SURFACE MOUNT SCHOTTKY BARRIER DIODE ARRAYS

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_F (mA)	$V_{F(MAX)}$ (V)	$I_{R(MAX)}$ (µA)
30	200	1	2.0

Features and Benefits

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **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)**

Description

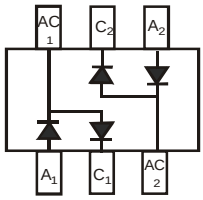
200mA surface mount Schottky Barrier Diode in SOT363 package, offers low turn-on voltage and fast switching capability, designed with PN Junction Guard Ring for Transient and ESD Protection, totally lead-free finish and RoHS compliant, "Green" device.

Mechanical Data

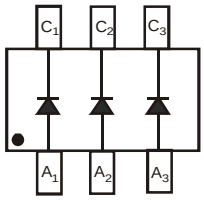
- Case: SOT363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.006 grams (Approximate)



Top View



BAT54SDWQ*



BAT54TWQ

*Symmetrical configuration, no orientation indicator.

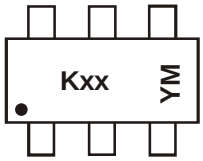
Ordering Information (Note 5)

Part Number	Application	Case	Packaging
BAT54SDWQ-7-F	Automotive	SOT363	3,000/Tape & Reel
BAT54TWQ-7-F	Automotive	SOT363	3,000/Tape & Reel

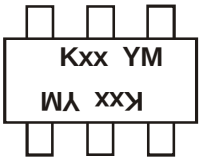
Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- 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 https://www.diodes.com/quality/.
5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

BAT54TWQ



BAT54SDWQ



Kxx = Product Type Marking Code
For Symmetrical Configuration, No Orientation Indicator
KL8 = BAT54SDWQ
KLA = BAT54TWQ
YM = Date Code Marking
Y = Year (ex: F = 2018)
M = Month (ex: 9 = September)

Date Code Key

Year	2001	2002	…	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Code	M	N	…	Y	Z	A	B	C	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

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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	30	V
Forward Continuous Current (Note 6)	I_F	200	mA
Repetitive Peak Forward Current (Note 6)	I_{FRM}	300	mA
Forward Surge Current (Note 6) @ t < 1.0s	I_{FSM}	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +125	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	30	—	—	V	I_R = 100µA
Forward Voltage (Note 7)	V_F	—	—	240 320 400 500 1,000	mV	I_F = 0.1mA I_F = 1mA I_F = 10mA I_F = 30mA I_F = 100mA
Reverse Leakage Current (Note 7)	I_R	—	—	2.0	µA	V_R = 25V
Total Capacitance	C_T	—	—	10	pF	V_R = 1.0V, f = 1.0MHz
Reverse Recovery Time	t_{RR}	—	—	5.0	ns	I_F = 10mA through I_R = 10mA to I_R = 1.0mA, R_L = 100Ω

Notes: 6. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; 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.

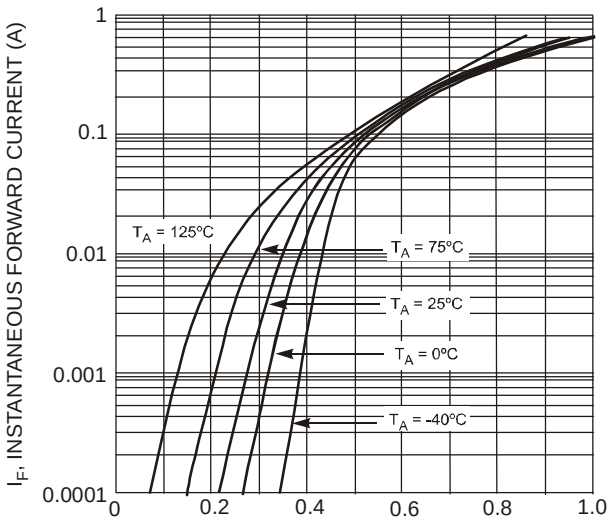


Fig. 1 Typical Forward Characteristics

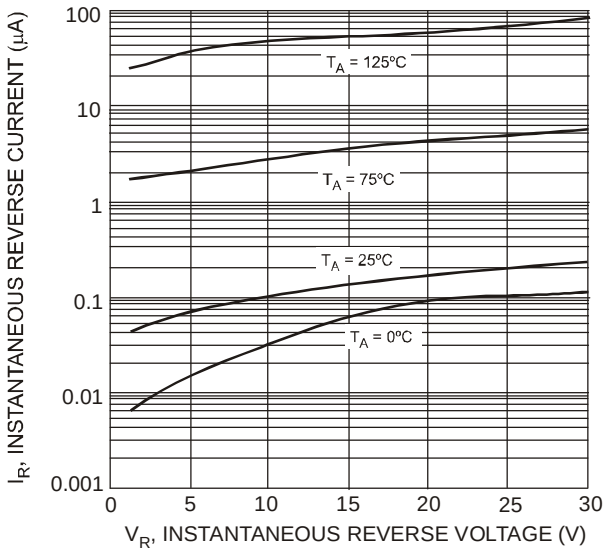


Fig. 2 Typical Reverse Characteristics

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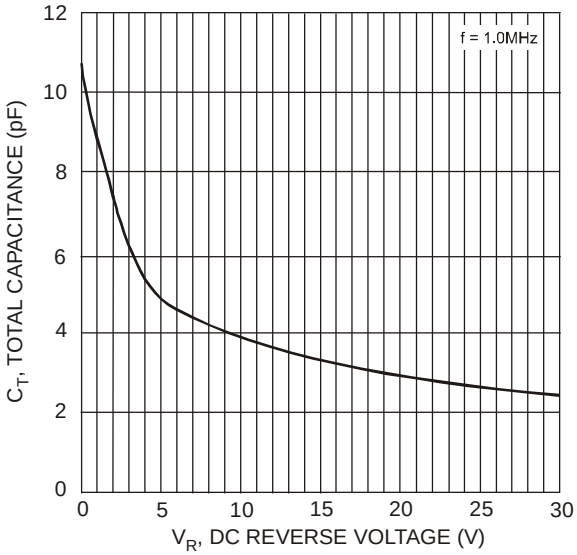


Fig. 3 Total Capacitance vs. Reverse Voltage

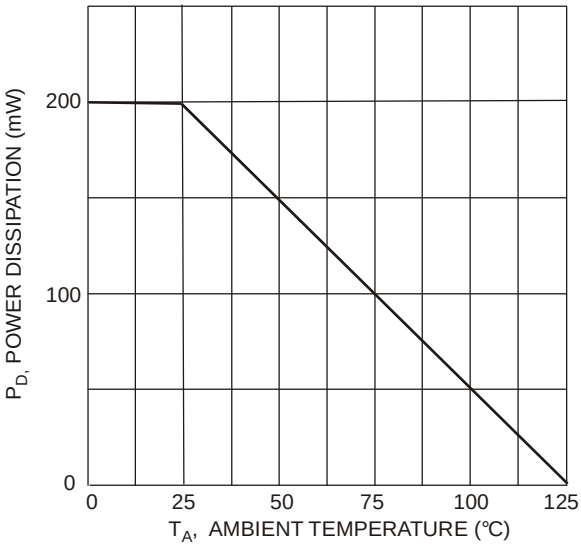


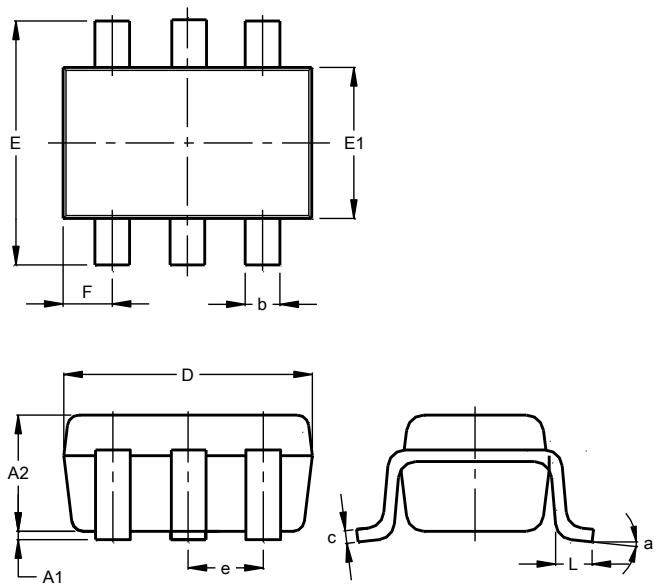
Fig. 4 Power Derating Curve

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Package Outline Dimensions

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

SOT363

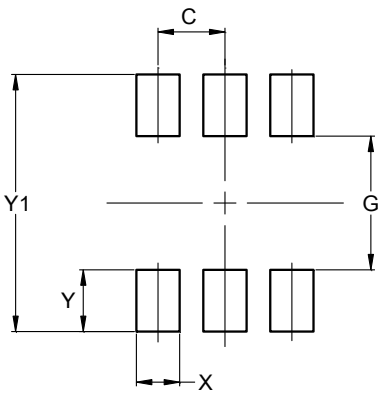


SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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