

## 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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ (pulsed)		$V_{(BR)}$	30			V
Leakage current <sup>(1)</sup>	$V_R = 25\text{ V}$		$I_R$			0.5	$\mu\text{A}$
	$V_R = 25\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$		$I_R$			100	$\mu\text{A}$
Forward voltage <sup>(1)</sup>	$I_F = 200\text{ mA}$		$V_F$			1000	mV
	$I_F = 10\text{ mA}$	LL42	$V_F$			400	mV
	$I_F = 50\text{ mA}$	LL42	$V_F$			650	mV
	$I_F = 2\text{ mA}$	LL43	$V_F$	260		330	mV
	$I_F = 15\text{ mA}$	LL43	$V_F$			450	mV
Diode capacitance	$V_R = 1\text{ V}, f = 1\text{ MHz}$		$C_D$		7		pF
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 10\text{ mA}, i_R = 1\text{ mA}, R_L = 100\text{ }\Omega$		$t_{rr}$			5	ns
Rectification efficiency	$R_L = 15\text{ k}\Omega, C_L = 300\text{ pF}, f = 45\text{ MHz}, V_{RF} = 2\text{ V}$		$\eta_v$	80			%

**Note**

<sup>(1)</sup> Pulse test  $t_p < 300\text{ }\mu\text{s}$ ,  $t_p/T < 0.02$

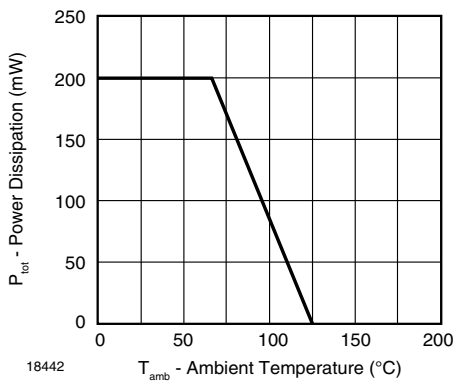
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

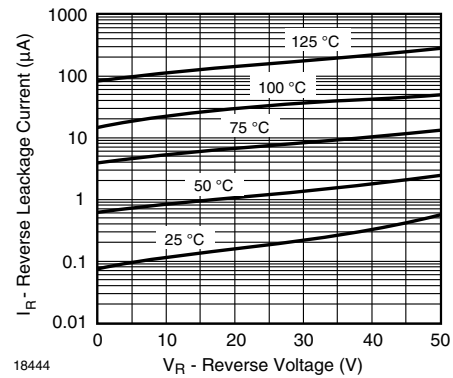


Fig. 3 - Typical Reverse Characteristics

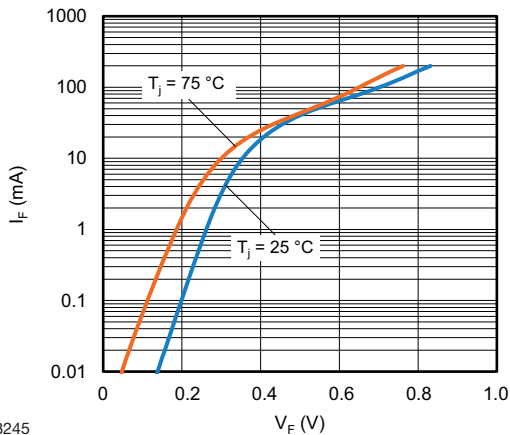


Fig. 2 - Typical Reverse Characteristics

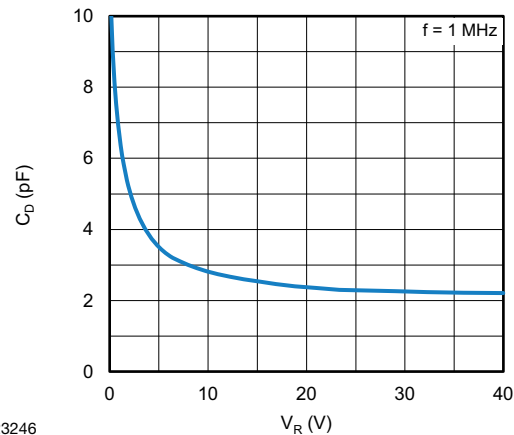
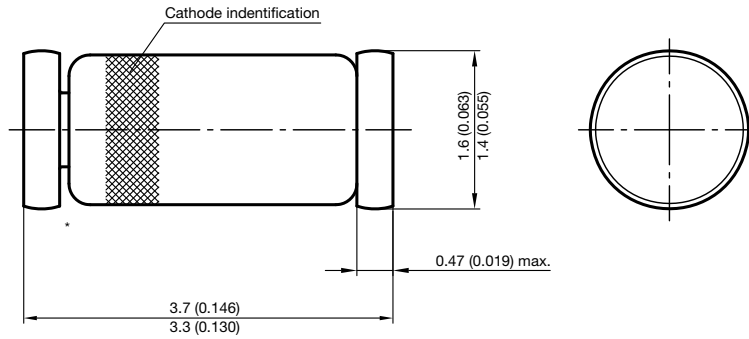


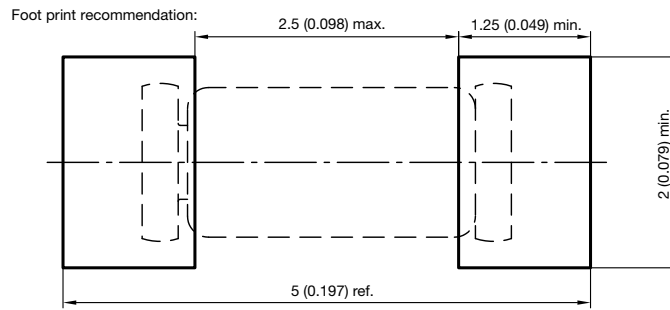
Fig. 4 - Typical Capacitance vs. Reverse Voltage



**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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