

**Features**

- Fast Switching Speed
- Ultra-Small Surface Mount Package (1.0 x 0.8mm)
- Ultra-Low Profile Package (0.45mm)
- Low Forward Voltage: typ of 0.62V at  $I_F = 1.0\text{mA}$
- Fast Reverse Recovery: max of 4.0ns
- Low Capacitance: max of 3.0pF
- Low Reverse Leakage Current
- Ideal for Battery Powered Portable Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Notes 2 & 3)**

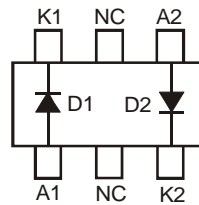
**Mechanical Data**

- 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
- Weight: 0.003 grams (Approximate)

SOT963



Top View



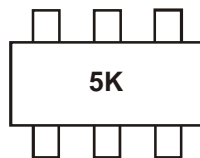
Internal Schematic

**Ordering Information** (Note 4)

Part Number	Case	Packaging
1SS361UDJ-7	SOT963	10,000/Tape & Reel

- Notes:
1. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead.
  2. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  3. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
  4. For packaging details, go to our website at <http://www.diodes.com>.

**Marking Information**



5K = Product Type Marking Code

### Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	85	V
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	80	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	57	V
Forward Continuous Current	I <sub>FM</sub>	250	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs	I <sub>FSM</sub>	2.0	A

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	250	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	500	°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
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	80	—	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	—	0.62	—	V	I <sub>F</sub> = 1.0mA
		—	0.75	—		I <sub>F</sub> = 10mA
		—	0.95	1.23		I <sub>F</sub> = 100mA
Leakage Current (Note 6)	I <sub>R</sub>	—	0.011	0.5	μA	V <sub>R</sub> = 30V
		—	0.013	1.0		V <sub>R</sub> = 80V
Total Capacitance	C <sub>T</sub>	—	0.7	3.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	1.7	4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
6. Short duration pulse test used to minimize self-heating effect.

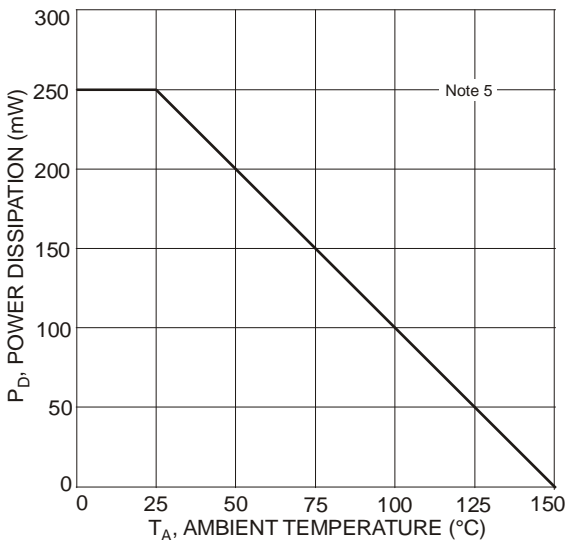


Fig. 1 Power Derating Curve

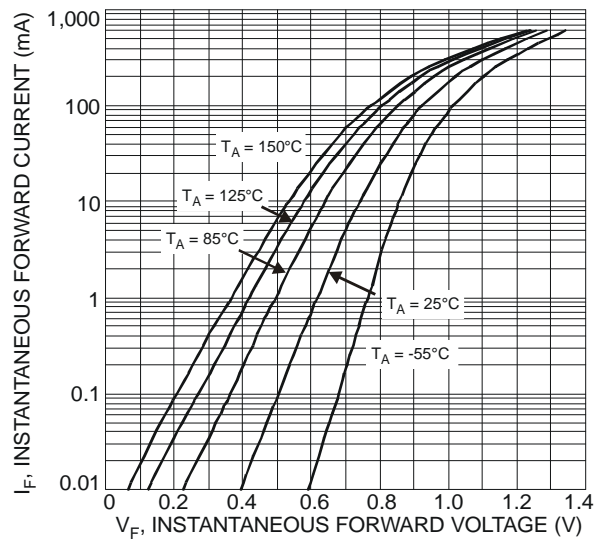


Fig. 2 Typical Forward Characteristics - Per Element

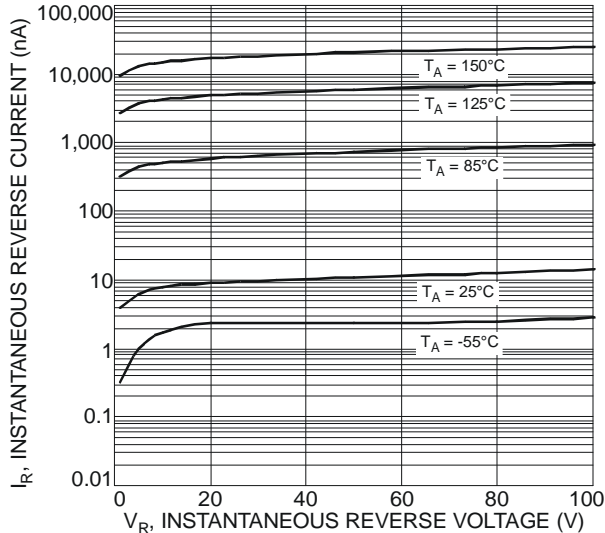


Fig. 3 Typical Reverse Characteristics - Per Element

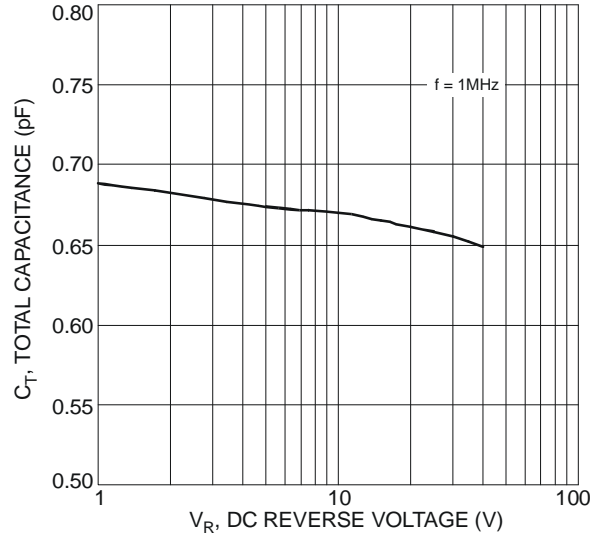
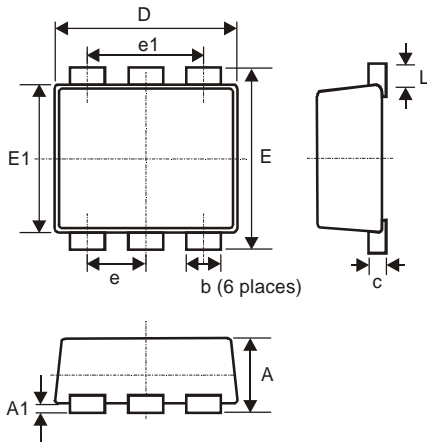


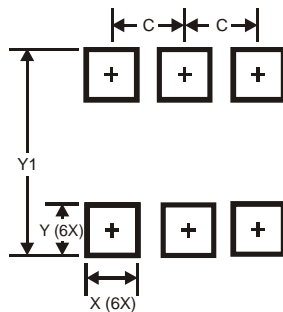
Fig. 4 Typical Total Capacitance vs. Reverse Voltage - Per Element

**Package Outline Dimensions**



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**



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

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