

Vishay Semiconductors



Features

- These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
 BoHS
- These diodes are also available in the DO-35 COMPLIANT case with the type designations BAT42 to BAT43 and in MiniMELF SOD-80 case with the type designations LL42 to LL43
- · For general purpose applications
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Mechanical Data

Case: SOD-123

Weight: approx. 10.3 mg

Packaging Codes/Options:

GS18/10 k per 13" reel (8 mm tape), 10 k/box GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Ordering code	Type Marking	Remarks
BAT42W-V	BAT42W-V-GS18 or BAT42W-V-GS08	L2	Tape and Reel
BAT43W-V	BAT43W-V-GS18 or BAT43W-V-GS08	L3	Tape and Reel

Absolute Maximum Ratings

 $T_{amb} = 25 \ ^{\circ}C$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit	
Repetitive peak reverse voltage		V _{RRM}	30	V	
Forward continuous current		١ _F	200 ¹⁾	mA	
Repetitive peak forward current	t _p < 1 s, δ < 0.5	I _{FRM}	500 ¹⁾	mA	
Surge forward current	t _p < 10 ms	I _{FSM}	4 ¹⁾	А	
Power dissipation ¹⁾	T _{amb} = 65 °C	P _{tot}	200 ¹⁾	mW	

¹⁾ Valid provided that electrodes are kept at ambient temperature



17431

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Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit	
Thermal resistance junction to ambient air		R _{thJA}	300 ¹⁾	K/W	
Junction temperature		Tj	125	°C	
Ambient operating temperature range		T _{amb}	- 55 to + 125	°C	
Storage temperature range		T _{stg}	- 55 to + 150	٥C	

¹⁾ Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Тур.	Max	Unit
Reverse breakdown voltage	I _R = 100 μA (pulsed)		V _(BR)	30			V
Leakage current ¹⁾	V _R = 25 V		I _R			0.5	μA
	$V_{R} = 25 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$		I _R			100	μA
Forward voltage ¹⁾	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	BAT42W-V	V _F			400	mV
	I _F = 50 mA	BAT42W-V	V _F			650	mV
	I _F = 2 mA	BAT43W-V	V _F	260		330	mV
	l _F = 15 mA	BAT43W-V	V _F			450	mV
Diode capacitance	V _R = 1 V, f = 1 MHz		CD		7		pF
Reverse recovery time	$I_F = 10 \text{ mA}, I_R = 10 \text{ mA},$ $I_R = 1 \text{ mA}, R_L = 100 \Omega$		t _{rr}			5	ns
Rectification efficieny	$\label{eq:RL} \begin{split} \textbf{R}_{L} &= 15 \text{ k}\Omega, \textbf{C}_{L} = 300 \text{ pF}, \\ \textbf{f} &= 45 \text{ MHz}, \textbf{V}_{\text{RF}} = 2 \text{ V} \end{split}$		η_v	80			%

¹⁾ Pulse test $t_p < 300 \ \mu s, t_p/T < 0.02$

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

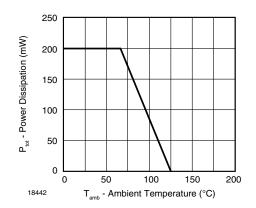
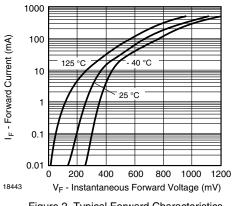
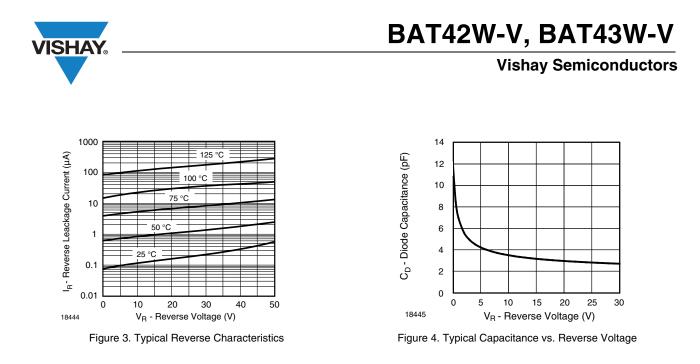
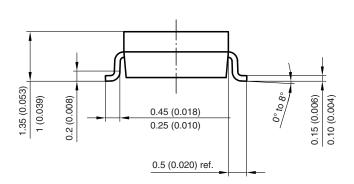


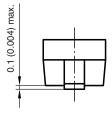
Figure 1. Admissible Power Dissipation vs. Ambient Temperature

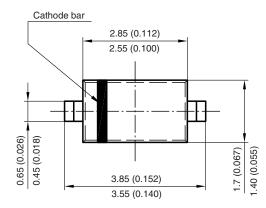




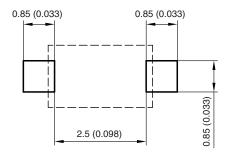








Mounting Pad Layout



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