Amber Electronic Limited

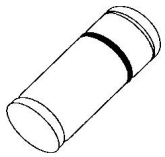
TMMBAT47 ; TMMBAT48

Small Signal Schottky Diodes

DESCRIPTION

General purpose, metal to silicon diodes featuring very low turn-on voltage and fast switching.

These devices have integrated protection against excessive voltage such as electrostatic discharges.



MINIMELF
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		TMMBAT47	TMMBAT48	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	40	V
I_F	Forward Continuous Current	T_l = 25 °C	350		mA
I_{FRM}	Repetitive Peak Fordward Current	$t_p \leq 1s$ $\delta \leq 0.5$	1		A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms	7.5		A
		t_p = 1s	1.5		
P_{tot}	Power Dissipation	T_l = 25 °C	330		mW
T_{stg} T_j	Storage and Junction Temperature Range		- 65 to 150 - 65 to 125		°C °C
T_L	Maximum Temperature for Soldering during 15s		260		°C

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th(j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
V_{BR}	T_j = 25°C	I_R = 10μA	TMMBAT47	20			V
	T_j = 25°C	I_R = 25μA	TMMBAT48	40			
V_F*	T_j = 25°C	I_F = 0.1mA	All Types			0.25	V
	T_j = 25°C	I_F = 1mA				0.3	
	T_j = 25°C	I_F = 10mA				0.4	
	T_j = 25°C	I_F = 30mA	TMMBAT47			0.5	
	T_j = 25°C	I_F = 150mA				0.8	
	T_j = 25°C	I_F = 300mA				1	
	T_j = 25°C	I_F = 50mA	TMMBAT48			0.5	
	T_j = 25°C	I_F = 200mA				0.75	
	T_j = 25°C	I_F = 500mA				0.9	
I_R*	T_j = 25°C	V_R = 1.5V	All Types			1	μA
	T_j = 60°C					10	
	T_j = 25°C	V_R = 10V	TMMBAT47			4	
	T_j = 60°C					20	
	T_j = 25°C	V_R = 20V				10	
	T_j = 60°C					30	
	T_j = 25°C	V_R = 10V	TMMBAT48			2	
	T_j = 60°C					15	
	T_j = 25°C	V_R = 20V				5	
	T_j = 60°C					25	
	T_j = 25°C	V_R = 40V				25	
	T_j = 60°C					50	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 0V	f = 1MHz		20		pF
	T_j = 25°C	V_R = 1V			12		
t_{rr}	T_j = 25°C	I_F = 10mA V_R = 1V i_{rr} = 1mA R_L = 100Ω			10		ns

* Pulse test: $t_p \leq 300\mu s$ $\delta < 2\%$.

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

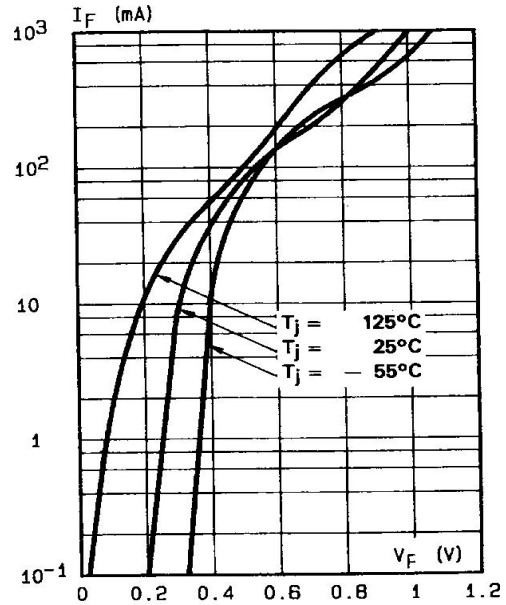


Figure 2. Forward current versus forward voltage (typical values).

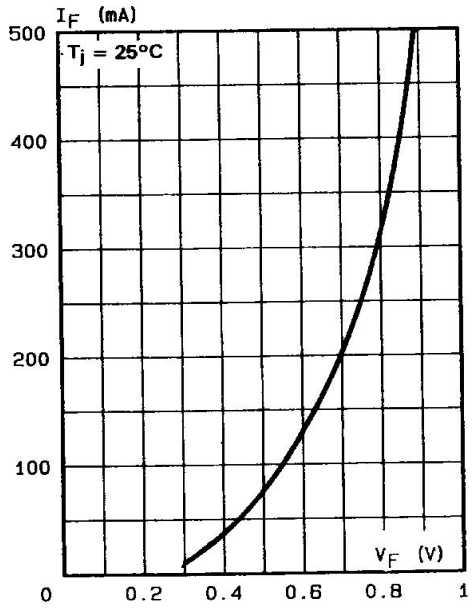


Fig.2 - Forward current versus forward voltage (typical values).

Figure 3. Reverse current versus junction temperature.

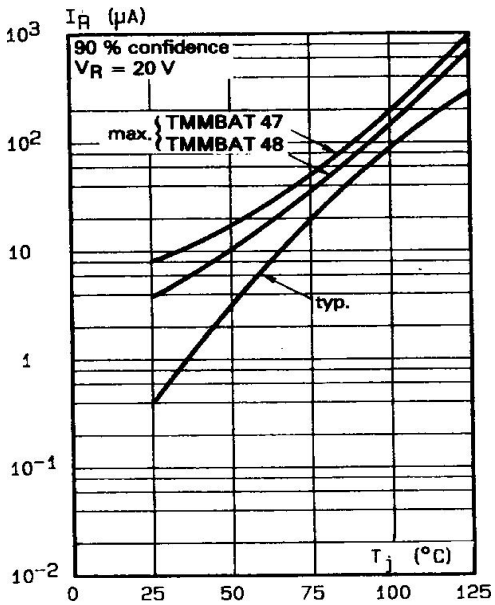


Fig.3 - Reverse current versus junction temperature.

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

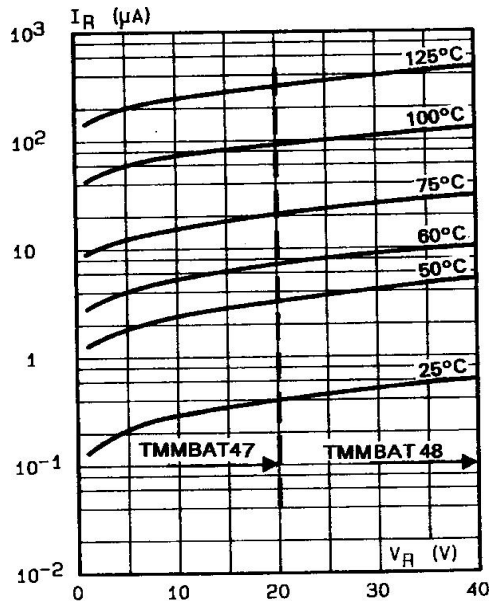


Figure 5. Capacitance C versus reverse applied voltage V_R (typical values).

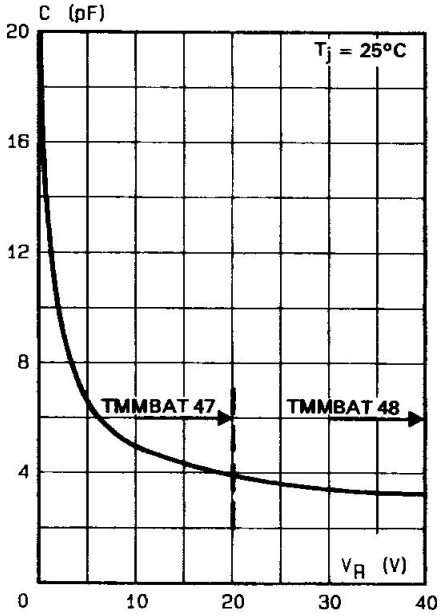
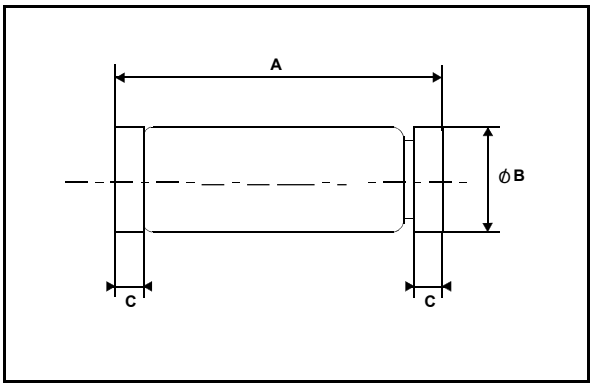


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

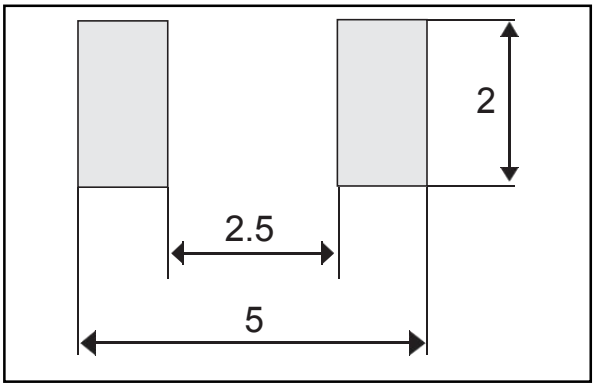
PACKAGE MECHANICAL DATA

MINIMELF Glass



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	3.30	3.40	3.6	0.130	0.134	0.142
B	1.59	1.60	1.62	0.063	0.063	0.064
C	0.40	0.45	0.50	0.016	0.018	0.020
D		1.50			0.059	

FOOT PRINT DIMENSIONS (Millimeter)



Marking: ring at cathode end.
Weight: 0.05g