



SEMICONDUCTOR

BAT42, BAT43

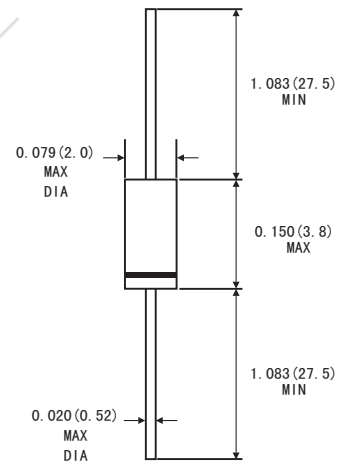
SMALL SIGNAL SCHOTTKY DIODES

FEATURES

- For general purpose applications
- These diodes features 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 MiniMELF case with type designation LL42 to LL43.
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU



DO-35



MECHANICAL DATA

- Case: DO-35 glass case
- Polarity: color band denotes cathode end
- Weight: Approx. 0.13 gram

ABSOLUTE RATINGS (LIMITING VALUES)

Dimensions in inches and (millimeters)

	Symbols	Value	Units
Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Forward Continuous Current at $T_A=25^\circ\text{C}$	I_F	200 ¹⁾	mA
Repetitive Peak Forward Current at $t_p < 1\text{s}, \delta < 0.5, T_A=25^\circ\text{C}$	I_{FRM}	500 ¹⁾	mA
Surge forward current at $t_p < 10\text{ms}, T_A=25^\circ\text{C}$	I_{FSM}	4 ¹⁾	A
Power Dissipation at $T_A=65^\circ\text{C}$	P_{tot}	200 ¹⁾	mW
Junction temperature	T_J	125	$^\circ\text{C}$
Ambient Operating temperature Range	T_A	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

ELECTRICAL CHARACTERISTICS

	Symbols	Min.	Typ.	Max.	Unis
Reverse breakdown voltage Tested with 100 μA Pulses	$V_{(BR)R}$	30			V
Forward voltage Pulse Test $t_p < 300\mu\text{s}, \delta < 2\%$ at $I_F=200\text{mA}$, at $I_F=10\text{mA}$, at $I_F=50\text{mA}$, at $I_F=2\text{mA}$, at $I_F=15\text{mA}$, <i>BAT42</i> <i>BAT42</i> <i>BAT43</i> <i>BAT43</i>	V_F V_F V_F V_F V_F	0.26		1 0.4 0.65 0.33 0.45	V V V V V
Leakage current pulse test $t_p < 300\mu\text{s}, \delta < 2\%$ at $V_R=25\text{V}$, $T_J=25^\circ\text{C}$; at $V_R=25\text{V}$, $T_J=100^\circ\text{C}$	I_R I_R			0.5 100	μA μA
Junction Capacitance at $V_R=25\text{V}, f=1\text{MHz}$	C_J		7		pF
Reverse Recovery time Form $I_F=10\text{mA}$, through $I_R=1\text{mA}, R_L=100\Omega$	t_{rr}			5	ns
Detection efficiency at $R_L=15\text{k}\Omega, C_L=300\text{pF}, f=45\text{MHz}, V_R=2\text{V}$	η	80			%
Thermal resistance junction to ambient air	$R_{\theta JA}$			300 ¹⁾	$^\circ\text{C/W}$

1) Valid provided that leads at a distance of 4mm from case are kept at ambient temperature (DO-35)

RATINGS AND CHARACTERISTIC CURVES BAT42/BAT43

Figure 1. Forward current versus forward voltage at different temperatures (typical values)

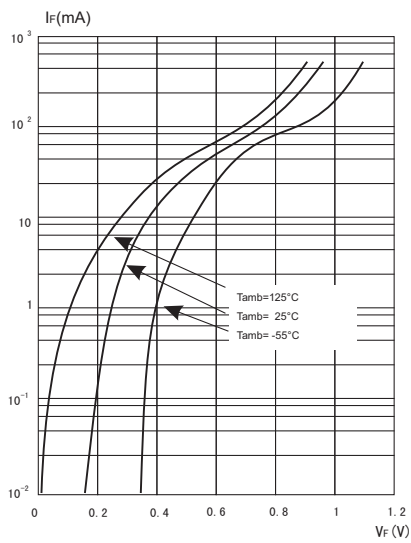


Figure 2. Forward current versus forward voltage (typical values)

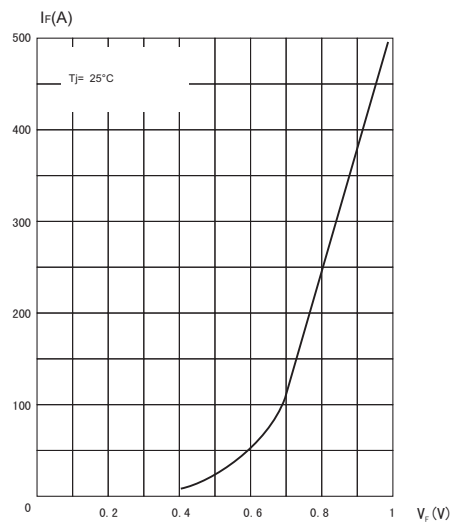
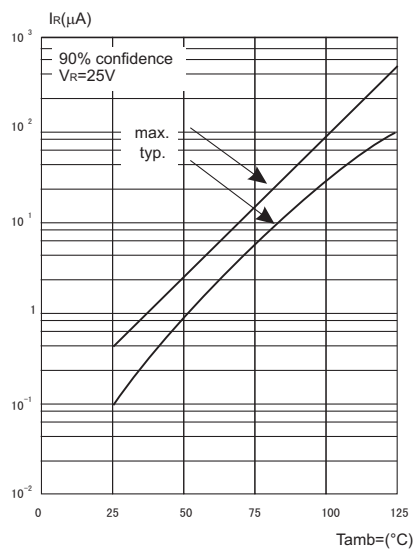


Figure 3. Reverse current versus ambient temperature (typical values)



RATINGS AND CHARACTERISTIC CURVES BAT42/BAT43

Figure 4. Reverse current versus continuous Reverse voltage (typical values)

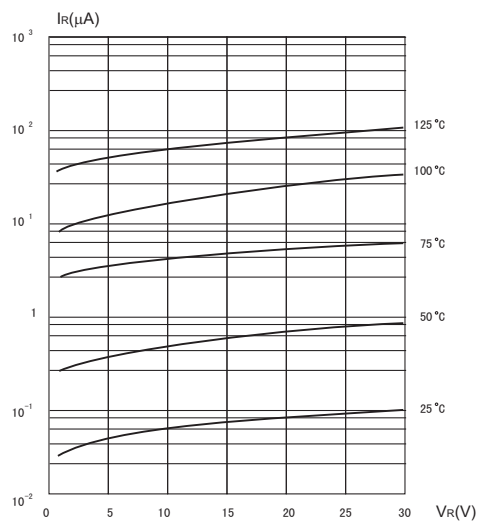


Figure 5. Capacitance C_J versus reverse applied voltage V_R (typical values)

