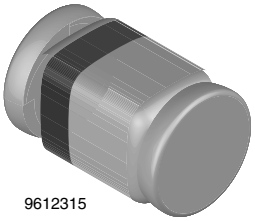
Small Signal Fast Switching Diode

Features

- Silicon Epitaxial Planar Diodes
- Electrical data identical with the device 1N4154
- 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



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
MCL4154	V_{RRM} = 35 V	MCL4154-TR3 or MCL4154-TR	Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	35	V
Reverse voltage		V_R	25	V
Peak forward surge current	t_p = 1 µs	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_{tot}	500	mW

Thermal Characteristics

T_{amb} = 25 °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 mm² copper area per electrode	R_{thJA}	500	K/W
Junction temperature		T_j	175	°C
Storage temperature range		T_{stg}	- 65 to + 175	°C

Electrical Characteristics

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

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F = 30 mA	V_F			1000	mV
Reverse current	V_R = 25 V	I_R			100	nA
	V_R = 25 V, T_j = 150 °C	I_R			100	µA
Breakdown voltage	I_R = 5 µA, t_p/T = 0.01, t_p = 0.3 ms	$V_{(BR)}$	35			V
Diode capacitance	V_R = 0, f = 1 MHz, V_{HF} = 50 mV	C_D			4	pF
Reverse recovery time	I_F = I_R = 10 mA, i_R = 1 mA	t_{rr}			4	ns
	I_F = 10 mA, V_R = 6 V, i_R = 0.1 x I_R, R_L = 100 Ω	t_{rr}			2	ns

Typical Characteristics

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

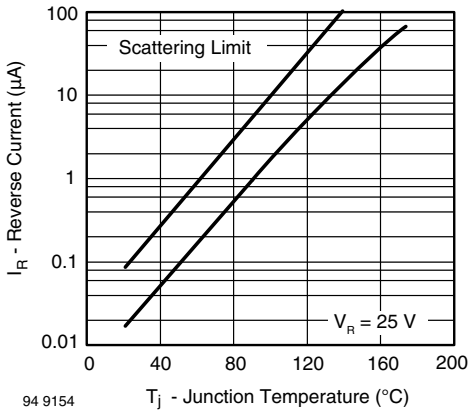


Figure 1. Reverse Current vs. Junction Temperature

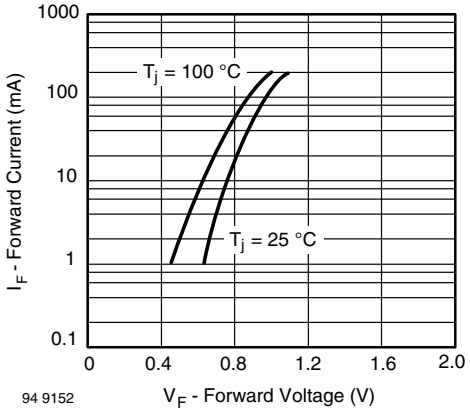


Figure 2. Forward Current vs. Forward Voltage

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

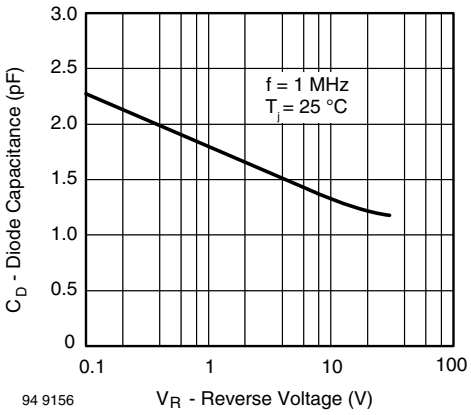


Figure 3. Diode Capacitance vs. Reverse Voltage

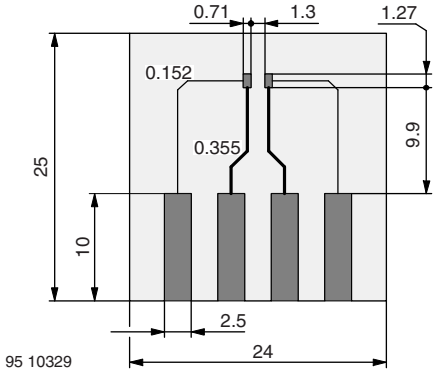
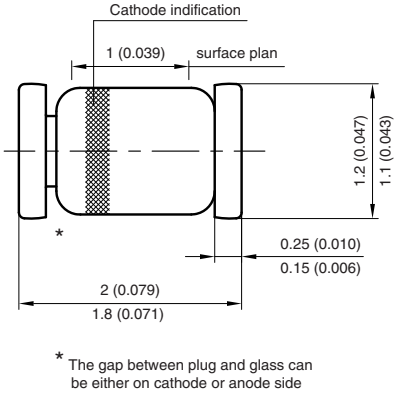
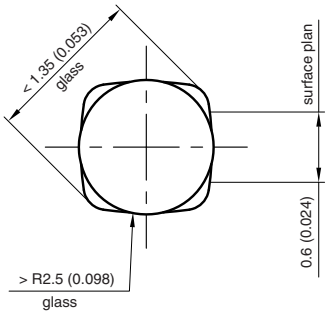


Figure 4. Board for R_{thJA} definition (in mm)

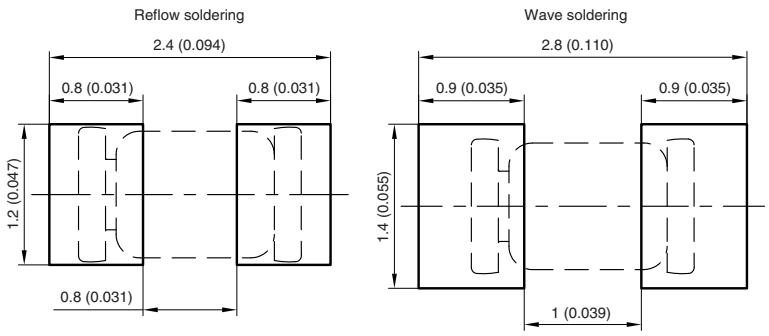
Package Dimensions in millimeters (inches): **MicroMELF**



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



Foot print recommendation:



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