

New Jersey Semi-Conductor Products, Inc.

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SPRINGFIELD, NEW JERSEY 07081
U.S.A.

**MUR3010PT, RURH1510CC,
MUR3015PT, RURH1515CC,
MUR3020PT, RURH1520CC**

15A, 100V - 200V Ultrafast Dual Diodes

Features

- Ultrafast with Soft Recovery Characteristic ($t_{RR} < 30\text{ns}$)
- +175°C Rated Junction Temperature
- Reverse Voltage Up to 200V
- Avalanche Energy Rated

Applications

- Switching Power Supply
- Power Switching Circuits
- General Purpose

Description

MUR3010PT, MUR3015PT, MUR3020PT and RURH1510CC, RURH1515CC, RURH1520CC are ultrafast dual diodes ($t_{RR} < 30\text{ns}$) with soft recovery characteristics. They have a low forward voltage drop and are of planar, silicon nitride passivated, ion-implanted, epitaxial construction.

These devices are intended for use as energy steering/clamping diodes and rectifiers in a variety of switching power supplies and other power switching applications. Their low stored charge and ultrafast recovery with soft recovery characteristics minimizes ringing and electrical noise in many power switching circuits thus reducing power loss in the switching transistor.

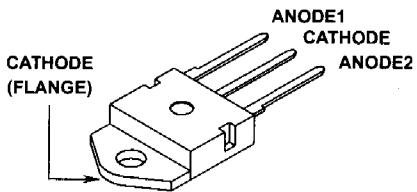
PACKAGING AVAILABILITY

| PART NUMBER | PACKAGE | BRAND |
|-------------|----------|-----------|
| MUR3010PT | TO-218AC | MUR3010PT |
| RURH1510CC | TO-218AC | RURH1510C |
| MUR3015PT | TO-218AC | MUR3015PT |
| RURH1515CC | TO-218AC | RURH1515C |
| MUR3020PT | TO-218AC | MUR3020PT |
| RURH1520CC | TO-218AC | RURH1520C |

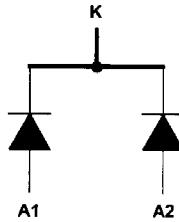
NOTE: When ordering, use the entire part number.

Package

JEDEC TO-218AC

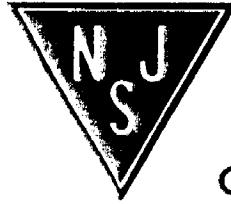


Symbol



Absolute Maximum Ratings $T_C = +25^\circ\text{C}$

| | MUR3010PT RURH1510CC | MUR3015PT RURH1515CC | MUR3020PT RURH1520CC |
|--|-------------------------|-------------------------|-------------------------|
| Peak Repetitive Reverse Voltage..... | V_{RRM} | 100V | 150V |
| Working Peak Reverse Voltage | V_{RWM} | 100V | 150V |
| DC Blocking Voltage..... | V_R | 100V | 150V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 15A | 15A |
| (Total device forward current at rated V_R and $T_C = 150^\circ\text{C}$) | | | |
| Peak Forward Repetitive Current | I_{FRM} | 30A | 30A |
| (Rated V_R , square wave 20kHz) | | | |
| Nonrepetitive Peak Surge Current | I_{FSM} | 200A | 200A |
| (Surge applied at rated load condition halfwave 1phase 60Hz) | | | |
| Operating and Storage Temperature | T_{STG}, T_J | -55°C to +175°C | -55°C to +175°C |
| | | | -55°C to +175°C |



Electrical Specifications $T_C = +25^\circ\text{C}$, Unless Otherwise Specified

| SYMBOL | TEST CONDITION | LIMITS | | | | | | | | | UNITS |
|--|--|-----------------------|-----|------|-----------------------|-----|------|-----------------------|-----|------|--------------------|
| | | MUR3010PT, RURH1510CC | | | MUR3015PT, RURH1515CC | | | MUR3020PT, RURH1520CC | | | |
| | | MIN | TYP | MAX | MIN | TYP | MAX | MIN | TYP | MAX | |
| V_F | $I_F = 15\text{A}$ $T_C = +150^\circ\text{C}$ | - | - | 0.85 | - | - | 0.85 | - | - | 0.85 | V |
| | $I_F = 15\text{A}$ $T_C = +25^\circ\text{C}$ | - | - | 1.05 | - | - | 1.05 | - | - | 1.05 | V |
| I_R at $T_C = +150^\circ\text{C}$ | $V_R = 100\text{V}$ | - | - | 500 | - | - | - | - | - | - | μA |
| | $V_R = 150\text{V}$ | - | - | - | - | - | 500 | - | - | - | μA |
| | $V_R = 200\text{V}$ | - | - | - | - | - | - | - | - | 500 | μA |
| I_R at $T_C = +25^\circ\text{C}$ | $V_R = 100\text{V}$ | - | - | 100 | - | - | - | - | - | - | μA |
| | $V_R = 150\text{V}$ | - | - | - | - | - | 100 | - | - | - | μA |
| | $V_R = 200\text{V}$ | - | - | - | - | - | - | - | - | 100 | μA |
| t_{RR} | $I_F = 1\text{A}$ | - | - | 30 | - | - | 30 | - | - | 30 | ns |
| | $I_F = 15\text{A}$ | - | - | 35 | - | - | 35 | - | - | 35 | ns |
| t_A | $I_F = 1\text{A}$ | - | 18 | - | - | 18 | - | - | 18 | - | ns |
| | $I_F = 15\text{A}$ | - | 20 | - | - | 20 | - | - | 20 | - | ns |
| t_B | $I_F = 1\text{A}$ | - | 9 | - | - | 9 | - | - | 9 | - | ns |
| | $I_F = 15\text{A}$ | - | 10 | - | - | 10 | - | - | 10 | - | ns |
| $R_{\theta JC}$ | | - | - | 1.5 | - | - | 1.5 | - | - | 1.5 | $^\circ\text{C/W}$ |
| E_{AVL} | see Fig. 7, 8 | - | - | 20 | - | - | 20 | - | - | 20 | mj |