

Small Signal Schottky Diode



FEATURES

- For general purpose applications
- These diodes feature very low turn-on voltage and fast guard ring against excessive voltage, 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 www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

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 14" 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 ($T_{amb} = 25^{\circ}\text{C}$, 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⁾	$t_p < 1 \text{ s}, \delta < 0.5$	I_{FRM}	500	mA
Surge forward current ⁽¹⁾	$t_p < 10 \text{ ms}$	I_{FSM}	4	A
Power dissipation ⁽¹⁾	$T_{amb} = 65^{\circ}\text{C}$	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 ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R_{thJA}	300	K/W
Junction temperature		T_j	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

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100 \mu A$ (pulsed)		$V_{(BR)}$	30			V
Leakage current ⁽¹⁾	$V_R = 25 V$		I_R			0.5	μA
	$V_R = 25 V, T_j = 100^\circ C$		I_R			100	μA
Forward voltage ⁽¹⁾	$I_F = 200 mA$		V_F			1000	mV
	$I_F = 10 mA$	BAT42	V_F			400	mV
	$I_F = 50 mA$	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	$V_R = 1 V, f = 1 MHz$		C_D		7		pF
Reserve recovery time	$I_F = 10 mA, I_R = 10 mA, I_R = 1 mA, R_L = 100 \Omega$		t_{rr}			5	ns
Rectification efficieny	$R_L = 15 k\Omega, C_L = 300 pF, f = 45 MHz, V_{RF} = 2 V$		η_V	80			%

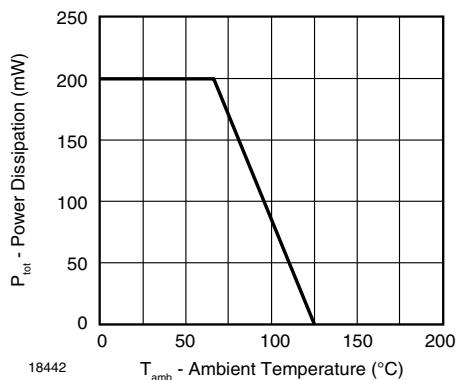
Note
⁽¹⁾ Pulse test; $t_p < 300 \mu s, t_p/T < 0.02$
TYPICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

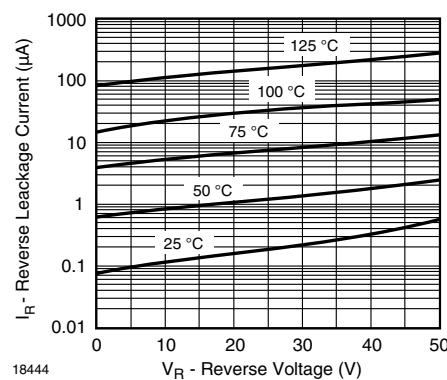


Fig. 3 - Typical Reverse Characteristics

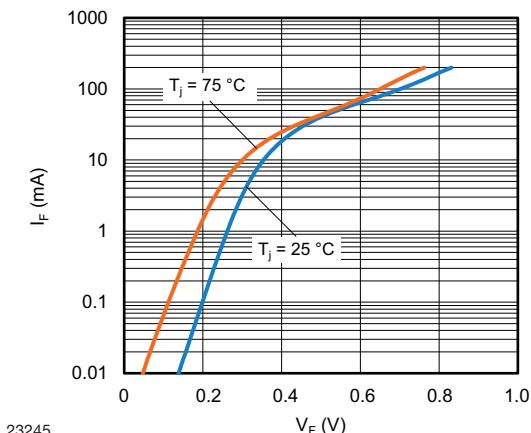


Fig. 2 - Typical Forward Characteristics

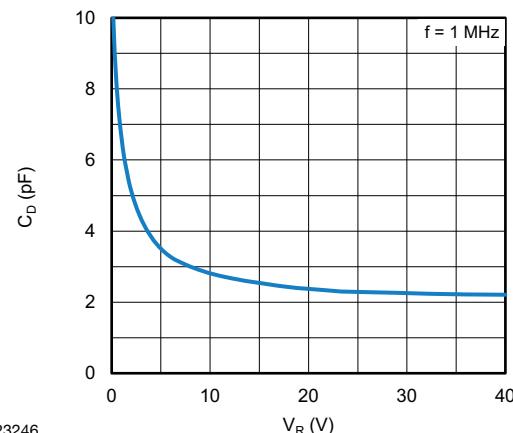
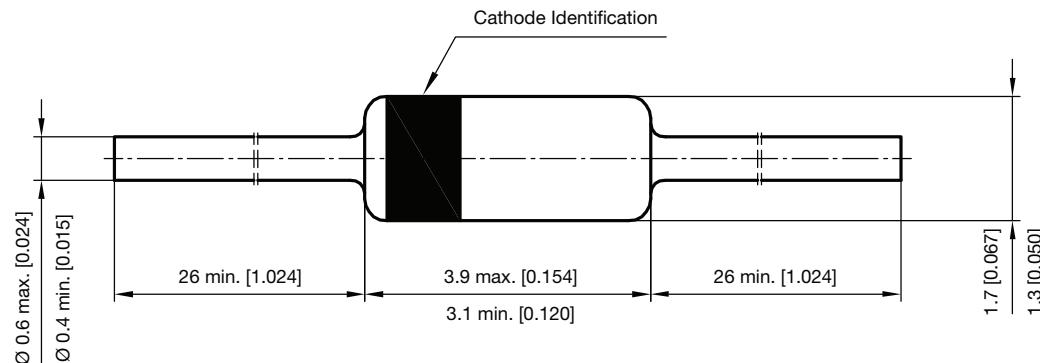


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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

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