

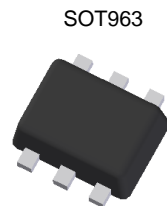
**Product Summary @ $T_A = +25^\circ\text{C}$** 

$V_{RRM}$ (V)	$I_o$ (mA)	$V_{F(MAX)}$ (V)	$I_{R(MAX)}$ ( $\mu\text{A}$ )
15	100	0.4	15

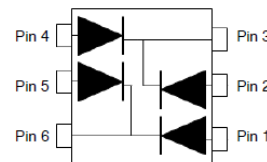
**Description and Applications**

Packaged in the compact, ultra-small surface mount SOT963 package, these Schottky barrier diodes are designed with low forward voltage for fast switching applications, circuit protection and voltage clamping.

- Portable Device
- Mobile Applications
- Low Voltage Motor Control



Top View



Internal Schematic

**Features and Benefits**

- Low Forward Voltage
- Extremely Fast Switching Capability
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

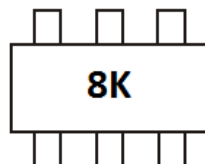
**Mechanical Data**

- Case: SOT963
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208<sup>(e3)</sup>
- Weight: 0.003 grams (Approximate)

**Ordering Information (Note 4)**

Part Number	Case	Packaging
QSG0115UDJ-7	SOT963	10,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**


8K = Product Type Marking Code

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	15	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	100	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	2	A

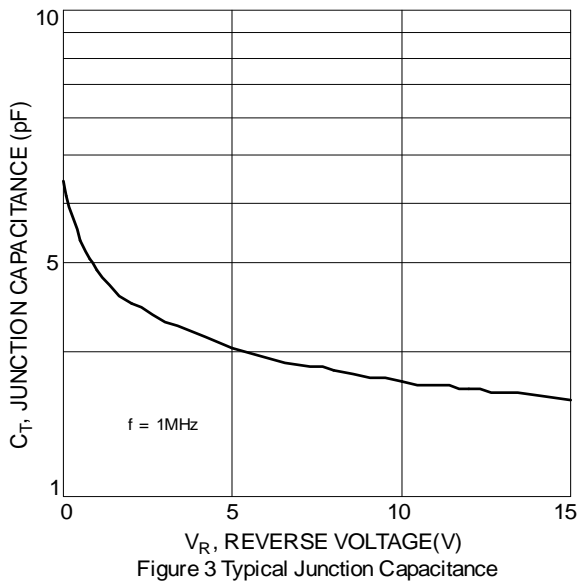
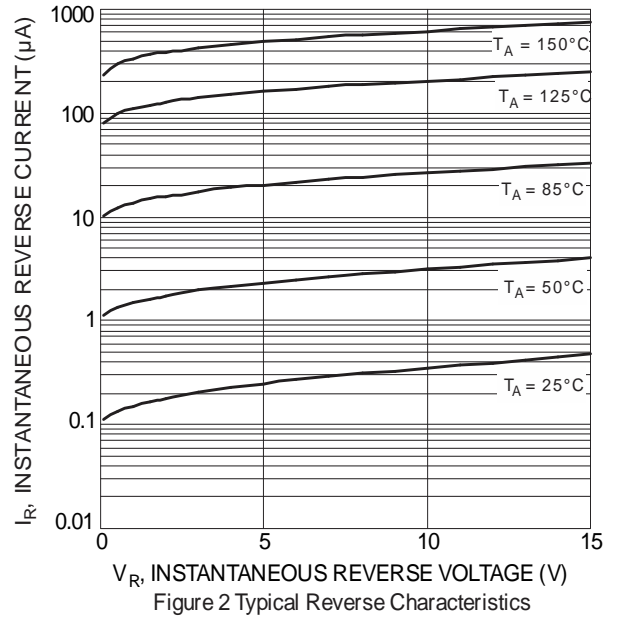
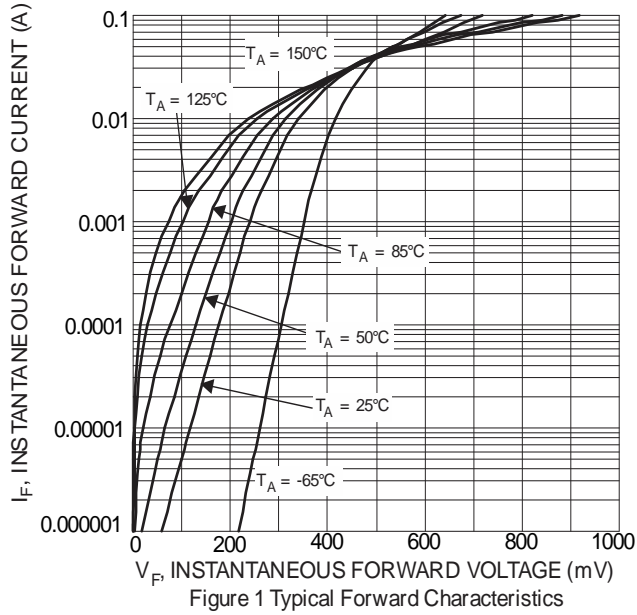
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	260	mW
Typical Thermal Resistance Junction to Ambient (Note 5) T <sub>A</sub> = +25°C	R <sub>θJA</sub>	480	°C/W
Power Dissipation (Note 6)	P <sub>D</sub>	360	mW
Typical Thermal Resistance Junction to Ambient (Note 6) T <sub>A</sub> = +25°C	R <sub>θJA</sub>	347	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

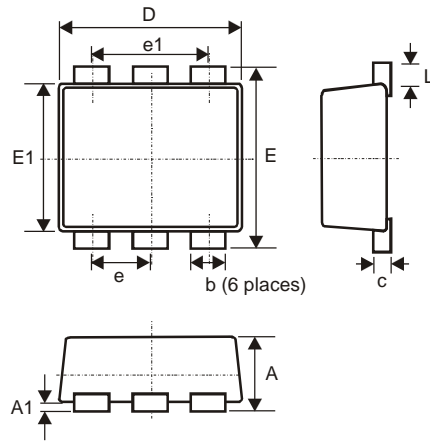
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.11 0.34	0.18 0.4	V	I <sub>F</sub> = 10μA, T <sub>J</sub> = +25°C I <sub>F</sub> = 10mA, T <sub>J</sub> = +25°C
Leakage Current (Note 6)	I <sub>R</sub>	—	0.35 0.25 2.32	15 11 100	μA	V <sub>R</sub> = 10V V <sub>R</sub> = 5V, T <sub>J</sub> = +25°C V <sub>R</sub> = 5V, T <sub>J</sub> = +50°C
Total Capacitance	C <sub>T</sub>	—	2.93	8.0	pF	f = 1MHz, V <sub>R</sub> = 1V
Reverse Recovery Time	t <sub>rr</sub>	—	1.49	5.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>R(REC)</sub> = 1mA, R <sub>L</sub> = 100Ω

Notes: 5. FR-4 PCB, 2oz. Copper, 10 mm<sup>2</sup> pad layout, minimum recommended pad layout per <http://www.diodes.com>.  
6. FR-4 PCB, 2oz. Copper, 100mm<sup>2</sup> pad layout.  
7. Short duration pulse test used to minimize self-heating effect.



**Package Outline Dimensions**

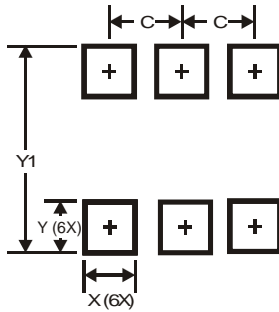
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT963			
Dim	Min	Max	Typ
A	0.40	0.50	0.45
A1	0	0.05	-
c	0.120	0.180	0.150
D	0.95	1.05	1.00
E	0.95	1.05	1.00
E1	0.75	0.85	0.80
L	0.05	0.15	0.10
b	0.10	0.20	0.15
e	0.35 Typ		
e1	0.70 Typ		
All Dimensions in mm			

**Suggested Pad Layout**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
C	0.350
X	0.200
Y	0.200
Y1	1.100

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