



# THE DATASHEET OF BAW101Q-7

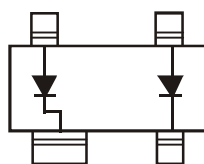


## Features

- Fast Switching Speed
- High Reverse Breakdown Voltage
- Two Electrically Isolated Elements in a Single Compact Package
- Low Leakage Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

## Mechanical Data

- Case: SOT143
- Case Material: Molded Plastic, "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram Below
- Weight: 0.008 grams (Approximate)



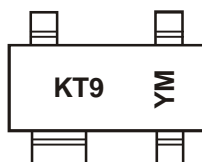
Device Schematic

## Ordering Information (Notes 4 & 5)

Part Number	Compliance	Case	Packaging
BAW101Q-7	Automotive	SOT143	3,000/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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to [http://www.diodes.com/product\\_compliance\\_definitions.html](http://www.diodes.com/product_compliance_definitions.html).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



KT9 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: D = 2016)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2016	2017	2018	2019	2020	2021	2022
Code	D	E	F	G	H	I	J

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	Value	Unit
Repetitive Peak Reverse Voltage	Single Diode	V <sub>RRM</sub>	300	V
	Series Connection		600	
Working Peak Reverse Voltage DC Blocking Voltage	Single Diode	V <sub>RWM</sub>	300	V
	Series Connection		V <sub>R</sub>	
RMS Reverse Voltage		V <sub>R(RMS)</sub>	212	V
Forward Current (Note 6)	Single Diode Loaded	I <sub>F</sub>	250	mA
	Double Diodes Loaded		140	
Non-Repetitive Peak Forward Surge Current Square Wave @ t = 1.0μs		I <sub>FSM</sub>	4.5	A
Repetitive Peak Forward Current (Note 6)		I <sub>FRM</sub>	625	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	400	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	312	°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 7)	V <sub>(BR)R</sub>	300	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	—	1.1	V	I <sub>F</sub> = 100mA
Reverse Current (Note 7)	I <sub>R</sub>	—	150	nA	V <sub>R</sub> = 250V V <sub>R</sub> = 250V, T <sub>J</sub> = +150°C
		—	75	μA	
Total Capacitance	C <sub>T</sub>	—	2.0	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>RR</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

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

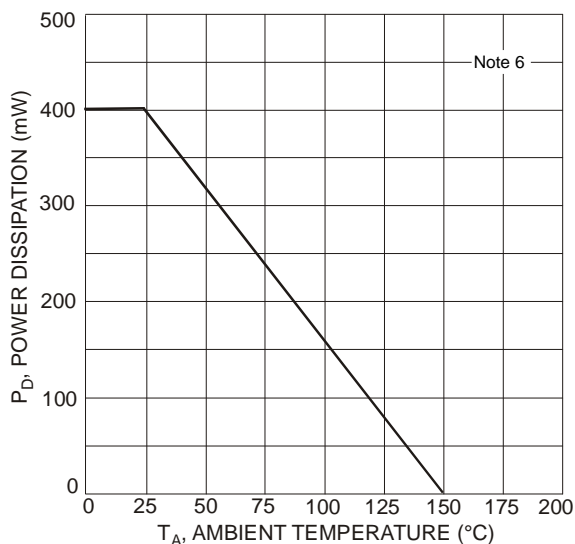


Fig. 1 Power Derating Curve, Total Package

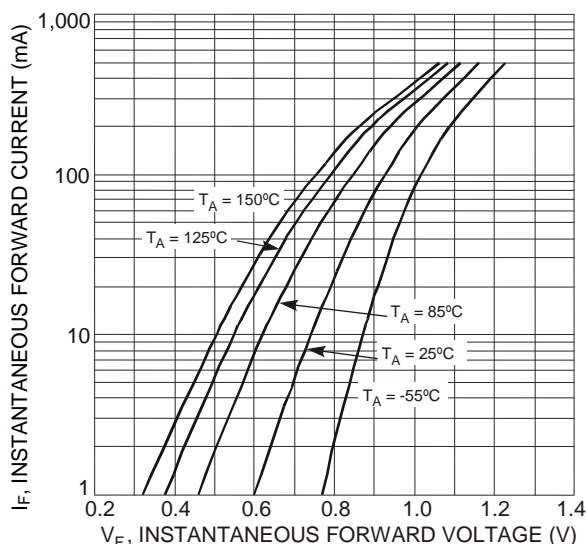


Fig. 2 Typical Forward Characteristics, Per Element

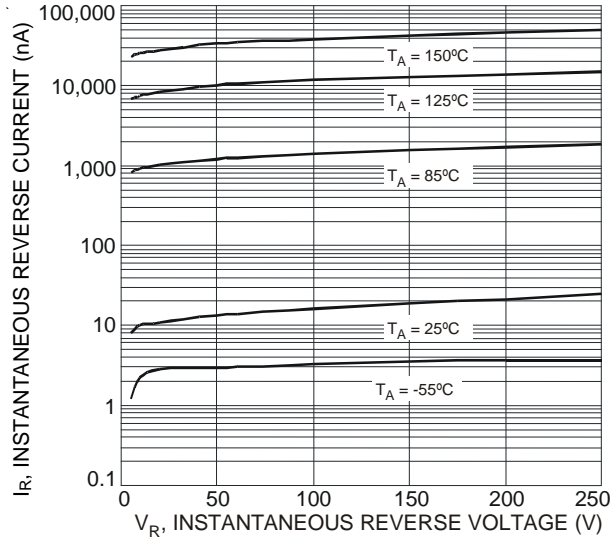


Fig. 3 Typical Reverse Characteristics, Per Element

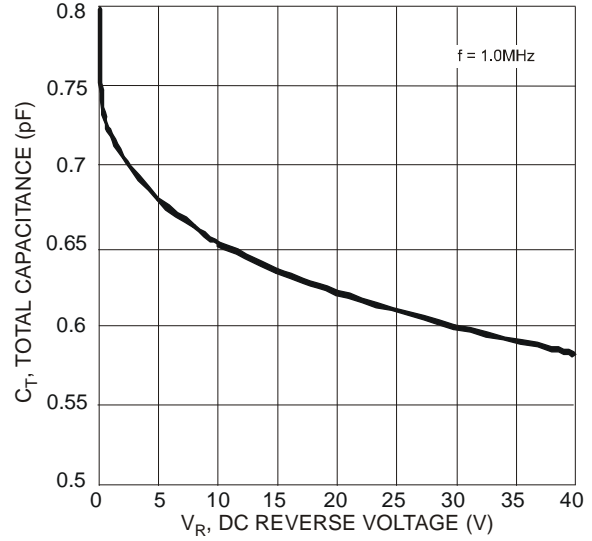
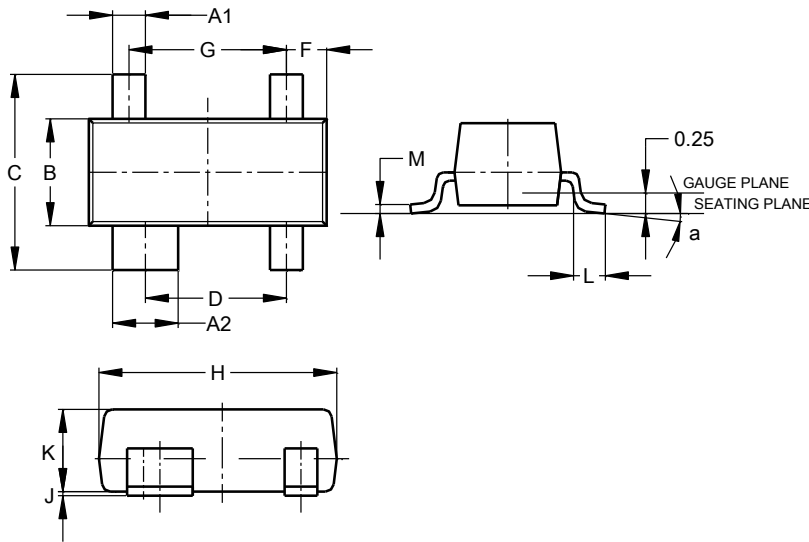


Fig. 4 Typical Total Capacitance vs. Reverse Voltage, Per Element

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SOT143**

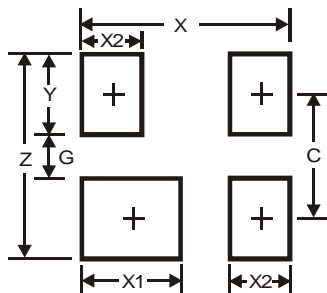


SOT143			
Dim	Min	Max	Typ
A1	0.37	0.51	0.400
A2	0.77	0.93	0.800
B	1.20	1.40	1.30
C	2.28	2.48	2.38
D	1.58	1.83	1.72
F	0.45	0.60	0.49
G	1.78	2.03	1.92
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.89	1.00	-
L	0.46	0.60	0.50
M	0.085	0.18	0.11
a	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SOT143**



Dimensions	Value (in mm)
Z	2.70
G	1.30
X	2.50
X1	1.00
X2	0.60
Y	0.70
C	2.00

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