

**SURFACE MOUNT  
FAST SWITCHING DIODE**

**REVERSE VOLTAGE – 50 Volts  
FORWARD CURRENT – 0.1 Ampere**

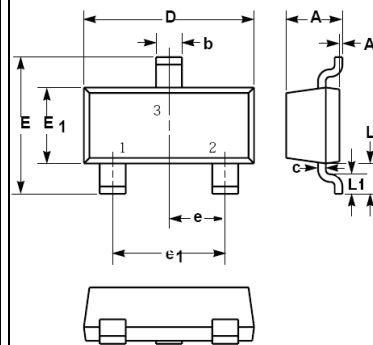
**FEATURES**

- Fast switching speed
- Ideally suited for automatic insertion
- For general purpose switching applications

**MECHANICAL DATA**

- Case: SOT-23 Plastic
- Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Moisture sensitivity: Level 1 per J-STD-020D
- Lead free in RoHS 2002/95/EC compliant

**SOT-23**



| SOT-23                   |           |      |
|--------------------------|-----------|------|
| Dim.                     | Min.      | Max. |
| A                        | 0.90      | 1.15 |
| A1                       | 0.00      | 0.10 |
| b                        | 0.30      | 0.50 |
| c                        | 0.08      | 0.15 |
| D                        | 2.80      | 3.00 |
| E                        | 2.25      | 2.55 |
| E1                       | 1.20      | 1.40 |
| e                        | 0.95 Typ. |      |
| e1                       | 1.80      | 2.00 |
| L                        | 0.55 Ref. |      |
| L1                       | 0.30      | 0.50 |
| Dimensions in millimeter |           |      |

**Maximum Ratings & Thermal Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified**

| Characteristic                                     | Symbol           | MC2838   | Units |
|--|------------------|----------|-------|
| Non-Repetitive Peak Reverse Voltage                | V <sub>RM</sub>  | 75       | V     |
| DC Blocking Voltage                                | V <sub>R</sub>   | 50       | V     |
| Average Rectified Output Current                   | I <sub>O</sub>   | 100      | mA    |
| Non-Repetitive Peak Forward Surge Current @t=1.0us | I <sub>FSM</sub> | 4        | A     |
| Power Dissipation                                  | P <sub>D</sub>   | 150      | mW    |
| Operating Temperature Range                        | T <sub>J</sub>   | 150      | °C    |
| Storage Temperature Range                          | T <sub>STG</sub> | -55~+150 | °C    |

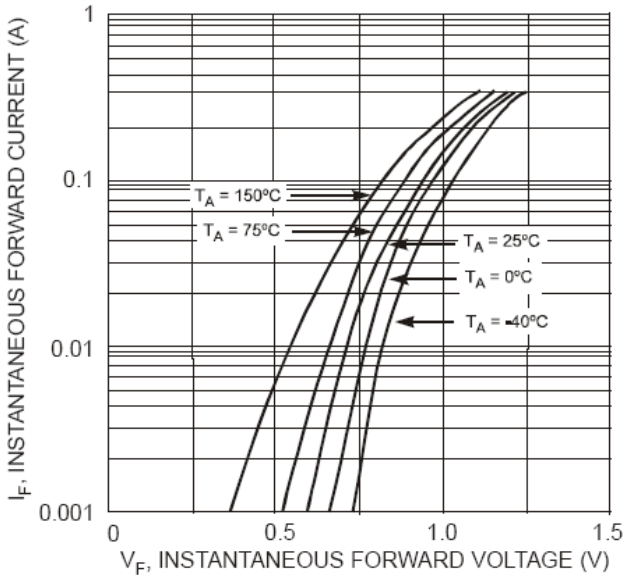
**Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified**

| Characteristic  | Test Condition   | Symbol         | Min. | Typ. | Max. | Unit |
|---|--|----------------|------|------|------|------|
| Maximum Forward Voltage                                 | I <sub>F</sub> = 10mA  | V <sub>F</sub> | --   | 0.67 | 0.9  | V    |
|   | I <sub>F</sub> = 50mA  |                | --   | 0.75 | 1.0  |      |
|   | I <sub>F</sub> = 100mA   |                | --   | 0.85 | 1.2  |      |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | V <sub>R</sub> = 50V   | I <sub>R</sub> | --   | --   | 0.1  | uA   |
| Typical Diode Capacitance                               | V <sub>R</sub> = 0V, f=1MHz  | C <sub>D</sub> | --   | 1.1  | 3    | pF   |
| Reverse Recovery time                                   | I <sub>rr</sub> =1mA, V <sub>R</sub> =6V, I <sub>R</sub> =I <sub>F</sub> =10mA, R <sub>L</sub> =100Ω | trr            | --   | --   | 4    | ns   |

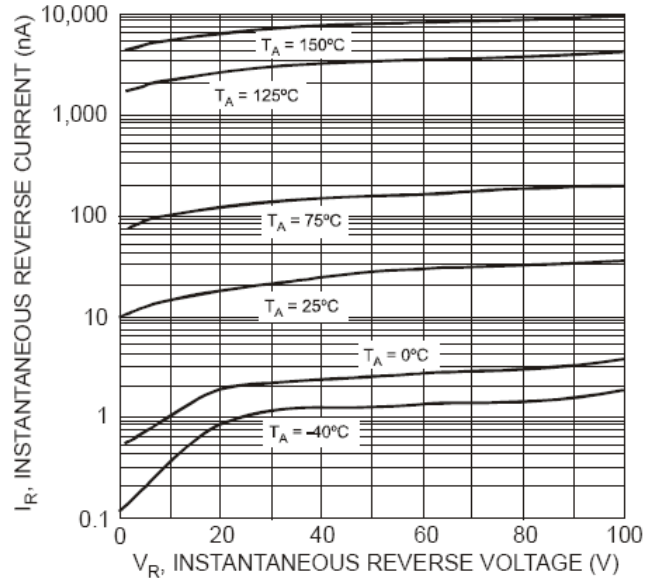
**RATING AND CHARACTERISTIC CURVES  
MC2838**



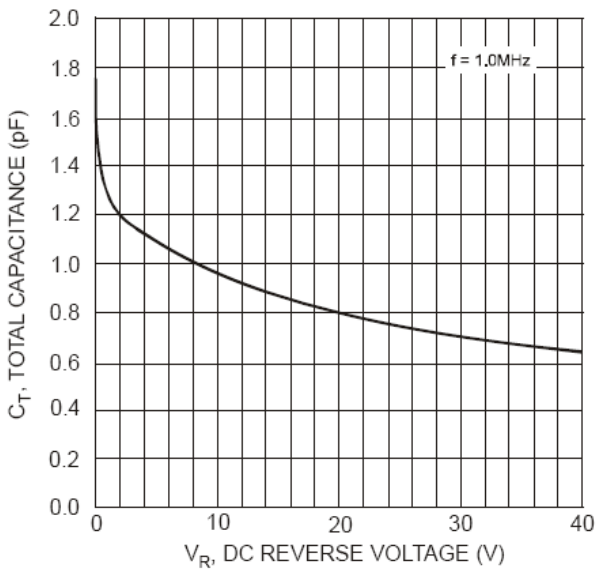
**Fig.1 Typical Forward Characteristics**



**Fig.2 Typical Reverse Characteristics**



**Fig.3 Total Capacitance vs. Reverse Voltage**



**Device Marking :**

| Device P/N | Marking code | Equivalent Circuit Diagram |
|------------|--------------|----------------------------|
| MC2838     | A61          |                            |

## **Important Notice and Disclaimer**

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