DUAL SURFACE MOUNT SWITCHING DIODE

Features

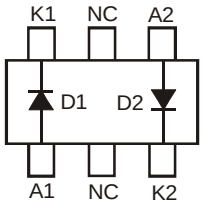
- Ultra-Small Surface Mount Package (1.0 x 0.8mm)
- Ultra-Low Profile Package (0.45mm)
- Ultra Low Leakage Current (5nA @ V_R = 75V)
- Low Capacitance
- Ideal for Battery Powered Portable Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Notes 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



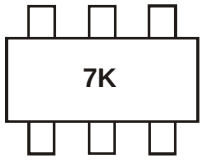
Internal Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
BAS116UDJ-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



7K = Product Type Marking Code

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	85	V
RMS Reverse Voltage		$V_{R(RMS)}$	60	V
Forward Continuous Current (Note 5)		I_{FM}	215	mA
Repetitive Peak Forward Current		I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0ms @ t = 1.0s	I_{FSM}	4.0 1.0 0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	250	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	85	—	—	V	I_R = 100μA
Forward Voltage	V_F	—	—	0.95 1.05 1.15 1.35	V	I_F = 1.0mA I_F = 10mA I_F = 50mA I_F = 150mA
Leakage Current (Note 6)	I_R	—	0.9 16	5.0 500	nA nA	V_R = 75V V_R = 75V, T_J = 150°C
Total Capacitance	C_T	—	2	—	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	0.12	3.0	μs	I_F = I_R = 10mA, I_{rr} = 0.1 x I_R, R_L = 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.

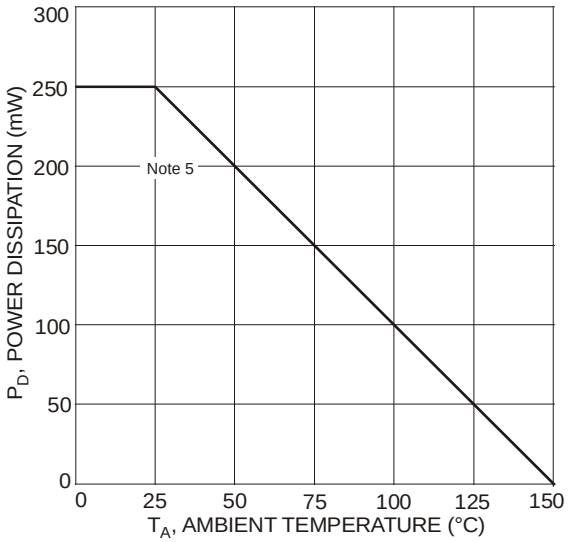


Fig. 1 Power Dissipation vs. Ambient Temperature

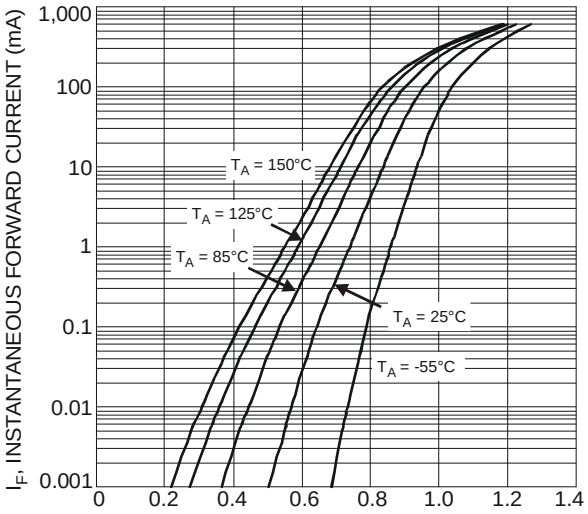


Fig. 2 Typical Forward Characteristics - Per Element

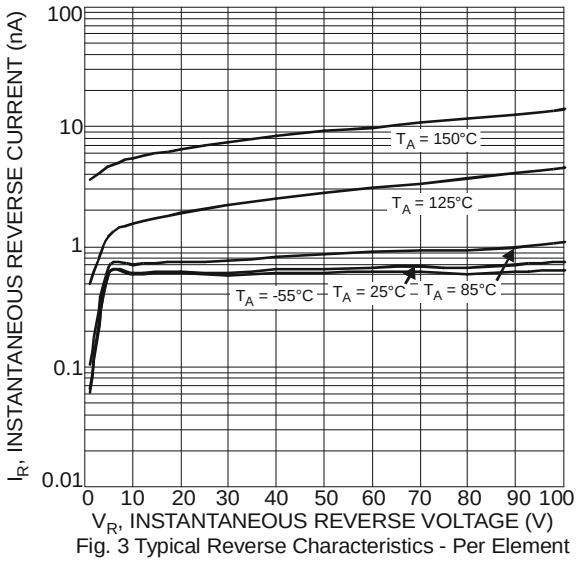


Fig. 3 Typical Reverse Characteristics - Per Element

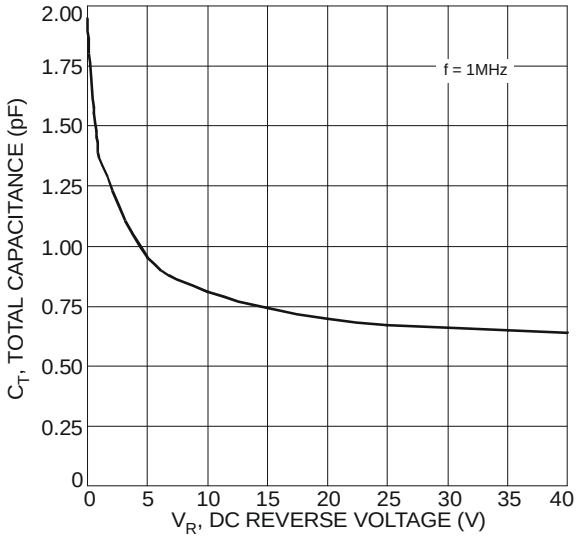
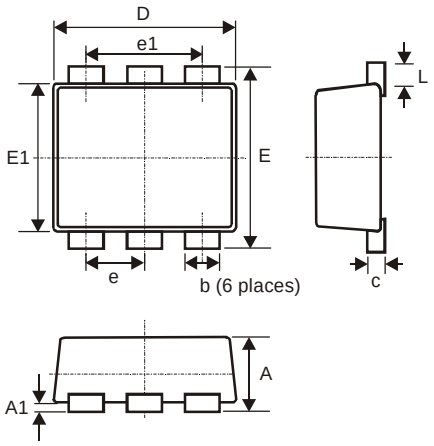


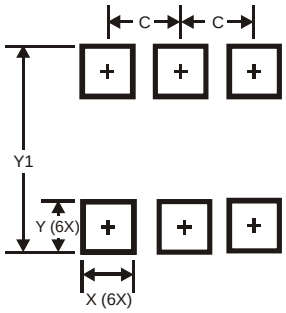
Fig. 4 Typical Total Capacitance vs. Reverse Voltage - Per Element

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