

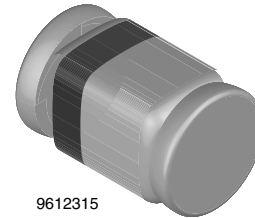
Small Signal Fast Switching Diode

Features

- Silicon Epitaxial Planar Diodes
- Electrical data identical with the device 1N4151
- MicroMELF package
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



RoHS
COMPLIANT
HALOGEN
FREE



9612315

Applications

- Extreme fast switches

Mechanical Data

Case: MicroMELF

Weight: approx. 12 mg

Cathode band color: black

Packaging codes/options:

TR3 / 10 k per 13" reel (8 mm tape), 10 k/box

TR / 2.5 k per 7" reel (8 mm tape), 12.5 k/box

Parts Table

Part	Type differentiation	Ordering code	Remarks
MCL4151	$V_{RRM} = 75\text{ V}$	MCL4151-TR3 or MCL4151-TR	Tape and Reel

Absolute Maximum Ratings

$T_{amb} = 25\text{ °C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	75	V
Reverse voltage		V_R	50	V
Peak forward surge current	$t_p = 1\ \mu\text{s}$	I_{FSM}	2	A
Repetitive peak forward current		I_{FRM}	450	mA
Forward continuous current		I_F	200	mA
Average forward current	$V_R = 0$	I_{FAV}	150	mA
Power dissipation		P_V	500	mW

Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	Mounted on epoxy-glass hard tissue, fig. 4, 35 μm copper clad, 0.9 mm^2 copper area per electrode	R_{thJA}	500	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 175	$^{\circ}\text{C}$

Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 50\text{ mA}$	V_F		880	1000	mV
Reverse voltage	$V_R = 50\text{ V}$	I_R			50	nA
	$V_R = 50\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	I_R			50	μA
Breakdown voltage	$I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01, t_p = 0.3\text{ ms}$	$V_{(BR)}$	75			V
Diode capacitance	$V_R = 0, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$	C_D			2	pF
Reverse recovery time	$I_F = I_R = 10\text{ mA}, i_R = 1\text{ mA}$	t_{rr}			4	ns
	$I_F = 10\text{ mA}, V_R = 6\text{ V}, i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$	t_{rr}			2	ns

Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

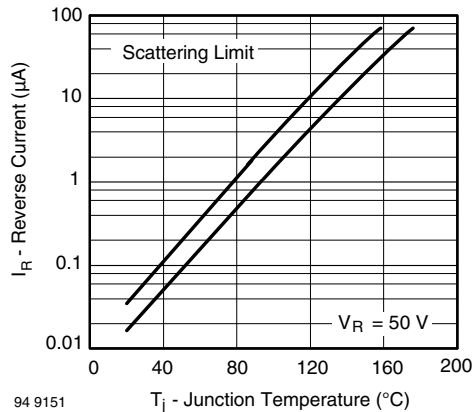


Figure 1. Reverse Current vs. Junction Temperature

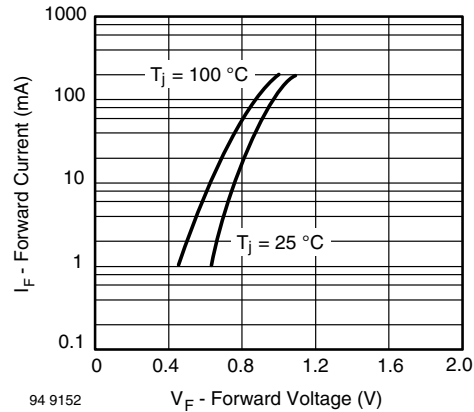


Figure 2. Forward Current vs. Forward Voltage

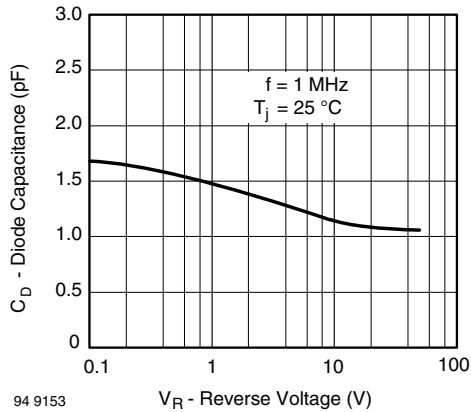


Figure 3. Diode Capacitance vs. Reverse Voltage

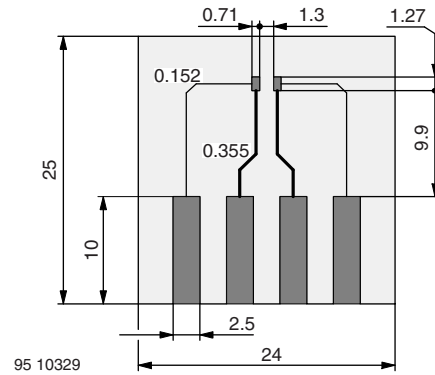
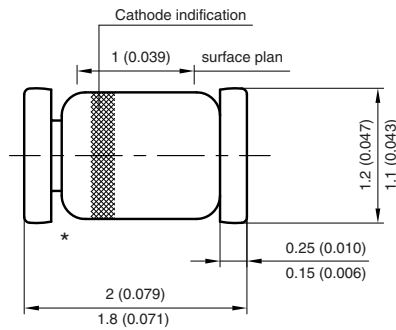
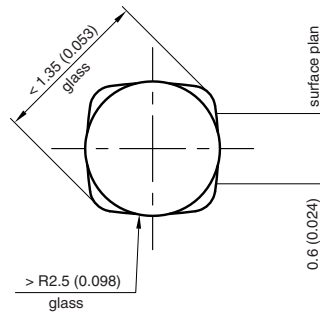


Figure 4. Board for R_{thJA} definition (in mm)

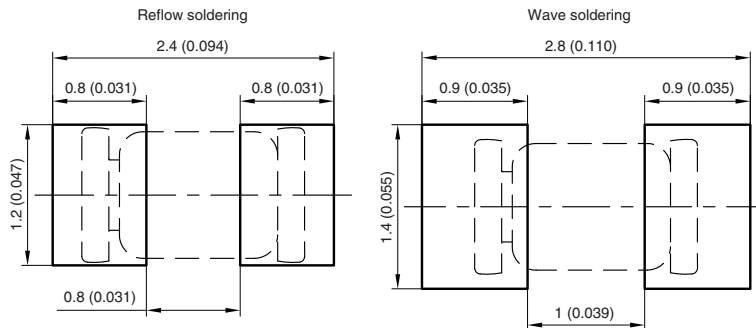
Package Dimensions in millimeters (inches): MicromELF



* The gap between plug and glass can be either on cathode or anode side



Foot print recommendation:



Created - Date: 26.July.1996
 Rev. 13 - Date: 07.June.2006
 Document no.: 6.560-5007.01-4
 96 12072



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