SGS-THOMSON
MICROELECTRONICS

TMMBAT 42
TMMBAT 43

SMALL SIGNAL SCHOTTKY DIODES

MINIMELF
(Glass)

DESCRIPTION

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

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

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		30	V
I_F	Forward Continuous Current	T_l = 25°C	200	mA
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 1s$ $\delta \leq 0.5$	500	mA
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms	4	A
P_{tot}	Power Dissipation	T_l = 65°C	200	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	Parameter	Value	Unit
$R_{th\ (j\text{-}l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_j = 25°C	I_R = 100µA		30			V
V_F*	T_j = 25°C	I_F = 200mA	All Types			1	V
	T_j = 25°C	I_F = 10mA	BAT 42			0.4	
	T_j = 25°C	I_F = 50mA				0.65	
	T_j = 25°C	I_F = 2mA	BAT 43	0.26		0.33	
	T_j = 25°C	I_F = 15mA				0.45	
I_R*	T_j = 25°C		V_R = 25V			0.5	µA
	T_j = 100°C					100	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions					Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 1V	f = 1MHz				7		pF
t_{rr}	T_j = 25°C	I_F = 10mA	I_R = 10mA	i_{rr} = 1mA	R_L = 100Ω			5	ns
η	T_j = 25°C	R_L = 15KΩ	C_L = 300pF	f = 45MHz	V_i = 2V	80			%

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

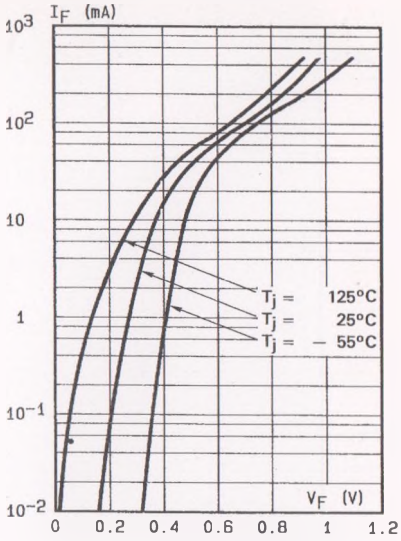

Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

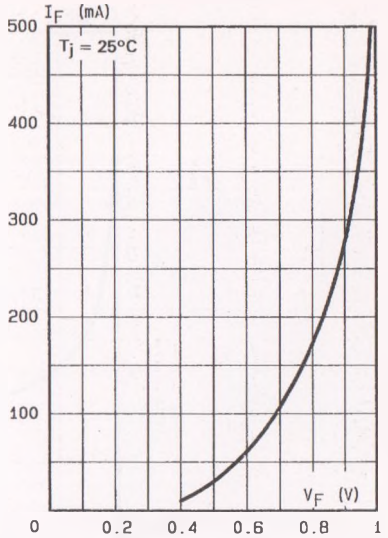

Fig.2 - Forward current versus forward voltage (typical values).

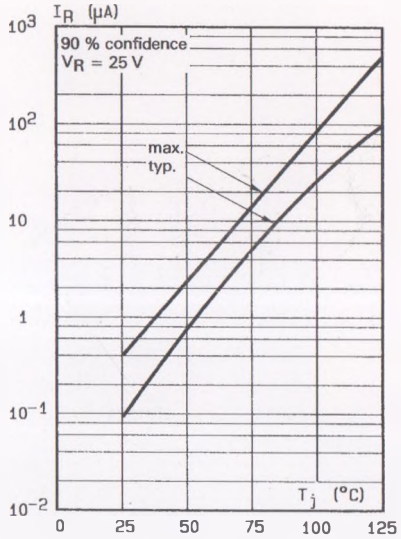

Fig.3 - Reverse current versus junction temperature.

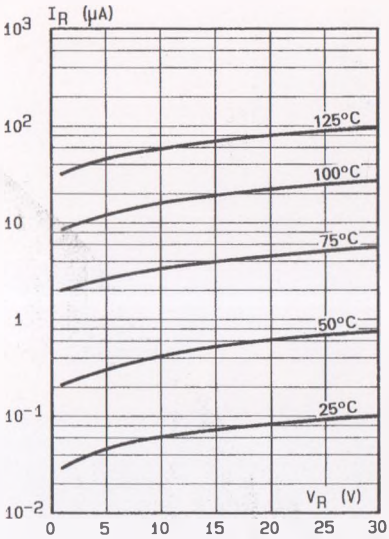

Fig.4 - Reverse current versus continuous reverse voltage (typical values).

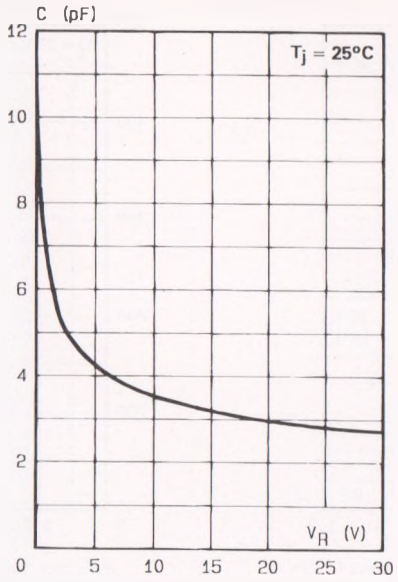

Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).