

Features:

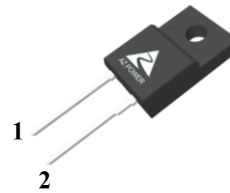
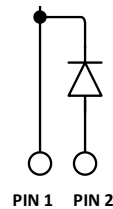
- 650V Schottky Diode
- Zero Reverse Recovery Current
- High Frequency Operation
- Positive Temperature Coefficient
- Temperature independent

Switching

Benefits:

- Unipolar Rectifier
- Minimal switching loss
- Higher Efficiency
- Low cooling requirement

| Symbol | Value | Unit |
|-------------------------------------|-------|------|
| V_{RRM} | 650 | V |
| I_F ($T_C = 125^\circ\text{C}$) | 10 | A |
| Q_C | 15 | nC |

Outline

TO-220-2FP
Circuit

Applications:

- Switch Mode Power Supply
- Booster diodes in PFC, DC/DC
- AC/DC converters

Maximum Ratings

| Symbol | Parameter | Value | Unit | Test Conditions |
|-------------|---|------------|------------------|--|
| V_R | DC Peak Reverse Voltage | 650 | V | $T_J = 25^\circ\text{C}$ |
| V_{RRM} | Repetitive Peak Reverse | 650 | V | $T_J = 25^\circ\text{C}$ |
| V_{RSM} | Surge Peak Reverse Voltage | 650 | V | $T_J = 25^\circ\text{C}$ |
| I_F | Continuous Forward Current | 20 | A | $T_C = 25^\circ\text{C}$ |
| | | 16 | | $T_C = 75^\circ\text{C}$ |
| | | 10 | | $T_C = 125^\circ\text{C}$ |
| I_{FRM} | Repetitive Peak Forward Surge Current | 51 | A | $T_C = 25^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave |
| | | 46 | | $T_C = 110^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave |
| I_{FSM} | Non-Repetitive Peak Forward Surge Current | 67 | A | $T_C = 25^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave |
| | | 61 | | $T_C = 110^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave |
| P_D | Power Dissipation | 60 | W | $T_C = 25^\circ\text{C}$ |
| | | 26 | | $T_C = 110^\circ\text{C}$ |
| $T_{J,max}$ | Operating Junction Temperature | 175 | $^\circ\text{C}$ | |
| T_{stg} | Storage Temperature Range | -55 to 175 | $^\circ\text{C}$ | |

Thermal characteristics

| Symbol | Parameter | Min. | Typ. | Max. | Unit |
|------------|--------------------|------|------|------|----------------------|
| R_{thJC} | Thermal resistance | | 2.5 | | $^{\circ}\text{C/W}$ |

Electrical Characteristics

| Symbol | Parameter | Value | | | Unit | Test Conditions |
|----------|-------------------------|-------|------|------|---------------|--|
| | | Min. | Typ. | Max. | | |
| V_{DC} | DC Blocking Voltage | 650 | | | V | $I_R = 100\mu\text{A}$, $T_J = 25^{\circ}\text{C}$ |
| V_F | Forward Voltage | | 1.6 | 1.8 | V | $I_F = 10\text{A}$, $T_J = 25^{\circ}\text{C}$ |
| | | | 1.9 | 2.2 | | $I_F = 10\text{A}$, $T_J = 175^{\circ}\text{C}$ |
| I_R | Reverse Current | | 1 | 50 | μA | $V_R = 650\text{V}$, $T_J = 25^{\circ}\text{C}$ |
| | | | 10 | 200 | | $V_R = 650\text{V}$, $T_J = 175^{\circ}\text{C}$ |
| Q_C | Total Capacitive Charge | | 15 | | nC | $I_F = 10\text{A}$, $dI/dt = 350\text{A}/\mu\text{s}$ $T_J = 25^{\circ}\text{C}$, $V_R = 400\text{V}$ |
| C | Total Capacitance | | 376 | | pF | $V_R = 1\text{V}$, $T_J = 25^{\circ}\text{C}$, $f = 1\text{ MHz}$ |
| | | | 44 | | | $V_R = 200\text{V}$, $T_J = 25^{\circ}\text{C}$, $f = 1\text{ MHz}$ |
| | | | 40 | | | $V_R = 400\text{V}$, $T_J = 25^{\circ}\text{C}$, $f = 1\text{ MHz}$ |

Typical Performance

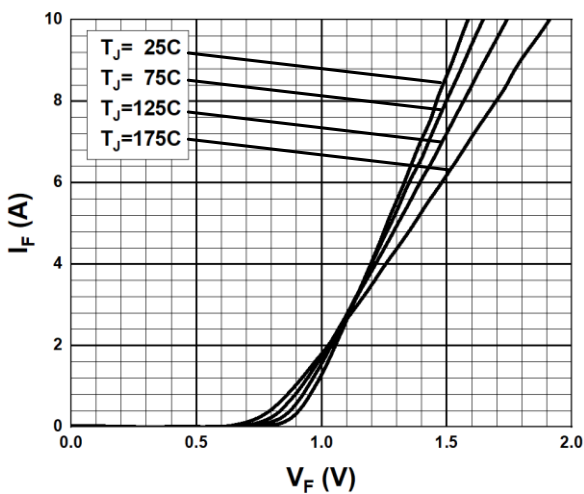


Fig. 1 Forward Characteristics

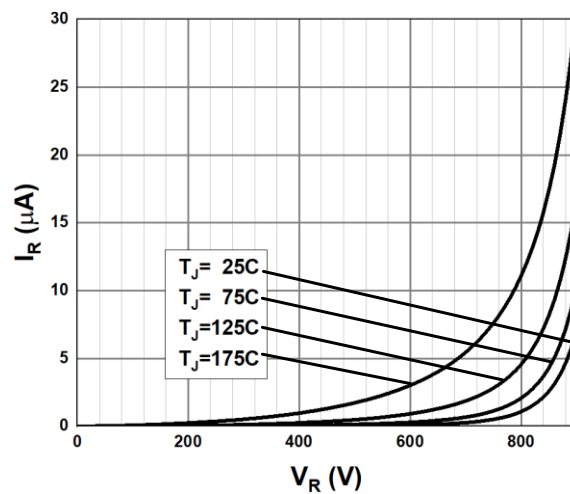
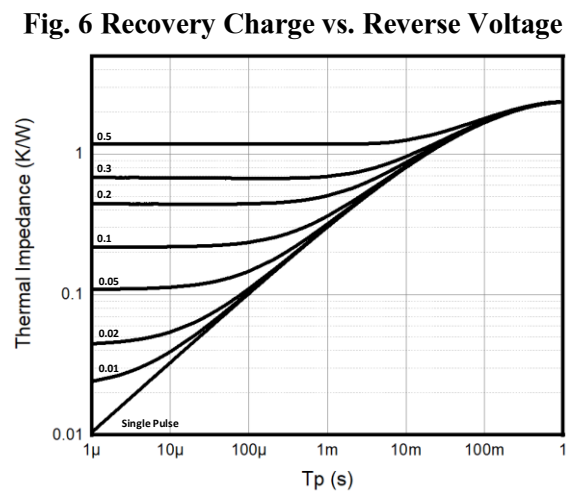
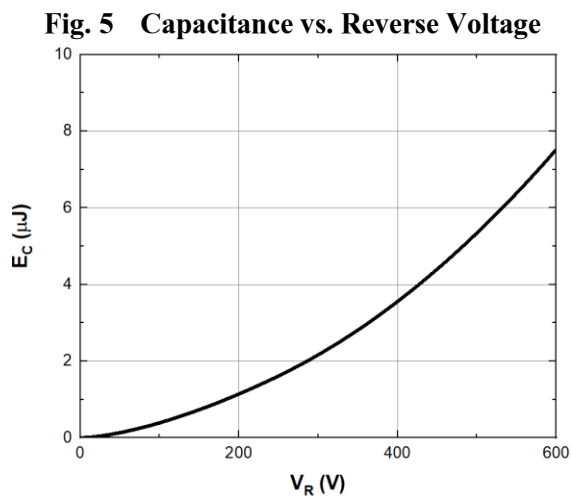
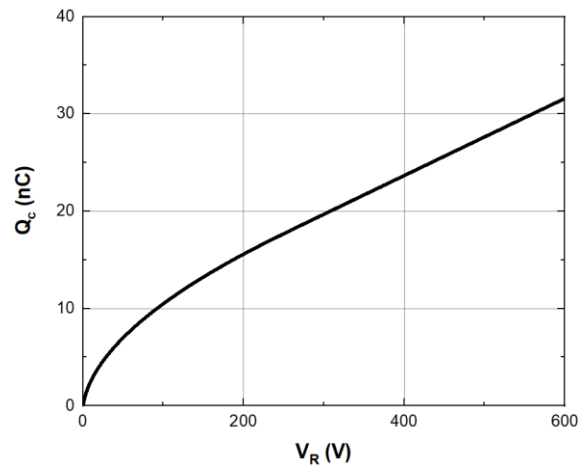
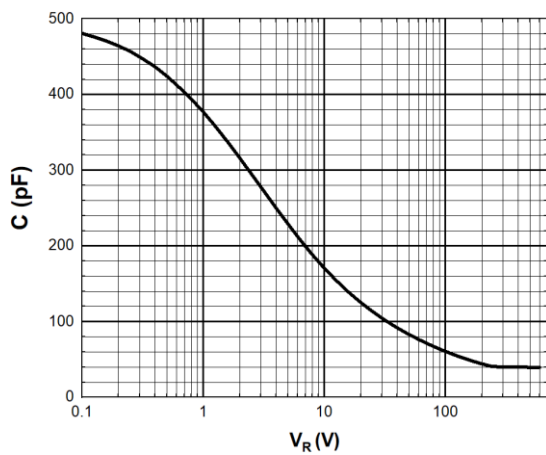
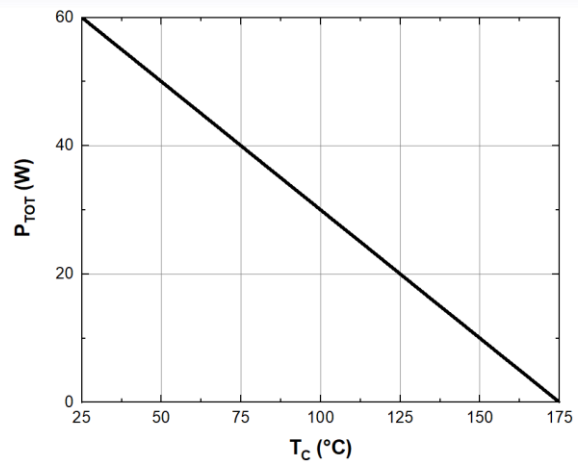
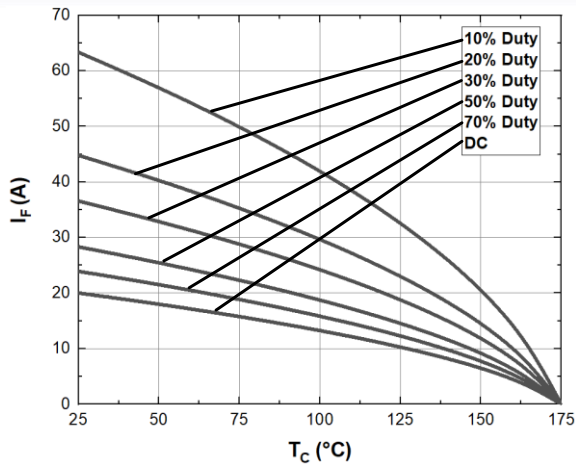
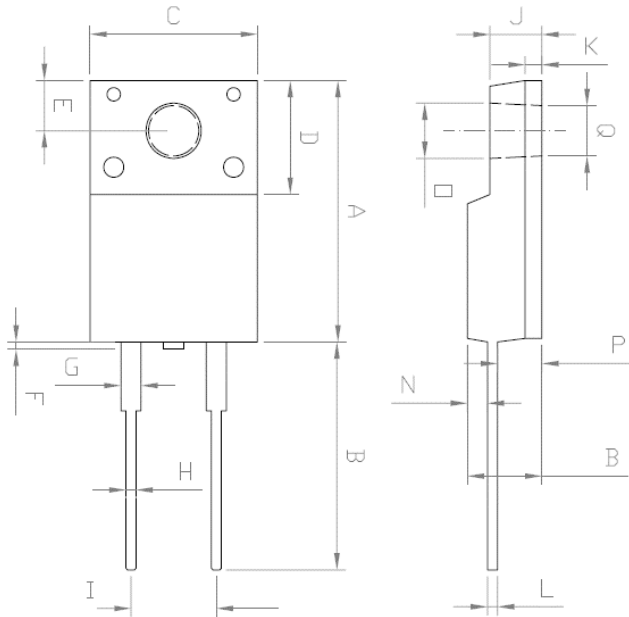


Fig. 2 Reverse Characteristics

Typical Performance



Package TO-220-2FP (Unit: mm)



| REF.DIM | DATA BOOK mm | | |
|---------|--------------|-------|-------|
| | NOR | MIN | MAX |
| A | 15.6 | 14.8 | 16.1 |
| B | 13 | 12.65 | 13.8 |
| C | 10 | 9.85 | 10.36 |
| D | 6.5 | 4.6 | 6.8 |
| E | 3.0 | 2.55 | 3.5 |
| F | | | 1 |
| G | 1.2 | 1 | 1.45 |
| H | 0.6 | 0.3 | 0.9 |
| I | 5.1 | 4.8 | 5.4 |
| J | 3.1 | 2.34 | 3.3 |
| K | 1.0 | 0.55 | 1.3 |
| L | 0.6 | 0.36 | 0.8 |
| M | 4.45 | 4.2 | 4.9 |
| N | 1.2 | 1.1 | 1.8 |
| O | 3.3 | 2.9 | 3.5 |
| P | 2.6 | 2.5 | 3.15 |
| Q | 3 | 2.9 | 3.5 |

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