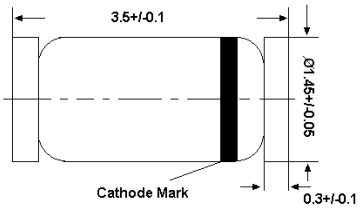
Silicon Epitaxial Planar Switching Diode

Fast switching diode in MiniMELF case especially suited for automatic surface mounting



Glass case MiniMELF
Dimensions in mm

LL-34

Absolute Maximum Ratings (T_a = 25 °C)

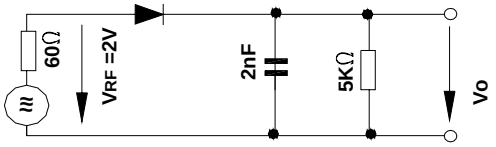
Parameter		Symbol	Value	Unit
Peak Reverse Voltage		V_{RM}	100	V
Reverse Voltage		V_R	75	V
Average Rectified Forward Current		$I_{F(AV)}$	200	mA
Non-repetitive Peak Forward Surge Current	at t = 1 s at t = 1 ms at t = 1 µs	I_{FSM}	0.5 1 4	A
Power Dissipation		P_{tot}	500 [1)]	mW
Junction Temperature		T_j	175	°C
Storage Temperature Range		T_{stg}	- 65 to + 175	°C

[1)] Valid provided that electrodes are kept at ambient temperature.

Characteristics at T_a = 25 °C

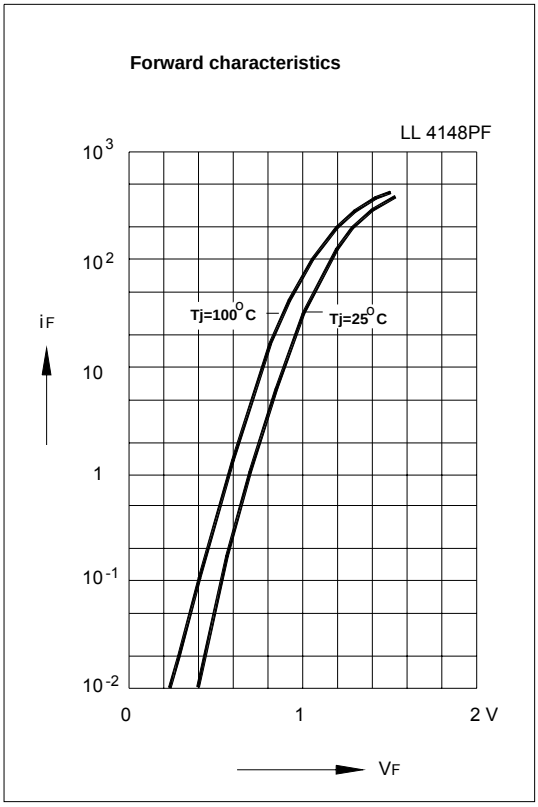
Parameter	Symbol	Min.	Max.	Unit
Forward Voltage at I_F = 10 mA	V_F	-	1	V
Leakage Current at V_R = 20 V at V_R = 75 V at V_R = 20 V, T_j = 150 °C	 I_R I_R I_R	 - - -	 25 5 50	 nA µA µA
Reverse Breakdown Voltage tested with 100 µA Pulses	$V_{(BR)R}$	100	-	V
Capacitance at V_R = 0, f = 1 MHz	C_{tot}	-	4	pF
Voltage Rise when Switching ON tested with 50 mA Forward Pulses tp = 0.1 s, Rise Time < 30 ns, fp = 5 to 100 KHz	V_{fr}	-	2.5	V
Reverse Recovery Time at I_F = 10 mA to I_R = 1 mA, V_R = 6 V, R_L = 100 Ω	t_{rr}	-	4	ns
Thermal Resistance Junction to Ambient Air	R_{thA}	-	0.35 [1)]	K/mW
Rectification Efficiency at f = 100 MHz, V_{RF} = 2 V	η_V	0.45	-	-

[1)] Valid provided that electrodes are kept at ambient temperature.

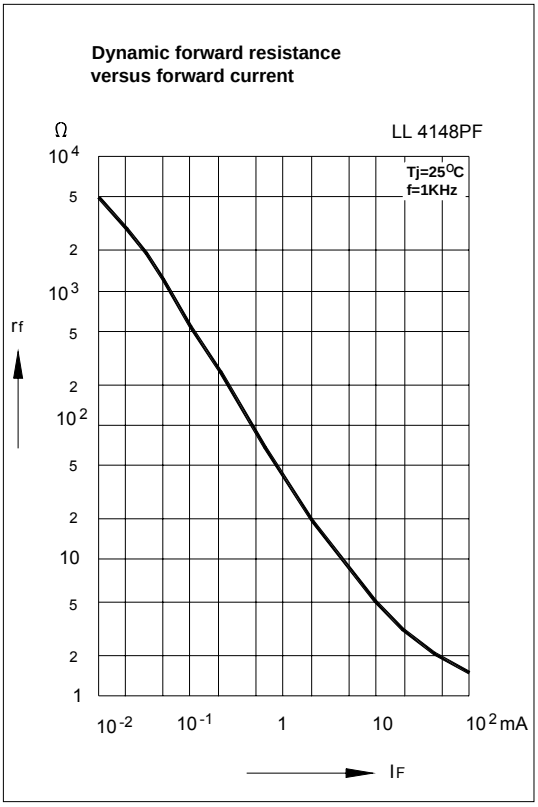


Rectification Efficiency Measurement Circuit

Forward characteristics

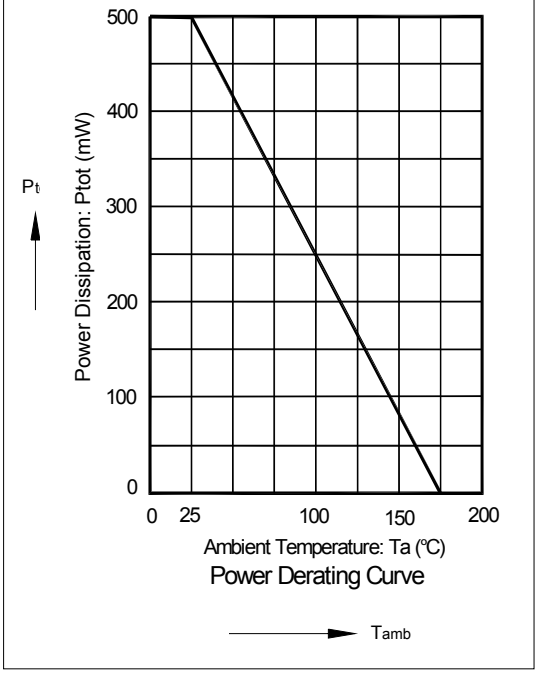


Dynamic forward resistance versus forward current

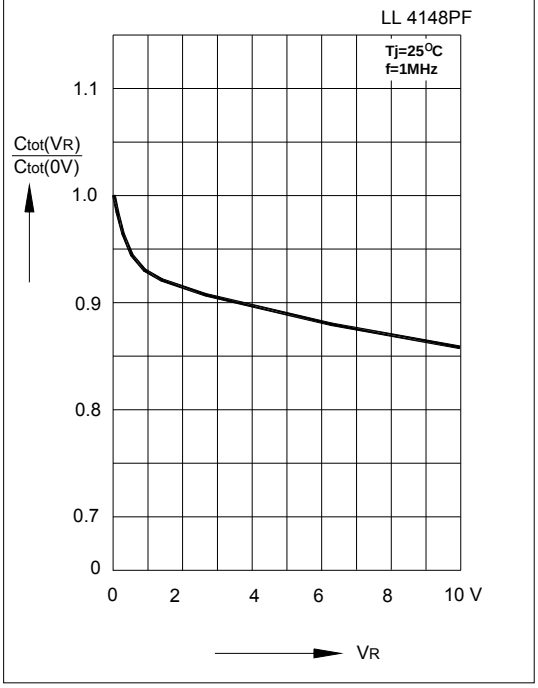


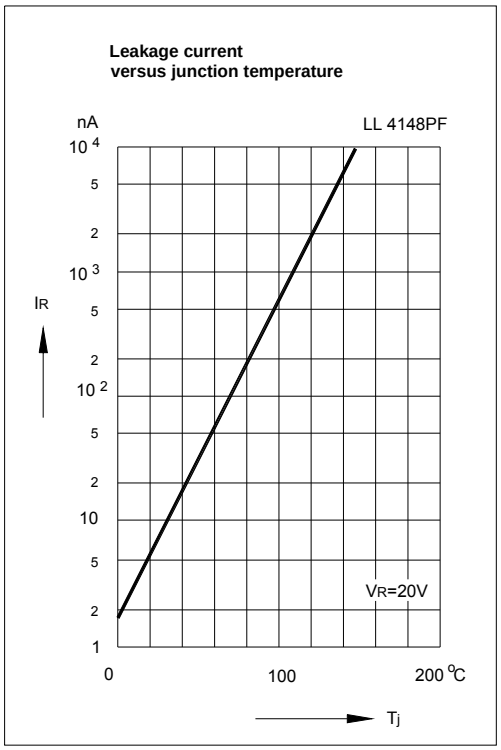
Admissible power dissipation versus ambient temperature

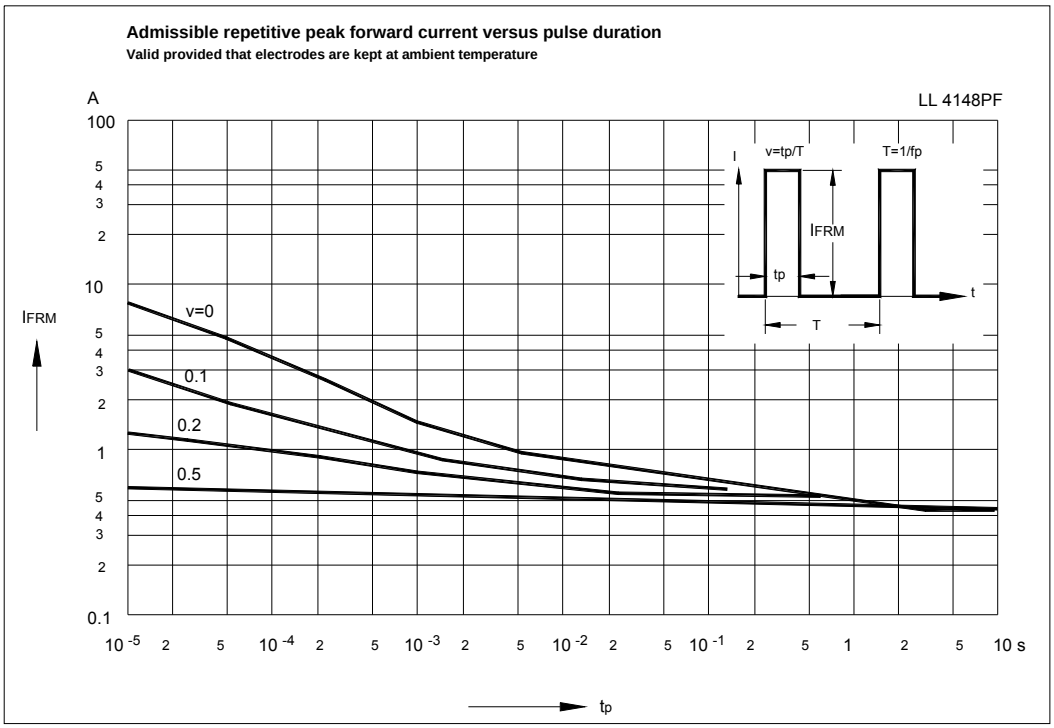
Valid provided that electrodes are kept at ambient temperature



Relative capacitance versus reverse voltage




Leakage current
versus junction temperature
nA
LL 4148PF
IR
VR=20V
0
100
200 °C
Tj


Admissible repetitive peak forward current versus pulse duration
Valid provided that electrodes are kept at ambient temperature
A
LL 4148PF
IFRM
v=0
0.1
0.2
0.5
v=tp/T
T=1/fp
tp
T
t
10 s
tp