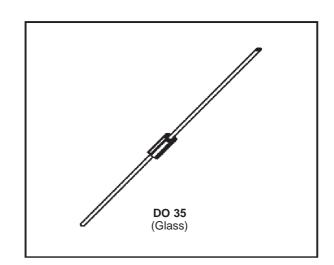


# SMALL SIGNAL SCHOTTKY DIODE



### **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.

## **ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	BAT47	BAT48	Unit	
$V_{RRM}$	Repetitive Peak Reverse Voltage	20	40	V	
I <sub>F</sub>	Forward Continuous Current*	35	mA		
I <sub>FRM</sub>	Repetitive Peak Fordward Current*		А		
I <sub>FSM</sub>	Surge non Repetitive Forward Current* $t_p = 10 \text{ms}$ 7.5		.5	Α	
	$t_p = 1s$		1.5		
P <sub>tot</sub>	Power Dissipation*	33	mW		
T <sub>stg</sub> T <sub>j</sub>	Storage and Junction Temperature Range	- 65 to - 65 to	°C		
T∟	Maximum Temperature for Soldering during Case	230		°C	

# THERMAL RESISTANCE

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

<sup>\*</sup> On infinite heatsink with 4mm lead length

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## **ELECTRICAL CHARACTERISTICS**

# STATIC CHARACTERISTICS

Symbol	7	Min.	Тур.	Max.	Unit		
$V_{(BR)}$	$I_R = 10\mu A$		BAT47	20			V
	I <sub>R</sub> = 25μΑ		BAT48	40			
V <sub>F</sub> *	$T_j = 25^{\circ}C$ $I_F = 0.1 mA$		All Types			0.25	V
	$T_j = 25$ °C $I_F = 1$ mA					0.3	
	$T_j = 25$ °C $I_F = 10$ mA					0.4	
	$T_j = 25$ °C $I_F = 30$ mA		BAT47			0.5	
	$T_j = 25^{\circ}C$ $I_F = 150mA$					0.8	
	$T_j = 25^{\circ}C$ $I_F = 300mA$				1		
	$T_j = 25$ °C $I_F = 50$ mA				0.5		
	$T_{j} = 25^{\circ}C$ $I_{F} = 200 \text{mA}$					0.75	
	$T_{j} = 25^{\circ}C$ $I_{F} = 500 \text{mA}$					0.9	
I <sub>R</sub> *	T <sub>j</sub> = 25°C	V <sub>R</sub> = 1.5V	All Types			1	μΑ
	T <sub>j</sub> = 60°C					10	
	T <sub>j</sub> = 25°C	V <sub>R</sub> = 10V	BAT47			4	
	T <sub>j</sub> = 60°C					20	
	T <sub>j</sub> = 25°C	V <sub>R</sub> = 20V				10	
	$T_j = 60^{\circ}C$					30	
	T <sub>j</sub> = 25°C	V <sub>R</sub> = 10V	BAT48			2	]
	T <sub>j</sub> = 60°C					15	
	T <sub>j</sub> = 25°C	V <sub>R</sub> = 20V				5	
	$T_j = 60$ °C					25	
	T <sub>j</sub> = 25°C	V <sub>R</sub> = 40V				25	]
	T <sub>j</sub> = 60°C					50	

# DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Тур.	Max.	Unit		
С	$T_j = 25^{\circ}C$ $V_R$	= 0V	f = 1MHz				20		pF
	$T_j = 25^{\circ}C$ $V_R$	= 1V					12		
t <sub>rr</sub>	$T_j = 25^{\circ}C$ $I_F$	= = 10mA	$V_R = 1V$	$i_{rr} = 1 \text{mA}$	$R_L = 100\Omega$		10		ns

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

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

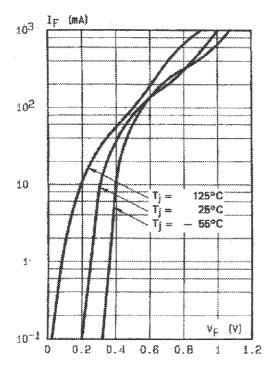


Figure 3. Reverse current versus junction temperature.

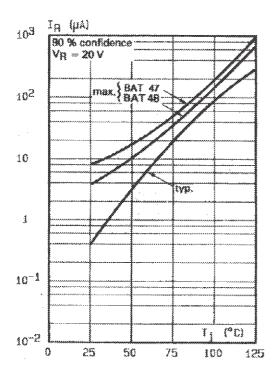


Figure 2. Forward current versus forward voltage (typical values).

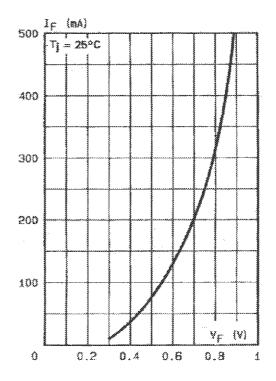
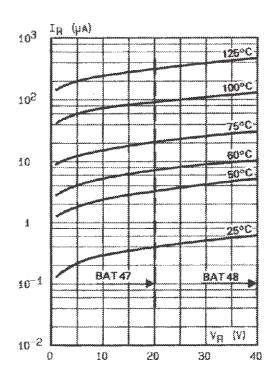


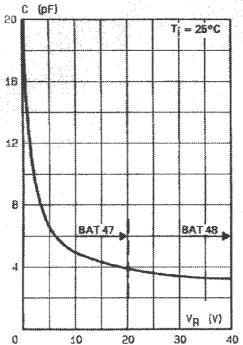
Figure 4. Reverse current versus continuous reverse voltage (typical values).



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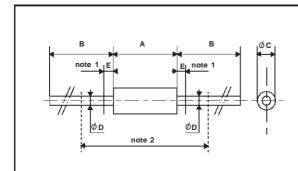
Figure 5. Capacitance C versus reverse



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### **PACKAGE MECHANICAL DATA**

#### DO 35 Glass



	DIMENSIONS						
REF.	Millin	neters	Inches				
	Min.	Max.	Min.	Max.			
А	3.05	4.50	0.120	0.177			
В	1.53	2.00	0.060	0.079			
С	12.7		0.500				
D	0.458	0.558	0.018	0.022			

Cooling method: by convection and conduction. Marking: clear, ring at cathode end. Weight: 0.015g

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