

**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



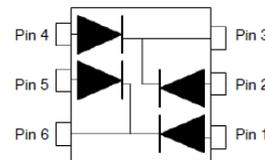
Top View

**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)

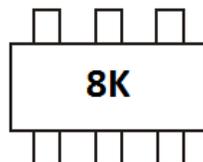


Internal Schematic

**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** (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$	15	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current	$I_O$	100	mA
Repetitive Peak Forward Current	$I_{FRM}$	300	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	2	A

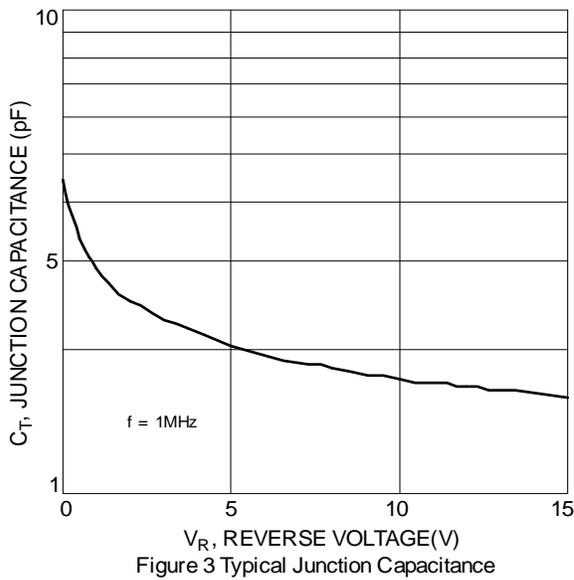
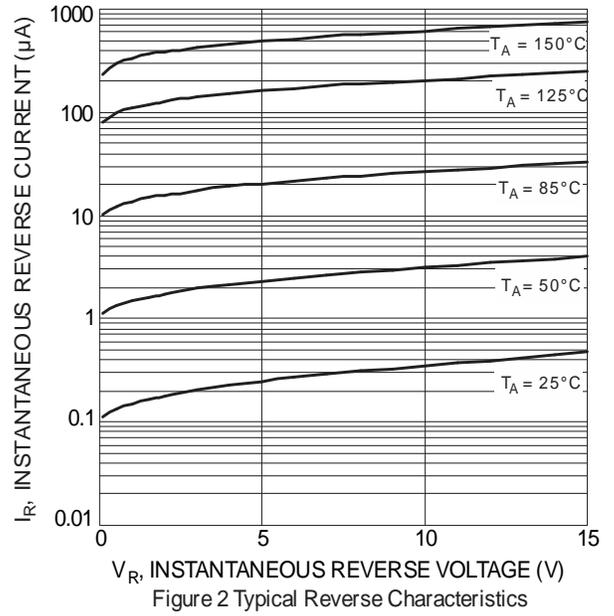
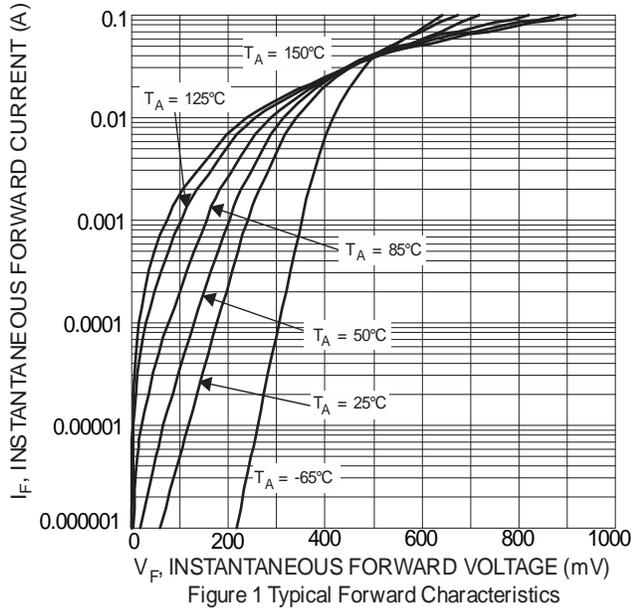
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	$P_D$	260	mW
Typical Thermal Resistance Junction to Ambient (Note 5) $T_A = +25^\circ\text{C}$	$R_{\theta JA}$	480	$^\circ\text{C/W}$
Power Dissipation (Note 6)	$P_D$	360	mW
Typical Thermal Resistance Junction to Ambient (Note 6) $T_A = +25^\circ\text{C}$	$R_{\theta JA}$	347	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

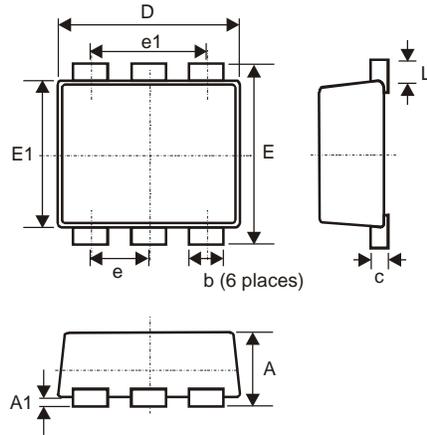
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	—	0.11 0.34	0.18 0.4	V	$I_F = 10\mu\text{A}, T_J = +25^\circ\text{C}$ $I_F = 10\text{mA}, T_J = +25^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	0.35 0.25 2.32	15 11 100	$\mu\text{A}$	$V_R = 10\text{V}$ $V_R = 5\text{V}, T_J = +25^\circ\text{C}$ $V_R = 5\text{V}, T_J = +50^\circ\text{C}$
Total Capacitance	$C_T$	—	2.93	8.0	pF	$f = 1\text{MHz}, V_R = 1\text{V}$
Reverse Recovery Time	$t_{rr}$	—	1.49	5.0	ns	$I_F = I_R = 10\text{mA}$ , $I_{R(REC)} = 1\text{mA}, R_L = 100\Omega$

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**

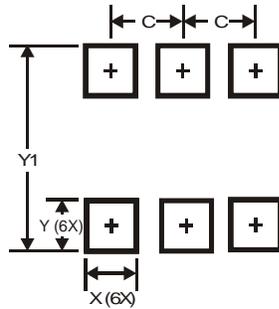
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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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