

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


RoHS
COMPLIANT

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 ⁽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⁾	$T_{amb} = 65\text{ }^{\circ}\text{C}$	P_{tot}	200	mW

Note

⁽¹⁾ 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 ⁽¹⁾		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

⁽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.	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
Forward voltage (1)	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	LL42	V _F			400	mV
	I _F = 50 mA	LL42	V _F			650	mV
	I _F = 2 mA	LL43	V _F	260		330	mV
	I _F = 15 mA	LL43	V _F			450	mV
Diode capacitance	V _R = 1 V, f = 1 MHz		C _D		7		pF
Reverse recovery time	I _F = 10 mA, I _R = 10 mA, i _R = 1 mA, R _L = 100 Ω		t _{rr}			5	ns
Rectification efficiency	R _L = 15 kΩ, C _L = 300 pF, f = 45 MHz, V _{RF} = 2 V		η _v	80			%

Note

(1) Pulse test t_p < 300 μs, t_p/T < 0.02

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

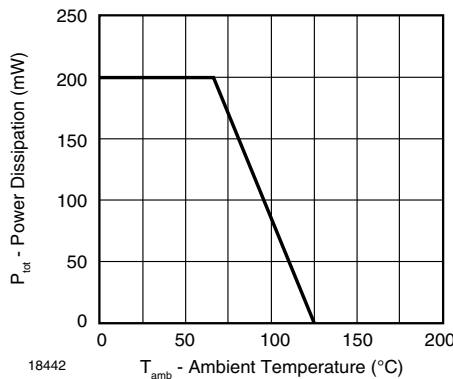


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

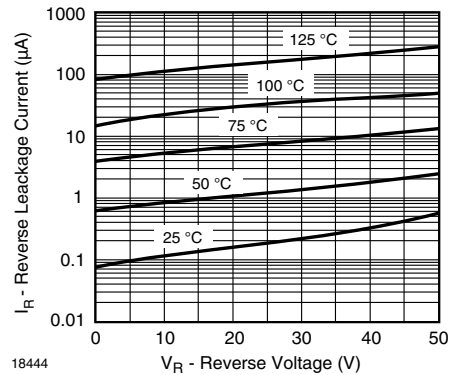


Fig. 3 - Typical Reverse Characteristics

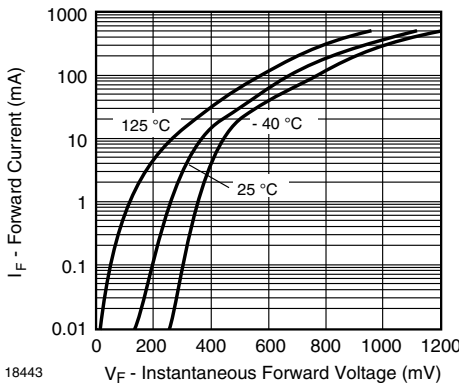


Fig. 2 - Typical Forward Characteristics

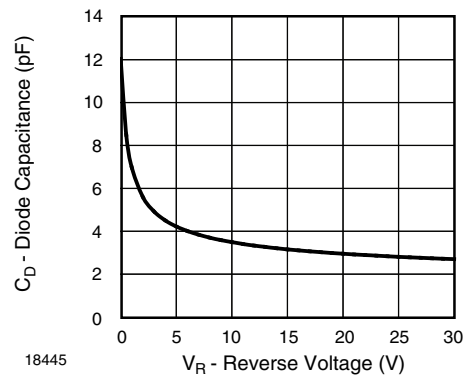
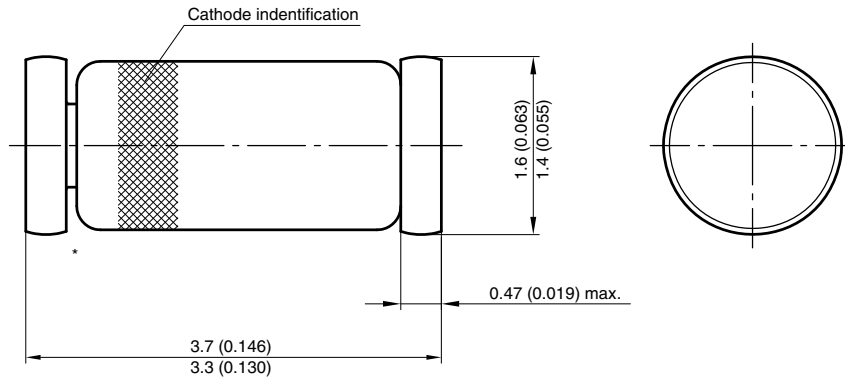
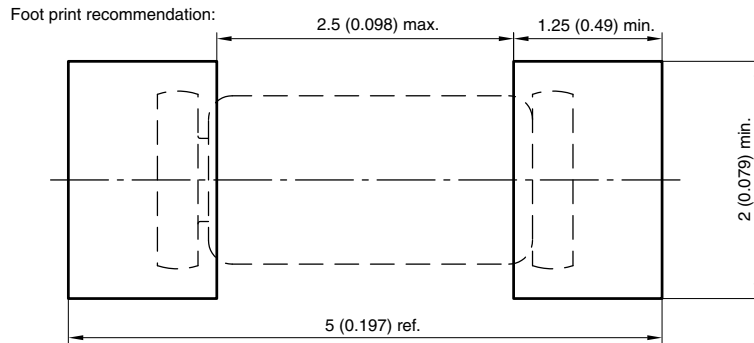


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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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