



Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Electrical data identical with the device 1N4154
- MicroMELF package
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS COMPLIANT HALOGEN FREE

APPLICATIONS

- Extreme fast switches

ADDITIONAL RESOURCES



MECHANICAL DATA

Case: MicroMELF

Weight: approx. 12 mg

Cathode band color: black

Packaging codes / options:

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

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

| PARTS TABLE | | | | |
|-------------|-------------------------|---------------------------|-----------------------|---------------|
| PART | TYPE DIFFERENTIATION | ORDERING CODE | CIRCUIT CONFIGURATION | REMARKS |
| MCL4154 | V _{RRM} = 35 V | MCL4154-TR3 or MCL4154-TR | Single | 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 _{F(AV)} | 150 | mA |
| Power dissipation | | P _{tot} | 500 | mW |

| THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | |
|--|--|-------------------|-------------|------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Thermal resistance 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 | °C |
| Storage temperature range | | T _{stg} | -65 to +175 | °C |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|--|--|------------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 30\text{ mA}$ | V_F | | | 1 | V |
| Reverse current | $V_R = 25\text{ V}$ | I_R | | | 100 | nA |
| | $V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 100 | μA |
| Breakdown voltage | $I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$ | $V_{(BR)}$ | 35 | | | V |
| Diode capacitance | $V_R = 0\text{ V}, f = 1\text{ MHz},$ $V_{HF} = 50\text{ mV}$ | C_D | | | 4 | pF |
| Reverse recovery time | $I_F = I_R = 10\text{ mA},$ $i_R = 1\text{ mA}$ | t_{rr} | | | 4 | ns |
| | $I_F = 10\text{ mA}, V_R = 6\text{ V},$ $i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ | | | | 2 | |

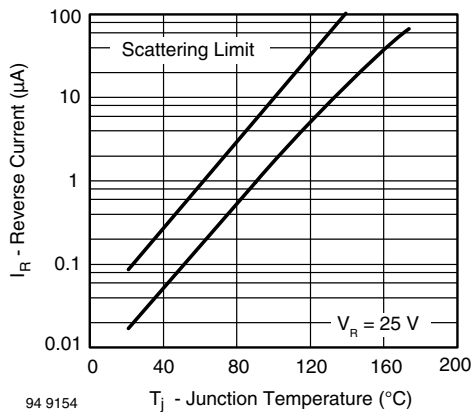
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

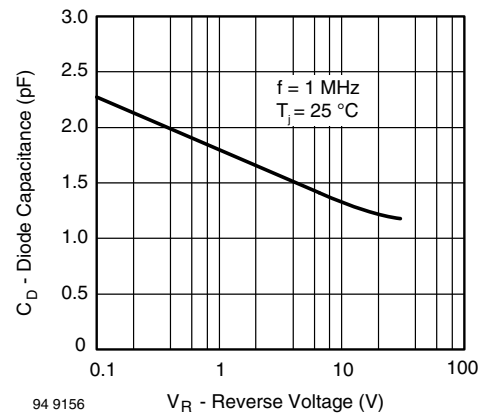


Fig. 3 - Diode Capacitance vs. Reverse Voltage

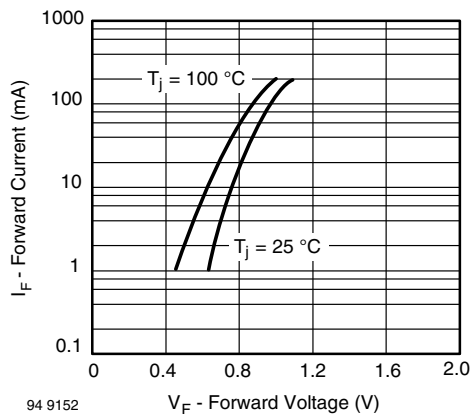
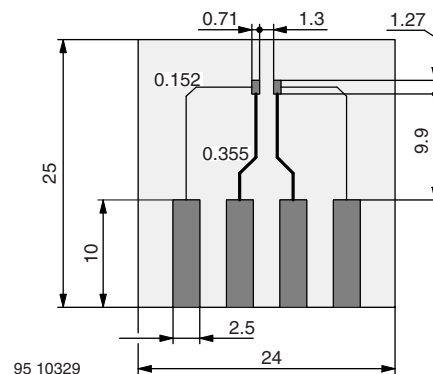
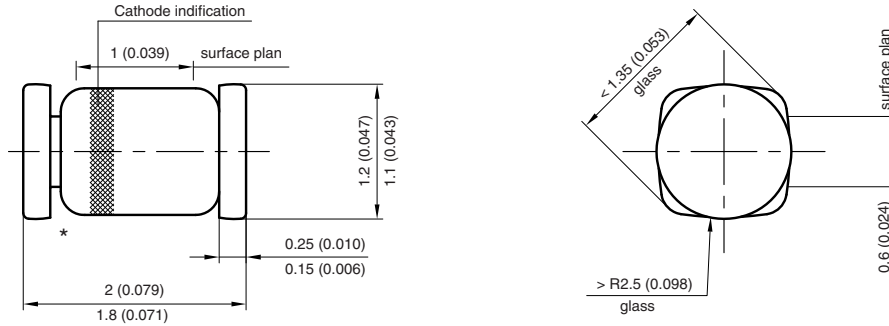


Fig. 2 - Forward Current vs. Forward Voltage


 Fig. 4 - Board for R_{thJA} Definition (in mm)

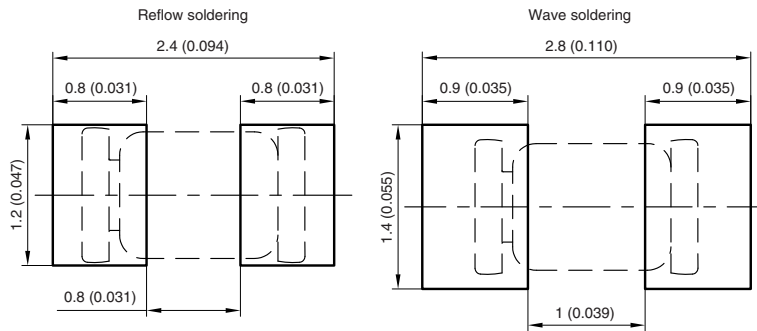


PACKAGE DIMENSIONS in millimeters (inches): **MicroMELF**



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

Foot print recommendation:



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96 12072



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