



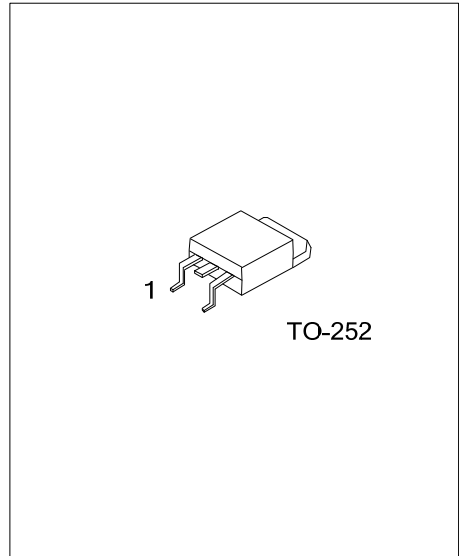
UFR1040

FAST RECOVERY EPITAXIAL DIODE

SUPERFAST RECOVERY RECTIFIER

■ DESCRIPTION

The UTC **UFR1040** is a superfast recovery rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop, low leakage, high current capability and high surge capability etc. These characteristics make it ideal for heavy duty applications that demand long term reliability. also fit into auxiliary functions such as snubber, bootstrap, and demagnetization applications.



■ FEATURES

- * Ultra-Fast Recovery Time for High Efficiency
- * Low Forward Voltage Drop, High Current Capability and Low Power Loss

■ SYMBOL



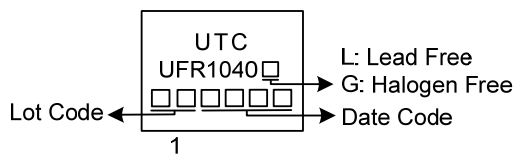
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | Packing |
|-----------------|----------------|---------|----------------|---|---------|
| Lead Free | Halogen Free | | 1 | 2 | |
| UFR1040L-TN3-R | UFR1040G-TN3-R | TO-252 | K | A | Tube |

Note: Pin Assignment: A: Anode K: Cathode

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>UFR1040G-TN3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package | <ul style="list-style-type: none"> (1) R: Tape Reel (2) TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

Ratings at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------------------|-------------|------------|------------------|
| Repetitive Peak Reverse Voltage | V_{RRM} | 400 | V |
| Average forward current, $\delta=0.5\%$ | $I_{F(AV)}$ | 10 | A |
| Surge non repetitive forward current | I_{FSM} | 70 | A |
| Operating Junction Temperature | T_J | +150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 ~ +150 | $^\circ\text{C}$ |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|------------------|---------------|---------|--------------------|
| Junction to Case | θ_{JC} | 3.1 | $^\circ\text{C/W}$ |

■ ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz

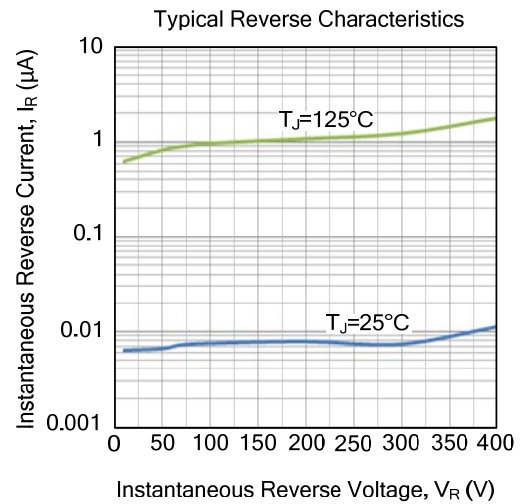
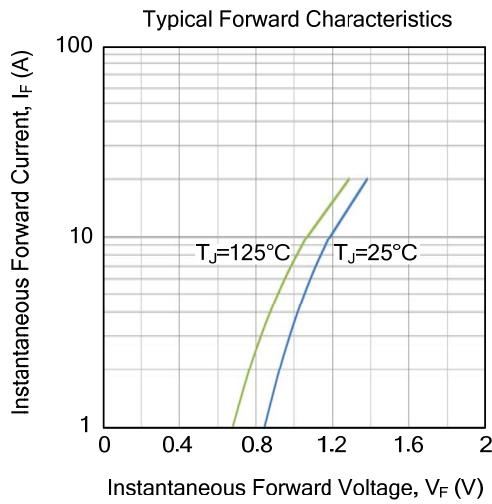
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT | |
|----------------------------------------|----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------|------|---------------|----|
| Forward voltage drop (Note 1) | V_F | $I_F=10\text{A}$ | $T_J=25^\circ\text{C}$ | | 1.4 | V | |
| | | | $T_J=125^\circ\text{C}$ | | 1.3 | V | |
| Instantaneous Reverse Current (Note 2) | I_R | $V_R=V_{RRM}$ | $T_J=25^\circ\text{C}$ | | 10 | μA | |
| | | | $T_J=125^\circ\text{C}$ | | 500 | μA | |
| Reverse recovery time | t_{rr} | $I_F=1.0\text{A}, V_R=30\text{V}, dI_F/dt=-200\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$ | | 18.4 | | ns | |
| | | | $I_F=5\text{A}, V_R=30\text{V}, dI_F/dt=-200\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$ | | 26.8 | | ns |
| | | | $I_F=10\text{A}, V_R=30\text{V}, dI_F/dt=-200\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$ | | 31.2 | | ns |

Notes: 1. Pulse test: $t_p = 380\text{ ms}$, $\delta = 2\%$.

2. Pulse test: $t_p = 5\text{ ms}$, $\delta = 2\%$.

3. To evaluate the conduction losses use the following equation: $P=1.4 \times I_{F(AV)} + 0.027 I_F^2$ (RMS).

■ TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.