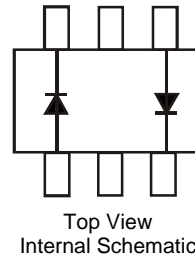


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- High Reverse Breakdown Voltage
- Low Leakage Current
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Notes 2 and 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOT363
- 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 Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.003 grams (approximate)

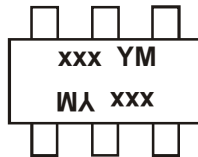


### Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
BAS20DW-7	Commercial	SOT363	3,000/Tape & Reel
BAS20DW-13	Commercial	SOT363	10,000/Tape & Reel
BAS20DWQ-13	Automotive	SOT363	10,000/Tape & Reel
BAS21DW-7	Commercial	SOT363	3,000/Tape & Reel

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
  3. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
  4. For packaging details, go to our website at <http://www.diodes.com>.

### Marking Information



xxx = Product Type Marking Code:  
 BAS20DW Marking: KT2 or KT3  
 BAS21DW Marking: KT3  
 YM = Date Code Marking  
 Y = Year (ex: Y = 2011)  
 M = Month (ex: 9 = September)

#### Date Code Key

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Code	S	T	U	V	W	X	Y	Z	A	B	C	
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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

Characteristic	Symbol	BAS20DW	BAS21DW	Unit
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	250	V
Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RWM</sub> V <sub>R</sub>	150	200	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	106	141	V
Forward Continuous Current	I <sub>FM</sub>	400		mA
Average Rectified Output Current	I <sub>O</sub>	200		mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	2.5		A
@ t = 1.0μs		0.5		
Repetitive Peak Forward Surge Current	I <sub>FRM</sub>	625		mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	625	°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	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	BAS20DW BAS21DW	V <sub>(BR)R</sub>	200 250	—	V	I <sub>R</sub> = 100μA
Forward Voltage		V <sub>F</sub>	—	1.0 1.25	V	I <sub>F</sub> = 100mA I <sub>F</sub> = 200mA
Reverse Current @ Rated DC Blocking Voltage (Note 6)		I <sub>R</sub>	—	100 15	nA μA	T <sub>j</sub> = 25°C T <sub>j</sub> = 100°C
Total Capacitance		C <sub>T</sub>	—	5.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time		t <sub>rr</sub>	—	50	ns	I <sub>F</sub> = I <sub>R</sub> = 30mA, I <sub>tr</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/datasheets/ap02001.pdf>.  
6. Short duration pulse test used to minimize self-heating effect.

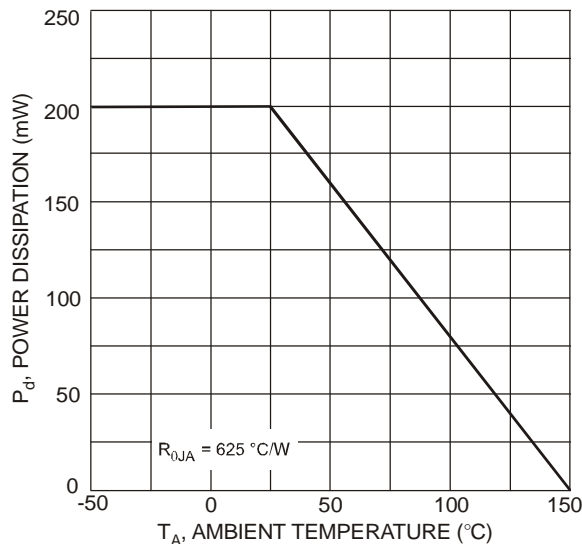


Fig. 1 Derating Curve - Total

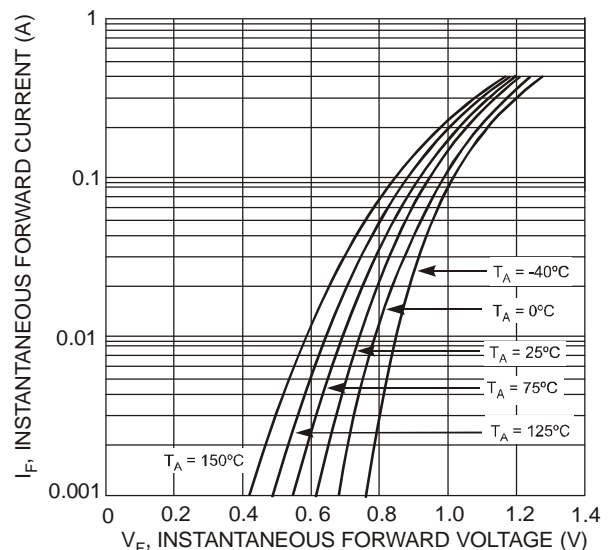


Fig. 2 Typical Forward Characteristics

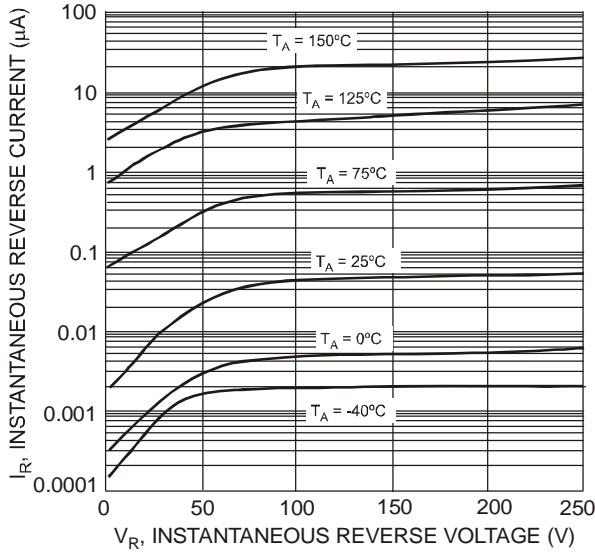


Fig. 3 Typical Reverse Characteristics

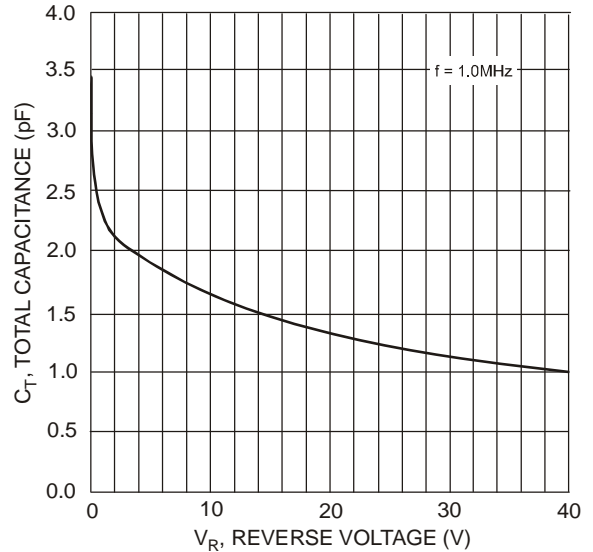
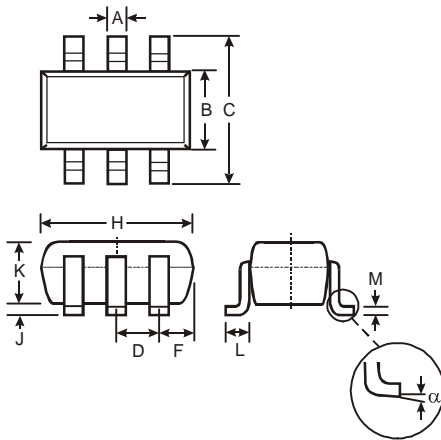


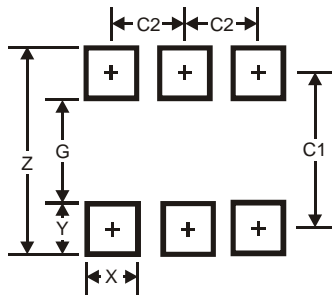
Fig. 4 Typical Capacitance vs. Reverse Voltage

**Package Outline Dimensions**



SOT363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
$\alpha$	0°	8°
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

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