

## Small Signal Schottky Diode



### FEATURES

- For general purpose applications
- 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
- These diodes are also available in the DO-35 (DO-204AH) case with type designations BAT42 to BAT43 and in the SOD-123 case with type designations BAT42W-V to BAT43W-V
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


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### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** MiniMELF (SOD-80)

**Weight:** approx. 31 mg

**Cathode band color:** black

**Packaging codes/options:**

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/2.5K per 7" reel (8 mm tape), 12.5K/box

### PARTS TABLE

PART	ORDERING CODE	CIRCUIT CONFIGURATION	REMARKS
LL42	LL42-GS18 or LL42-GS08	Single	Tape and reel
LL43	LL43-GS18 or LL43-GS08	Single	Tape and reel

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		$V_{RRM}$	30	V
Forward continuous current <sup>(1)</sup>		$I_F$	200	mA
Repetitive peak forward current <sup>(1)</sup>	$t_p < 1\text{ s}, \delta < 0.5$	$I_{FRM}$	500	mA
Surge forward current <sup>(1)</sup>	$t_p = 10\text{ ms}$	$I_{FSM}$	4	A
Power dissipation <sup>(1)</sup>	$T_{amb} = 65\text{ }^{\circ}\text{C}$	$P_{tot}$	200	mW

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

### THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	300	K/W
Junction temperature		$T_j$	125	$^{\circ}\text{C}$
Ambient operating temperature range		$T_{amb}$	-55 to +125	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I <sub>R</sub> = 100 μA (pulsed)		V <sub>(BR)</sub>	30			V
Leakage current (1)	V <sub>R</sub> = 25 V		I <sub>R</sub>			0.5	μA
	V <sub>R</sub> = 25 V, T <sub>j</sub> = 100 °C		I <sub>R</sub>			100	μA
Forward voltage (1)	I <sub>F</sub> = 200 mA		V <sub>F</sub>			1000	mV
	I <sub>F</sub> = 10 mA	LL42	V <sub>F</sub>			400	mV
	I <sub>F</sub> = 50 mA	LL42	V <sub>F</sub>			650	mV
	I <sub>F</sub> = 2 mA	LL43	V <sub>F</sub>	260		330	mV
	I <sub>F</sub> = 15 mA	LL43	V <sub>F</sub>			450	mV
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz		C <sub>D</sub>		7		pF
Reverse recovery time	I <sub>F</sub> = 10 mA, I <sub>R</sub> = 10 mA, i <sub>R</sub> = 1 mA, R <sub>L</sub> = 100 Ω		t <sub>rr</sub>			5	ns
Rectification efficiency	R <sub>L</sub> = 15 kΩ, C <sub>L</sub> = 300 pF, f = 45 MHz, V <sub>RF</sub> = 2 V		η <sub>v</sub>	80			%

**Note**

(1) Pulse test t<sub>p</sub> < 300 μs, t<sub>p</sub>/T < 0.02

**TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)**

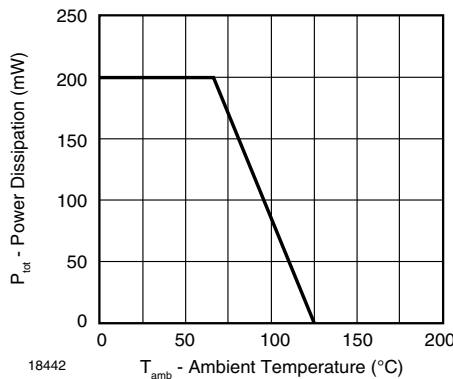


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

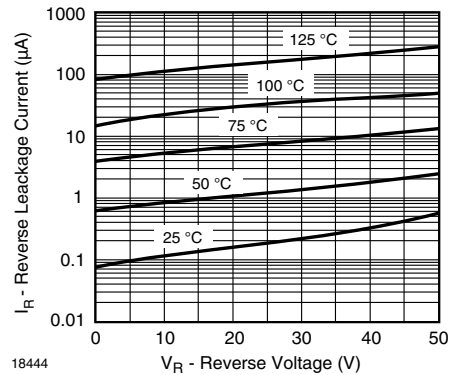


Fig. 3 - Typical Reverse Characteristics

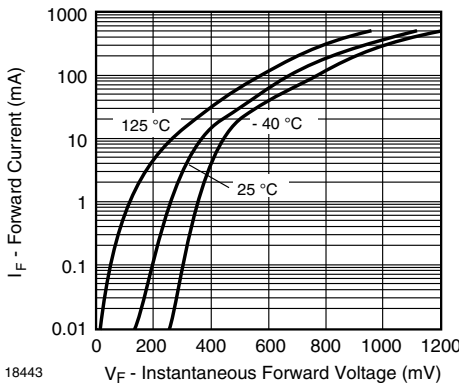


Fig. 2 - Typical Forward Characteristics

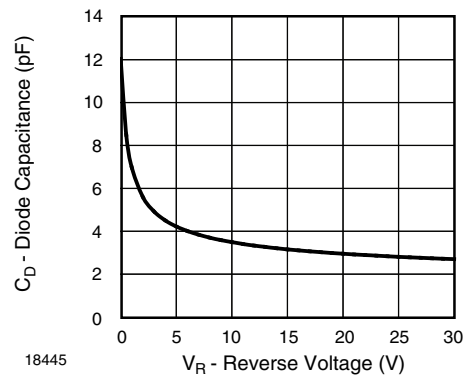
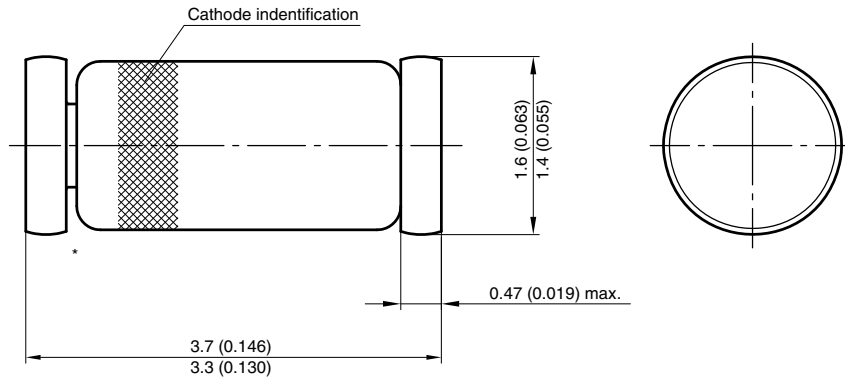
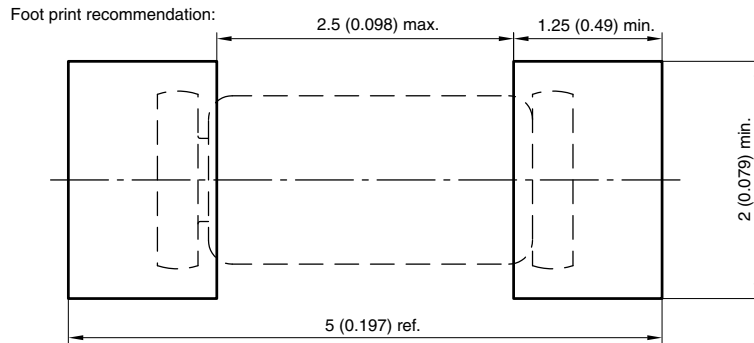


Fig. 4 - Typical Capacitance vs. Reverse Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **MiniMELF (SOD-80)**



\* The gap between plug and glass can be either on cathode or anode side



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