BAT42, BAT43

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Small Signal Schottky Diode



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LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: DO-35 (DO-204AH) Weight: approx. 125 mg Cathode band color: black Packaging codes/options: TR/10K per 13" reel (52 mm tape), 50K/box TAP/10K per ammo tape (52 mm tape), 50K/box

PARTS TABLE				
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAT42	BAT42-TR or BAT42-TAP	Single	BAT42	Tape and reel/ammopack
BAT43	BAT43-TR or BAT43-TAP	Single	BAT43	Tape and reel/ammopack

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Repetitive peak reverse voltage		V _{RRM}	30	V	
Forward continuous current ⁽¹⁾		I _F	200	mA	
Repetitive peak forward current ⁽¹⁾	t _p < 1 s, δ < 0.5	I _{FRM}	500	mA	
Surge forward current (1)	t _p < 10 ms	I _{FSM}	4	A	
Power dissipation ⁽¹⁾	T _{amb} = 65 °C	P _{tot}	200	mW	

Note

⁽¹⁾ Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

THERMAL CHARACTERISTICS ($T_{amb} = 25 \text{ °C}$, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air ⁽¹⁾		R _{thJA}	300	K/W	
Junction temperature		Tj	125	°C	
Ambient operating temperature range		T _{amb}	-65 to +125	°C	
Storage temperature range		T _{stg}	-65 to +150	°C	

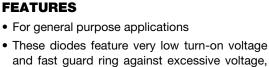
Note

⁽¹⁾ Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

Rev. 1.9, 16-Nov-2021

1

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such as electrostatic discharges



- These diodes are also available in the SOD-123 case with the type designations BAT42W-V to BAT43W-V and in MiniMELF SOD-80 case with the type designations LL42 to LL43
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

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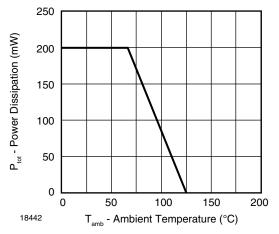
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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I _R = 100 μA (pulsed)		V _(BR)	30			V
Leakage current ⁽¹⁾	V _R = 25 V		I _R			0.5	μA
	V _R = 25 V, T _j = 100 °C		I _R			100	μA
	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	BAT42	V _F			400	mV
Forward voltage ⁽¹⁾	I _F = 50 mA	BAT42	V _F			650	mV
	I _F = 2 mA	BAT43	V _F	260		330	mV
	I _F = 15 mA	BAT43	V _F			450	mV
Diode capacitance	$V_R = 1 V$, f = 1 MHz		CD		7		pF
Reserve recovery time	I_F = 10 mA, I_R = 10 mA, i_R = 1 mA, R_L = 100 Ω		t _{rr}			5	ns
Rectification efficieny	$\label{eq:RL} \begin{array}{l} R_{L} = 15 \; k\Omega, \; C_{L} = 300 \; pF, \\ f = 45 \; MHz, \; V_{RF} = 2 \; V \end{array}$		η_{v}	80			%

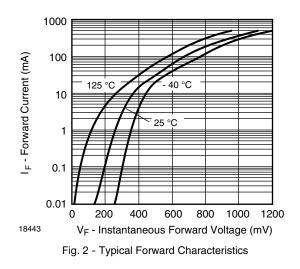
Note

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

TYPICAL CHARACTERISTICS ($T_{amb} = 25 \text{ °C}$, unless otherwise specified)







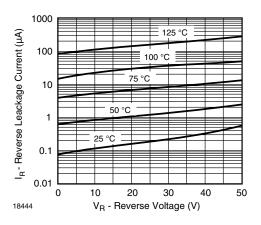
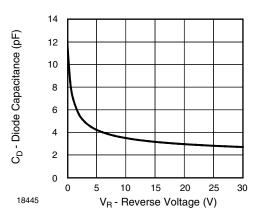


Fig. 3 - Typical Reverse Characteristics





Rev. 1.9, 16-Nov-2021

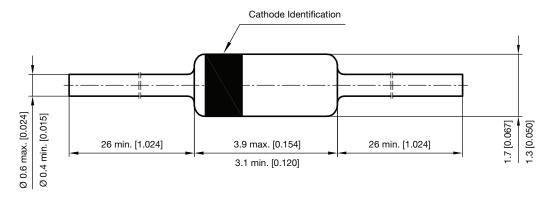
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PACKAGE DIMENSIONS in millimeters (inches): DO-35 (DO-204AH)



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