

### Features

- Reverse voltage: 30V
- Average forward current: 200mA
- Compliant to Halogen-free

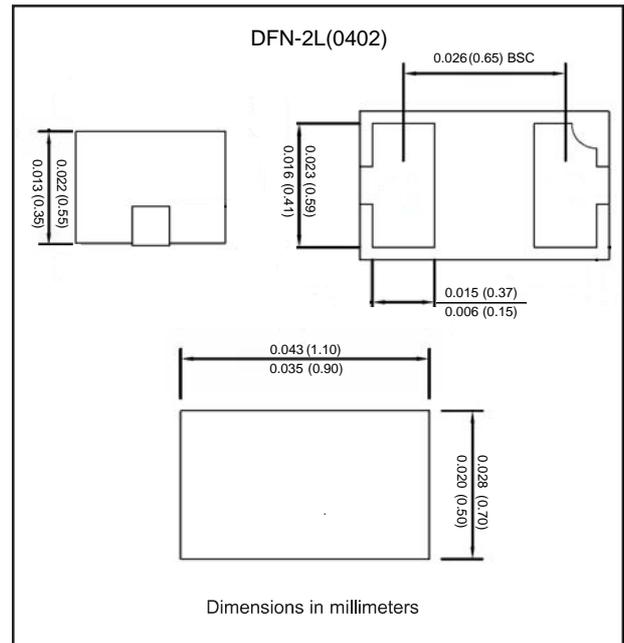
### Application

- Ultra-Small Surface Mount Package
- Low Forward Voltage Drop
- Extremely Fast Switching Speed

### Mechanical data

- **Package:** DFN-2L (0402)
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### Package outline



### Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

| Parameter   | Symbol    | Unit             | Value       |
|---|-----------|------------------|-------------|
| Repetitive peak reverse voltage   | $V_{RRM}$ | V                | 30          |
| RMS Reverse Voltage   | $V_{RMS}$ | V                | 21          |
| Maximum DC Blocking Voltage   | $V_{DC}$  | V                | 30          |
| Forward current   | $I_F$     | mA               | 200         |
| Repetitive Peak Forward Current @ $t_p=1\text{ms}$ , $\delta=0.25$          | $I_{FRM}$ | mA               | 300         |
| Non-repetitive surge peak forward current @ $t=8.3\text{ms}$ half-sine wave | $I_{FSM}$ | mA               | 600         |
| Power dissipation   | $P_D$     | mW               | 160         |
| Junction temperature  | $T_J$     | $^\circ\text{C}$ | -55 to +125 |
| Storage temperature   | $T_{STG}$ | $^\circ\text{C}$ | -55 to +125 |

### Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

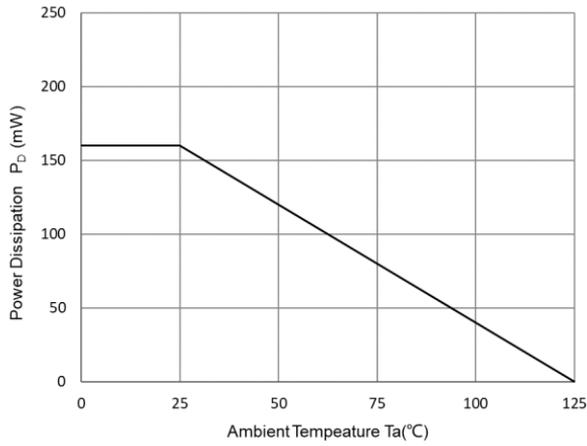
| Parameter                 | Symbol          | Unit | Conditions   | Min | Typ | Max  |
|---------------------------|-----------------|------|--|-----|-----|------|
| Reverse breakdown voltage | V <sub>BR</sub> | V    | I <sub>R</sub> =0.1mA  | 30  |     |      |
| Reverse leakage current   | I <sub>R</sub>  | uA   | V <sub>R</sub> =25V  |     |     | 2    |
| Forward voltage           | V <sub>F</sub>  | mV   | I <sub>F</sub> =0.1mA  |     |     | 240  |
|                           |                 |      | I <sub>F</sub> =1mA  |     |     | 320  |
|                           |                 |      | I <sub>F</sub> =10mA   |     |     | 400  |
|                           |                 |      | I <sub>F</sub> =30mA   |     |     | 500  |
|                           |                 |      | I <sub>F</sub> =100mA  |     |     | 1000 |
| Capacitance               | C <sub>J</sub>  | pF   | V <sub>R</sub> =1.0V, f=1MHz   |     | 10  |      |
| Reverse Recovery Time     | t <sub>rr</sub> | ns   | I <sub>F</sub> =10mA, I <sub>R</sub> =1~10mA,<br>R <sub>L</sub> =100Ω, |     | 5   |      |

### Thermal Characteristics

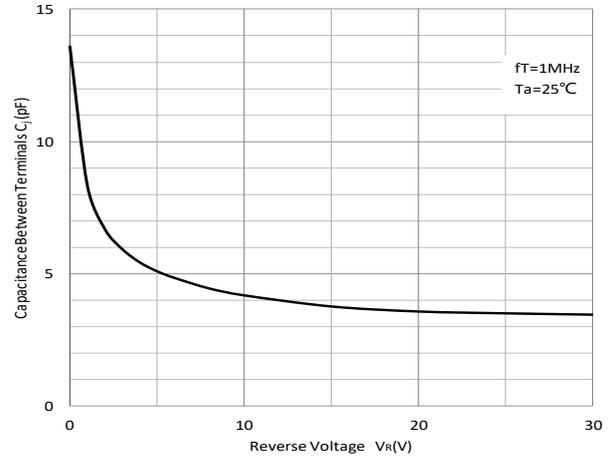
| Parameter                               | Symbol            | Unit | Value |
|---|-------------------|------|-------|
| Thermal resistance, junction-to-ambient | R <sub>θJ-A</sub> | °C/W | 625   |

## Characteristics

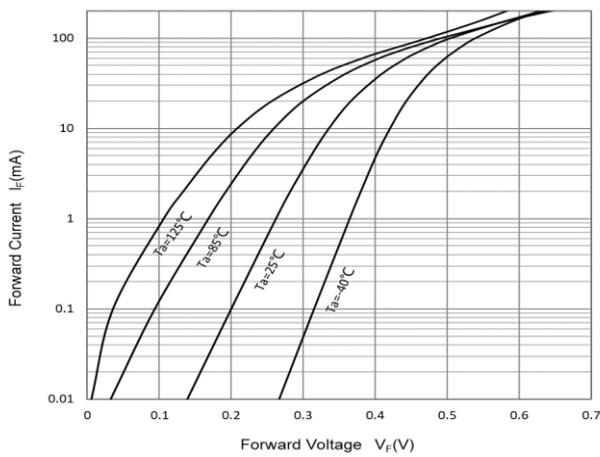
**Fig 1: P<sub>D</sub>-T<sub>a</sub> Curve**



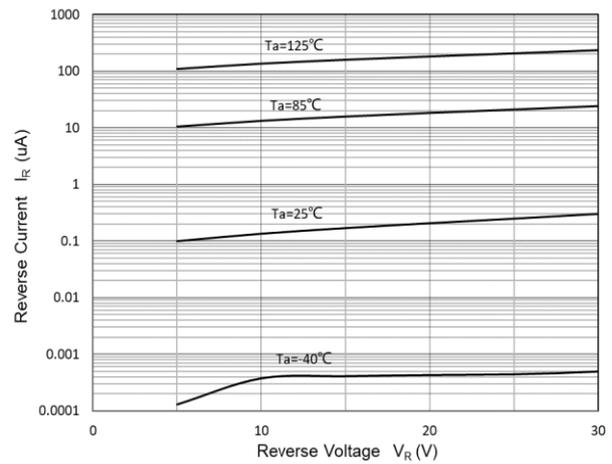
**Fig 2: Capacitance Capability**



**Fig 3: Typical Forward Characteristics**



**Fig 4: Typical Reverse Characteristics**



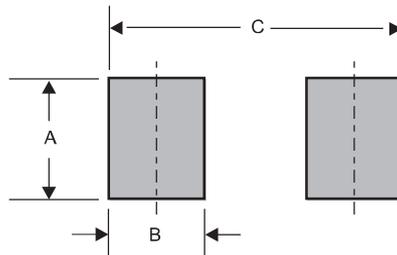
### Pinning information

| Pin                        | Simplified outline   | Symbol  |
|----------------------------|--|---|
| Pin1 cathode<br>Pin2 anode |  |  |

### Marking

| Type number | Marking code |
|-------------|--------------|
| BAT54D1     | L91          |

### Suggested solder pad layout



Dimensions in millimeters

| PACKAGE      | A           | B           | C           |
|--------------|-------------|-------------|-------------|
| DFN-2L(0402) | 0.024(0.60) | 0.014(0.35) | 0.039(1.00) |