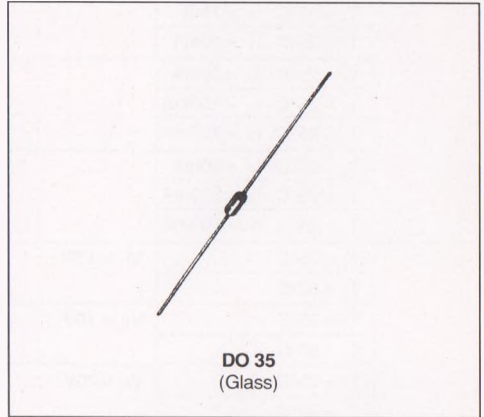


SMALL SIGNAL SCHOTTKY DIODES

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.


ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		BAT 47	BAT 48	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	40	V
I_F	Forward Continuous Current*	$T_a = 25^\circ\text{C}$	350		mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p \leq 1\text{s}$ $\delta \leq 0.5$	1		A
I_{FSM}	Surge non Repetitive Forward Current*	$t_p = 10\text{ms}$	7.5		A
		$t_p = 1\text{s}$	1.5		
P_{Tot}	Power Dissipation*	$T_a = 25^\circ\text{C}$	330		mW
T_{stg} T_j	Storage and Junction Temperature Range		- 65 to 150 - 65 to 125		$^\circ\text{C}$ $^\circ\text{C}$
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230		$^\circ\text{C}$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	300	$^\circ\text{C/W}$

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$I_R = 10\mu A$	BAT 47	20			V
	$I_R = 25\mu A$	BAT 48	40			
V_F^*	$T_j = 25^\circ C$ $I_F = 0.1mA$	All Types			0.25	V
	$T_j = 25^\circ C$ $I_F = 1mA$				0.3	
	$T_j = 25^\circ C$ $I_F = 10mA$				0.4	
	$T_j = 25^\circ C$ $I_F = 30mA$	BAT 47			0.5	
	$T_j = 25^\circ C$ $I_F = 150mA$				0.8	
	$T_j = 25^\circ C$ $I_F = 300mA$				1	
	$T_j = 25^\circ C$ $I_F = 50mA$	BAT 48			0.5	
	$T_j = 25^\circ C$ $I_F = 200mA$				0.75	
	$T_j = 25^\circ C$ $I_F = 500mA$				0.9	
I_R^*	$T_j = 25^\circ C$	$V_R = 1.5V$	All Types		1	μA
	$T_j = 60^\circ C$			10		
	$T_j = 25^\circ C$	$V_R = 10V$	BAT 47		4	
	$T_j = 60^\circ C$			20		
	$T_j = 25^\circ C$	$V_R = 20V$			10	
	$T_j = 60^\circ C$			30		
	$T_j = 25^\circ C$	$V_R = 10V$	BAT 48		2	
	$T_j = 60^\circ C$			15		
	$T_j = 25^\circ C$	$V_R = 20V$			5	
	$T_j = 60^\circ C$			25		
	$T_j = 25^\circ C$	$V_R = 40V$			25	
	$T_j = 60^\circ C$			50		

DYNAMIC CHARACTERISTICS

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

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

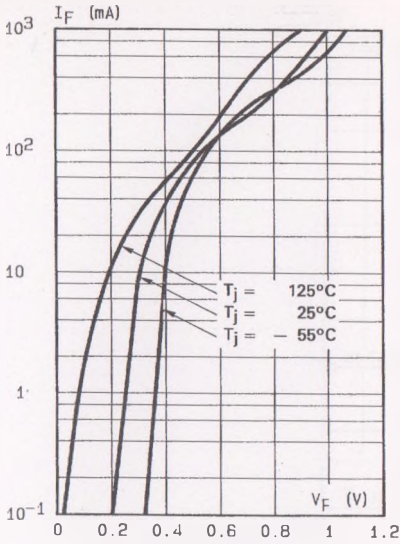


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

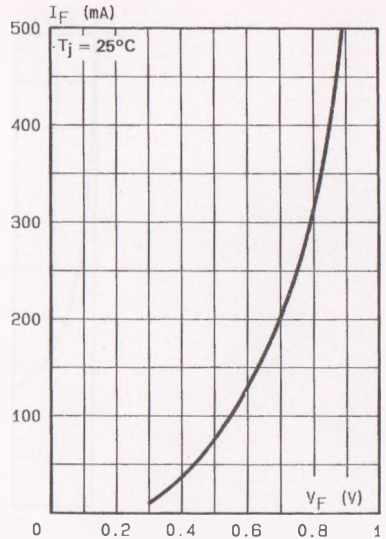


Fig.2 - Forward current versus forward voltage (typical values).

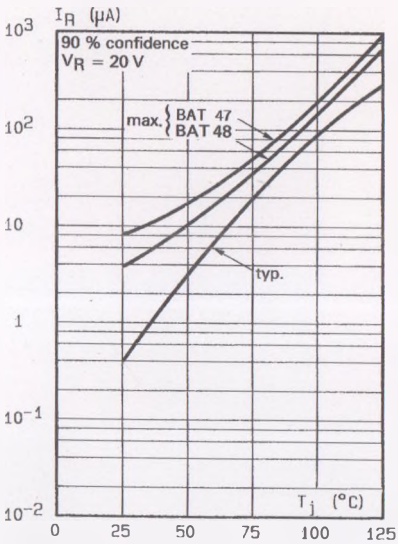


Fig.3 - Reverse current versus junction temperature.

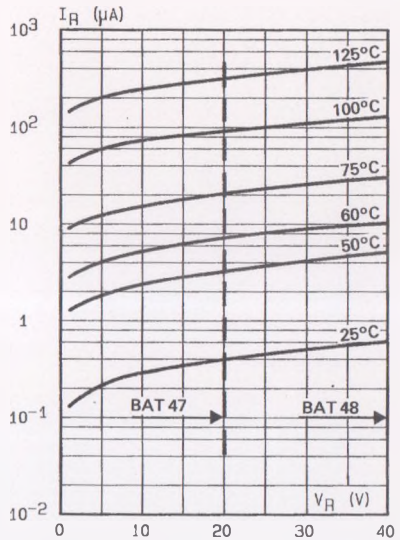


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

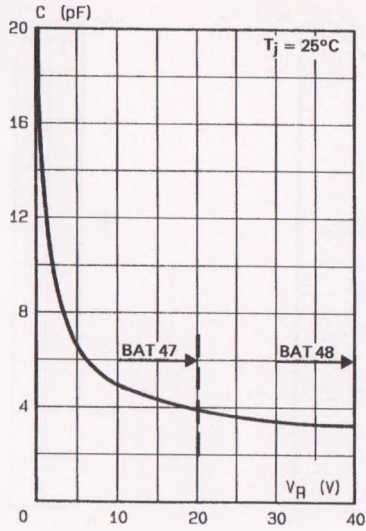


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).