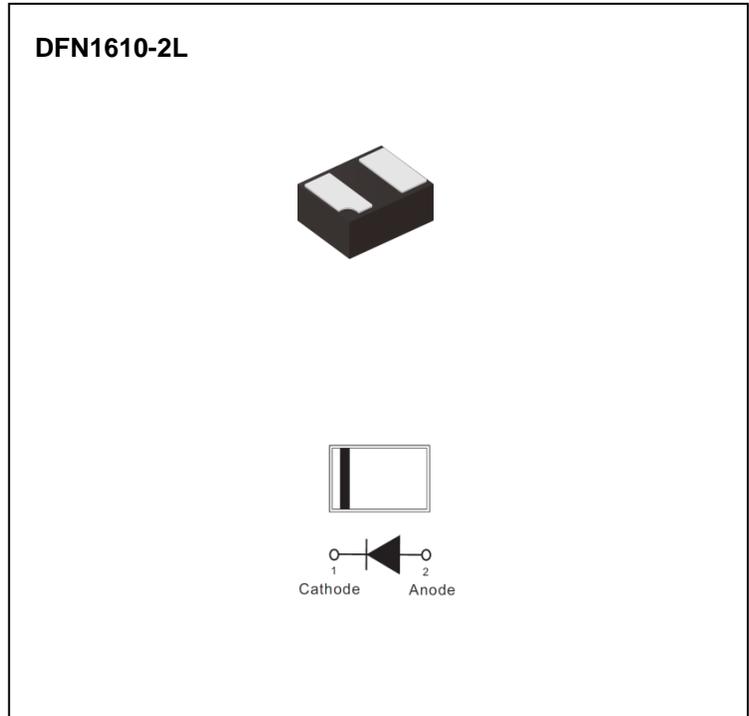
- Ultra low forward voltage, Low Power loss
- Surface mount package
- Ultra thin profile package for space constrained utilization
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 standard

Applications

- Low voltage rectification
- Reverse polarity protection
- Low power consumption applications

Mechanical Data

- Case: DFN1610-2L, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00008 ounces, 0.0024 grams



Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	SBA120Q	SBA130Q	SBA140Q	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Maximum rms voltage	V_{RMS}	14	21	28	V
Maximum dc blocking voltage	V_R	20	30	40	V
Maximum average forward rectified current	$I_{F(AV)}$	1			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	I_{FSM}	10			A
Typical thermal resistance	$R_{\theta JC}^{(2)}$	60			$^\circ\text{C/W}$
	$R_{\theta JA}^{(1)}$	300			
Operating junction temperature range	T_J	-55 to +150			$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150			$^\circ\text{C}$

Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	SBA120Q		SBA130Q		SBA140Q		UNIT						
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.							
Forward voltage	V_F	$I_F = 10\text{mA}$	0.22	-	0.22	-	0.23	-	V						
		$I_F = 0.5\text{A}$								0.35	-	0.36	-	0.39	-
		$I_F = 1\text{A}$								-	0.45	-	0.47	-	0.51
		$T_J = 25^\circ\text{C}$													
Reverse current (Note 2)	I_R	$V_R = 10\text{V}$	7.5	-	5.9	-	3.6	-	μA						
		$V_R = 20\text{V}$								-	100	-	4.2	-	
		$V_R = 30\text{V}$								-	-	100	-	6.1	-
		$V_R = 40\text{V}$								-	-	-	-	-	100
		$V_R = 20\text{V}$	3.2	-	2.2	-	1.2	-	mA						
		$V_R = 30\text{V}$								-	-	3.9	-	1.7	-
		$V_R = 40\text{V}$								-	-	-	-	2.3	-
		$T_J = 125^\circ\text{C}$													

- Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.
 2. Mounted on a FR4 PCB, single-sided copper, with 100cm² copper pad area.
 3. Short duration pulse test used to minimize self-heating effect.



SBA120Q / SBA130Q / SBA140Q

TYPICAL CHARACTERISTIC CURVES

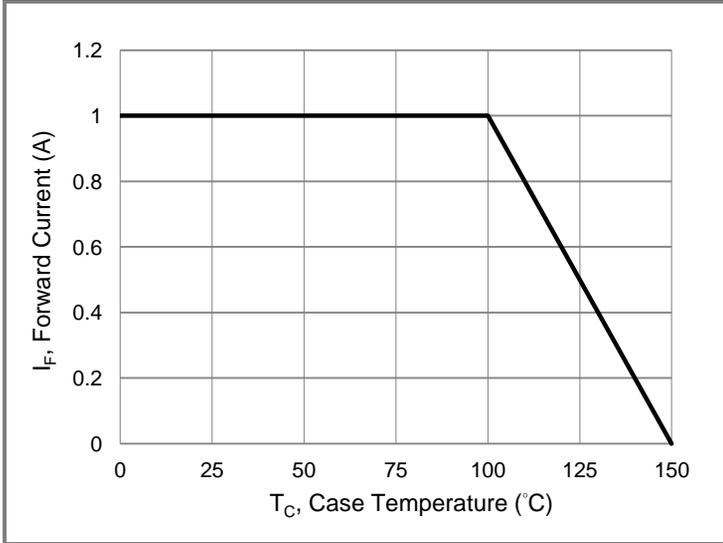


Fig.1 Forward Current Derating Curve

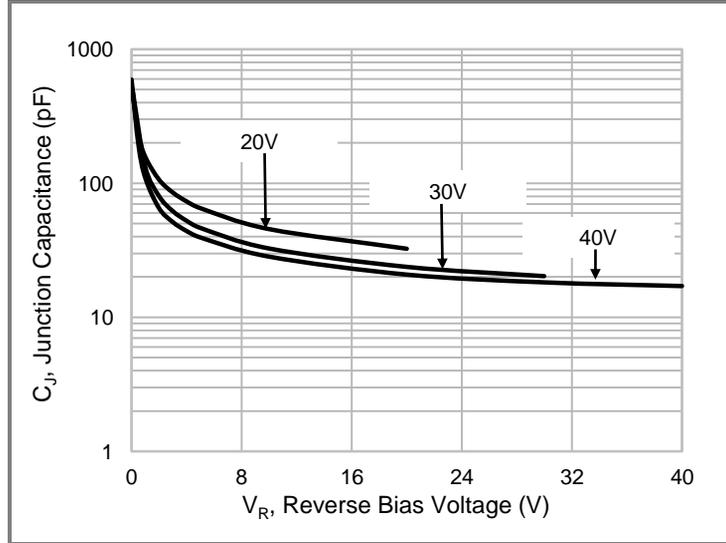


Fig. 2 Typical Junction Capacitance

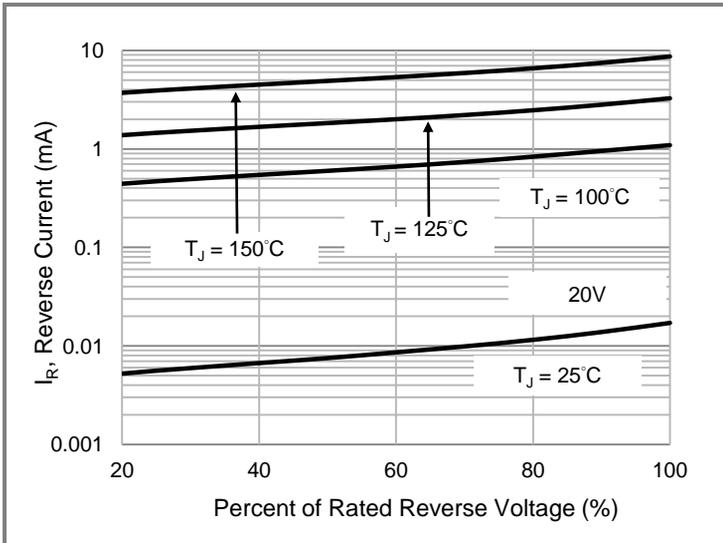


Fig.3 Typical Reverse Characteristics

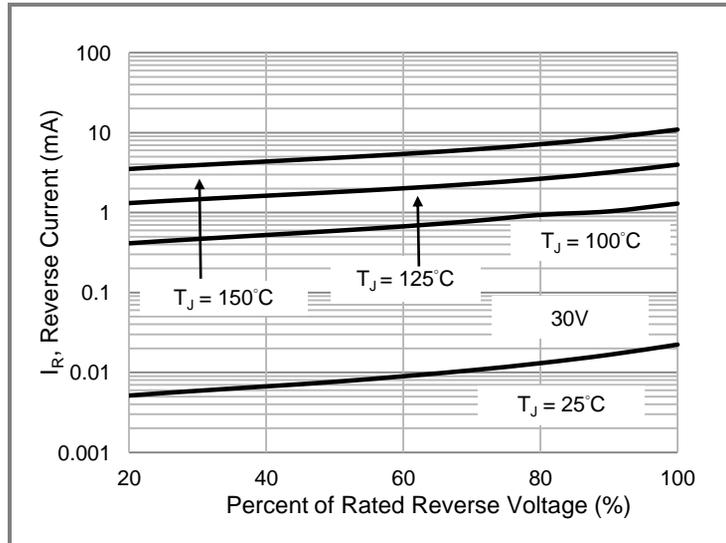


Fig.4 Typical Reverse Characteristics

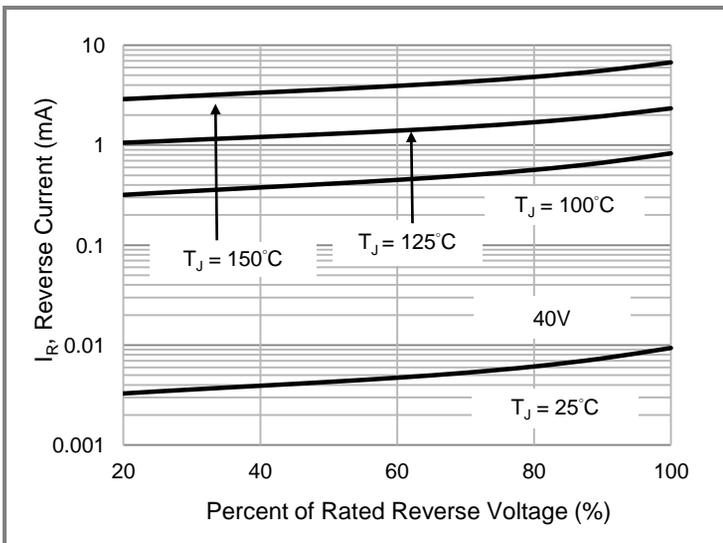


Fig.5 Typical Reverse Characteristics

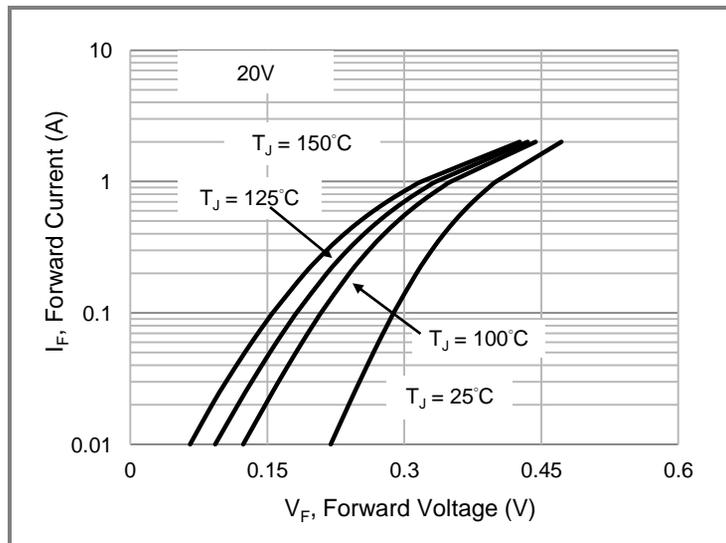


Fig.6 Typical Forward Characteristics



SBA120Q / SBA130Q / SBA140Q

TYPICAL CHARACTERISTIC CURVES

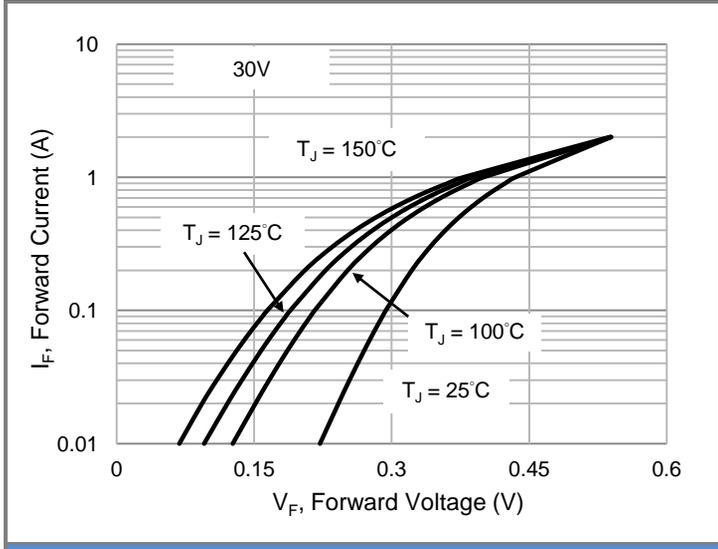


Fig.7 Typical Forward Characteristics

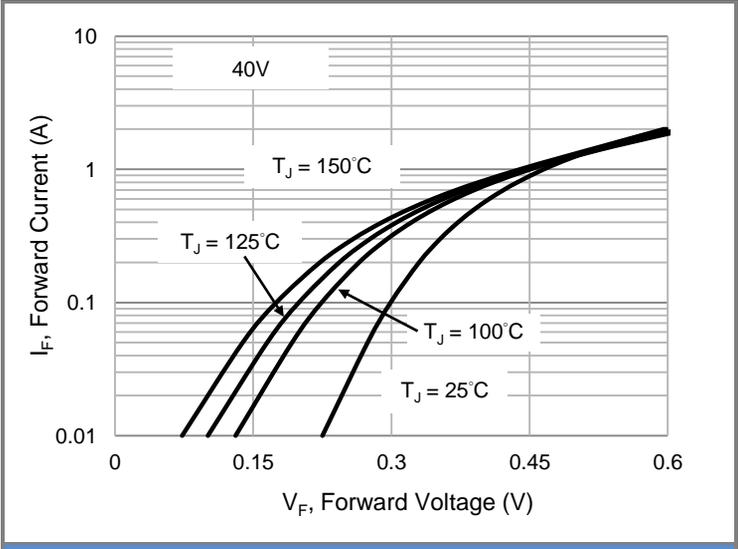


Fig. 8 Typical Forward Characteristics

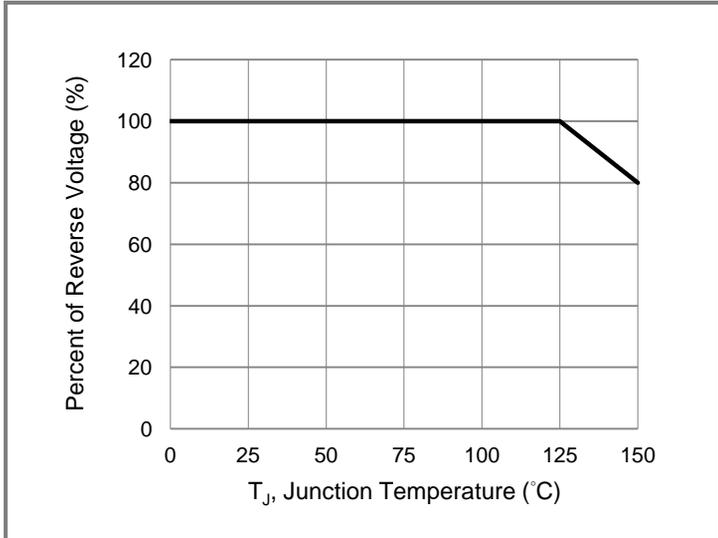


Fig.9 Operating Temperature Derating Curve

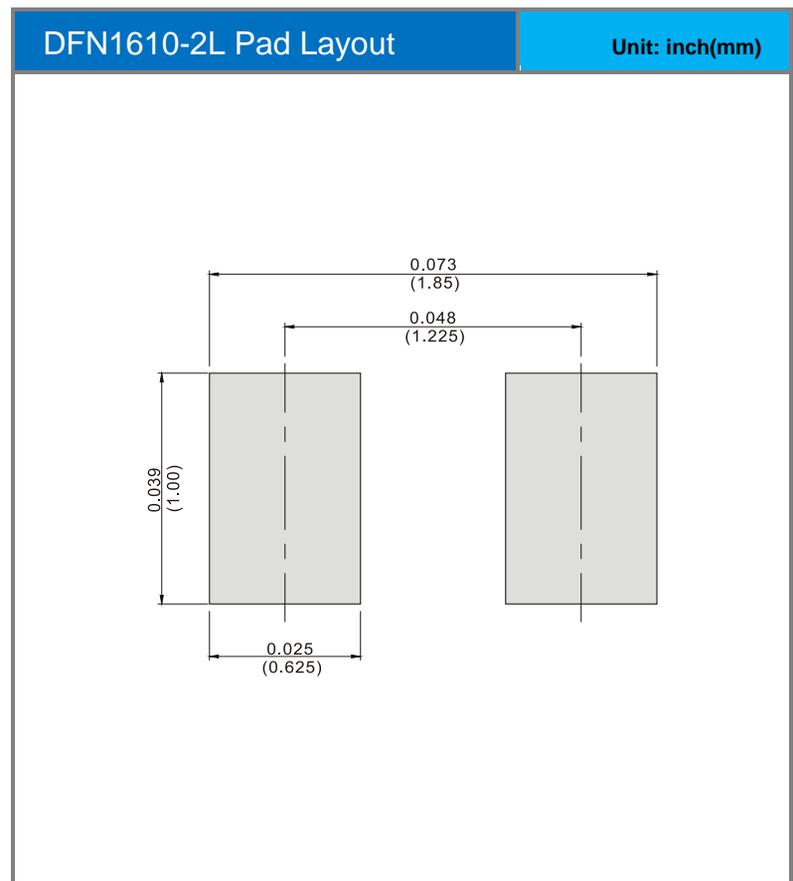
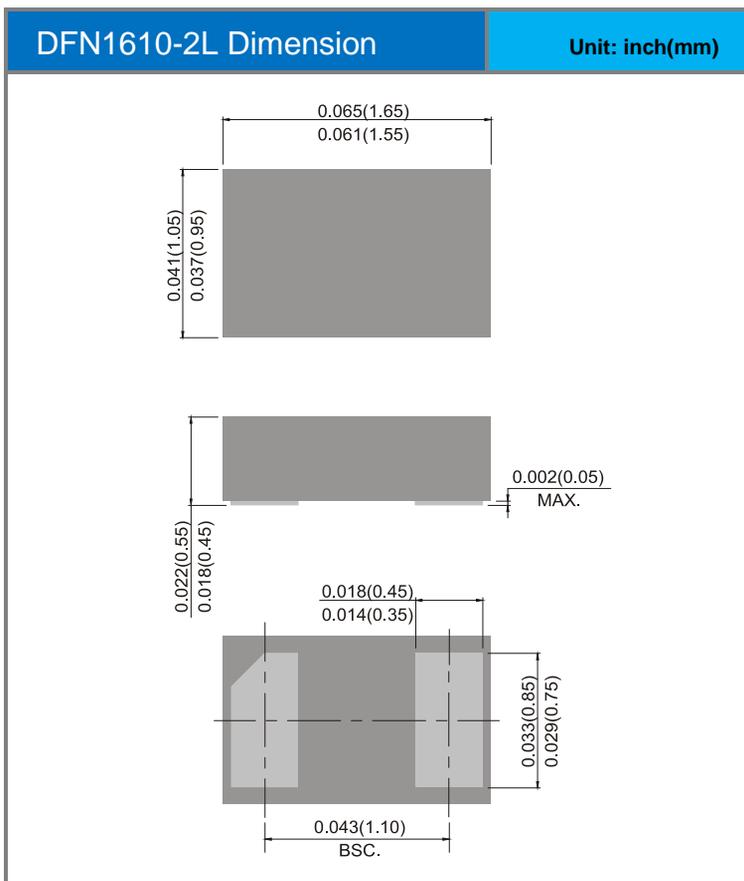


SBA120Q / SBA130Q / SBA140Q

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA120Q_R1_00001	DFN1610-2L	3K pcs / 7" reel	A2	Halogen free
SBA130Q_R1_00001	DFN1610-2L	3K pcs / 7" reel	A3	Halogen free
SBA140Q_R1_00001	DFN1610-2L	3K pcs / 7" reel	A4	Halogen free

Mounting Pad Layout





SBA120Q / SBA130Q / SBA140Q

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.