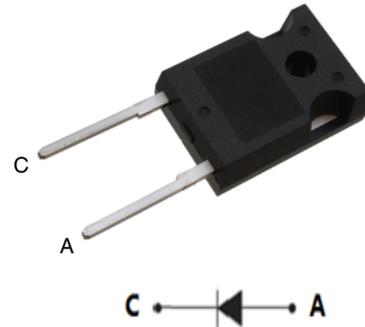


Fast Recover Diode in TO-247AD

Features

- Fast Recovery.....trr= 40ns
- Operating Temperature.....150 °C
- Reverse Voltage.....600V
- Avalanche Energy Rated



Mechanical Data

- **Case:** TO-247AD (plastic package).
Lead free; RoHS compliant
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
260 °C/10 sec. at terminals

Applications

- Switch Mode Power Supplies
- Hard Switched PFC Boost Diode
- UPS Free Wheeling Diode
- Motor Drive FWD
- SMPS FWD

Absolute Maximum Ratings

| Symbol | Parameter | Value | Units |
|-------------|--|-------------|-------|
| V_{RRM} | Peak Repetitive Reverse Voltage | 600 | V |
| $I_{F(AV)}$ | Diode Continuous Forward Current ($T_C=100^\circ\text{C}$) | 30 | A |
| I_{FRM} | Repetitive Peak Surge Current (20kHz Square Wave) | 60 | A |
| I_{FSM} | Nonrepetitive Peak Surge Current for Per Diode (Halfwave 1 Phase 50Hz) | 500 | A |
| T_J | Operating JunctionTemperatureRange | -55 to +150 | °C |
| T_{STG} | StorageTemperatureRange | -55 to +150 | °C |

Electrical Specifications ($T_J = 25^\circ\text{C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|----------|------------------------------------|--|------|------|------|---------------|
| V_R | Cathode to Anode Breakdown Voltage | $I_R = 100\mu\text{A}$ | 600 | | | |
| V_F | Diode Forward Voltage | $I_F=30\text{A } T_C=25^\circ\text{C}$ | | 2.0 | 2.4 | V |
| | Diode Forward Voltage | $I_F=30\text{A } T_C=125^\circ\text{C}$ | | 1.4 | | V |
| I_{RM} | Maximum Reverse Leakage Current | $V_R=600\text{V } T_C=25^\circ\text{C}$ | | | 100 | μA |
| | | $V_R=600\text{V } T_C=125^\circ\text{C}$ | | | 1 | mA |

Dynamic Recovery Characteristics($T_J = 25\text{ }^\circ\text{C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|-----------|--|---|------|------|------|-------|
| I_{RRM} | Diode Peak Reverse Recovery Current | $V_{DD}=30V; I_F=1A;$ $dif/dt=100A/\mu s;$ See Fig.4 | | 1.6 | | A |
| Q_{rr} | Reverse recovery charge (Area Under the Curve Defined by I_{RRM} and trr). | | | 30 | | nc |
| trr | Diode Reverse Recovery Time | | | 33 | 40 | ns |
| S | $S=tb/ta$ | | | 0.82 | | |
| I_{RRM} | Diode Peak Reverse Recovery Current | $V_{DD}=400V; I_F=30A;$ $dif/dt=500A/\mu s;$ See Fig.4 | | 9 | | A |
| Q_{rr} | Reverse recovery charge (Area Under the Curve Defined by I_{RRM} and trr). | | | 210 | | nc |
| trr | Diode Reverse Recovery Time | | | 41 | 46 | ns |
| S | $S=tb/ta$ | | | 1.17 | | |

Fig.1 Forward Current vs Forward Voltage

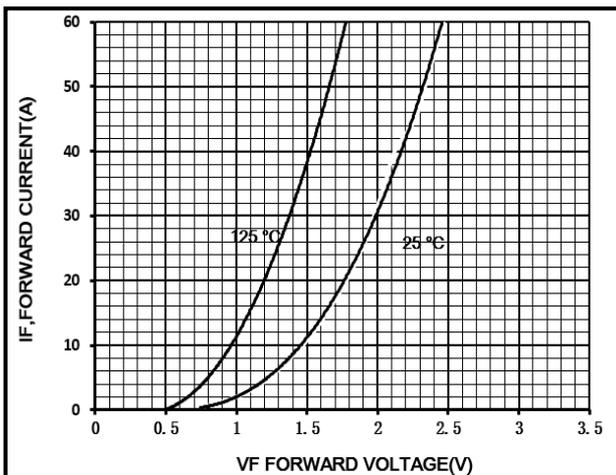


Fig.2 Reverse Current vs Reverse Voltage

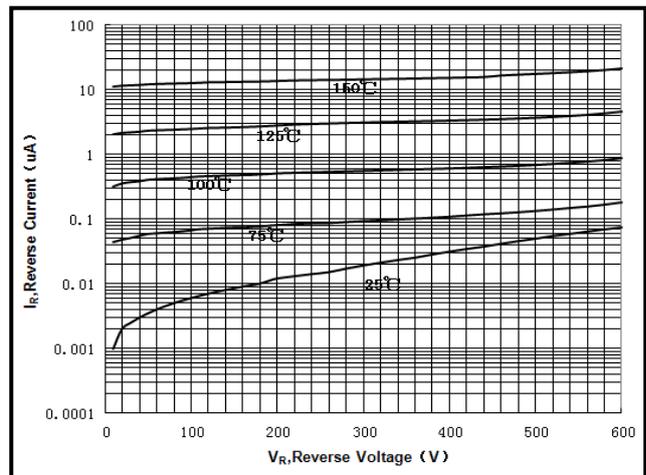
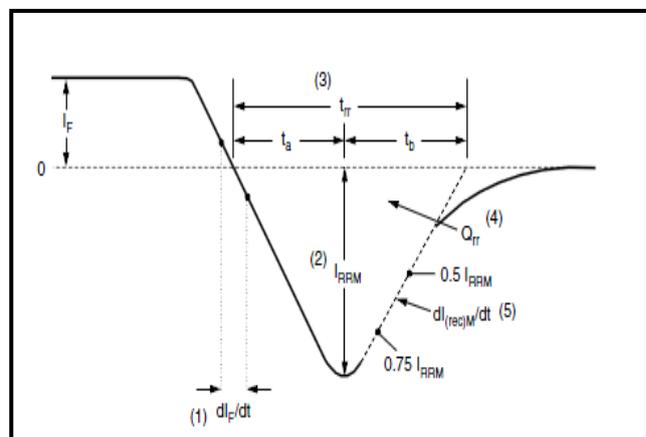
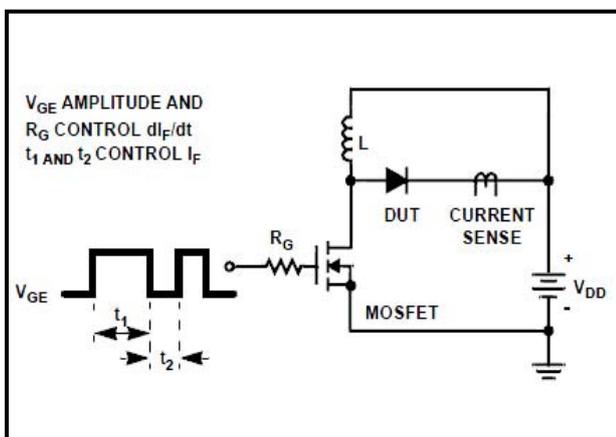
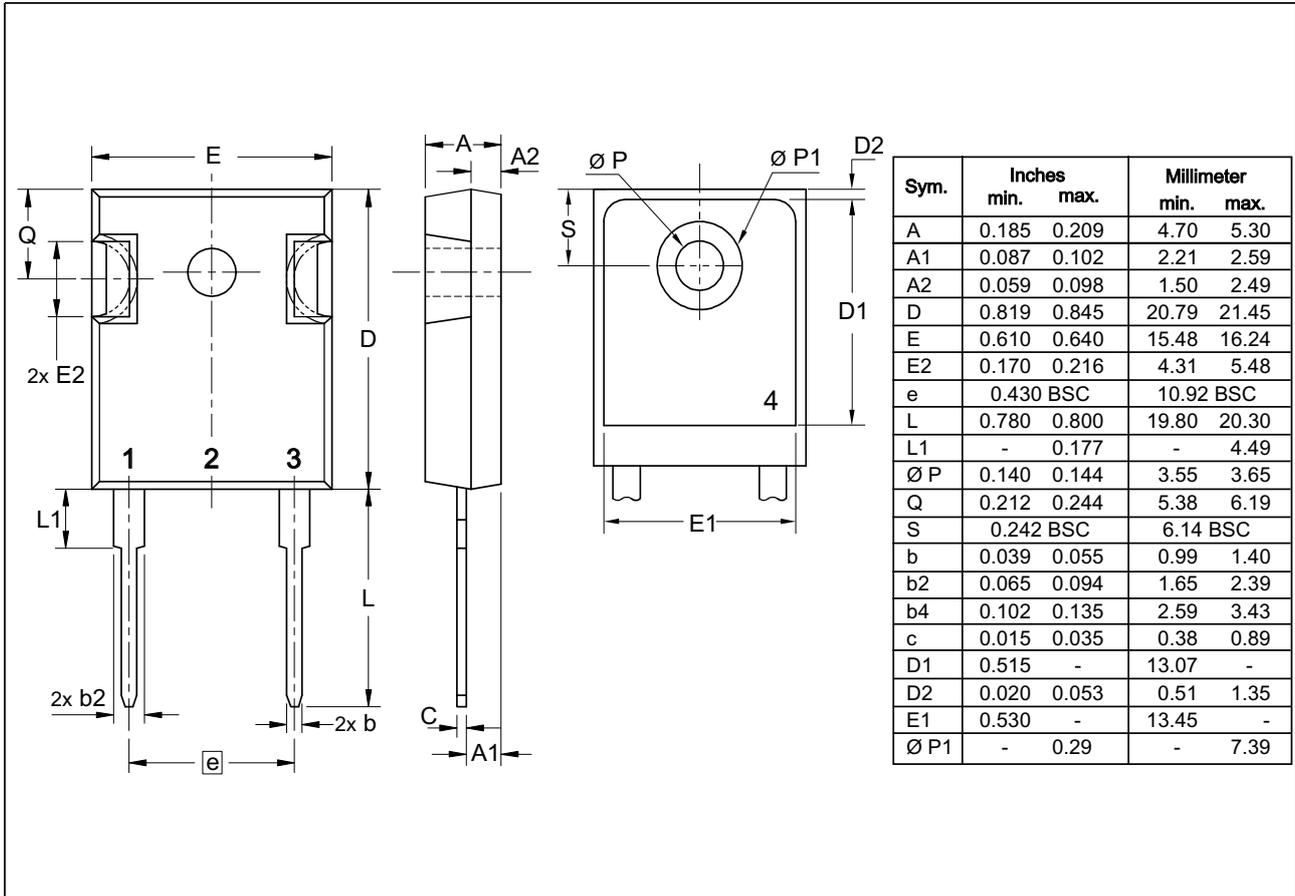


Fig.3 trr Test Circuit Fig.4 trr Waveforms and Definitions



Package Dimensions



Ordering information

| Order code | Package | Packaging option | Base quantity | Packaging specification |
|------------|----------|------------------|---------------|-------------------------|
| CXD3060HU | TO-247AD | Tube/BOX | 2000pcs / BOX | |

Revision history

| Date | Revision | Changes |
|-------------|----------|-----------------|
| 23-May-2012 | 1.0 | Initial release |

CAUTION / WARNING

Information in this document is believed to be accurate and reliable. However, CREATEK does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Users should independently evaluate the suitability of and test each product selected for their own applications, and CREATEK assumes no liability whatsoever relating to the choice, selection or use of the CREATEK products and services described herein. CREATEK reserves the right to change or update, without notice, any information contained in this publication; to change, without notice, the design, construction, processing, or specification of any product; and to discontinue or limit production or distribution of any product.

Information in this document supersedes and replaces all information previously supplied.

Products are not designed, authorized or warranted to be suitable for use in medical, military, aircraft, space or life support equipment, nor in applications where failure or malfunction of an CREATEK product can reasonably be expected to result in personal injury, death or severe property or environmental damage. CREATEK accepts no liability for inclusion and/or use of CREATEK products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from national authorities.

Resale of CREATEK products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by CREATEK for the CREATEK product or service described herein and shall not create or extend in any manner whatsoever, any liability of CREATEK.

CREATEK expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. CREATEK only obligations are those in the CREATEK Standard Terms and Conditions of Sale and in no case will CREATEK be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.

Specifications are subject to change without notice

© Copyright 2009, CREATEK Microelectronics

 CREATEK[®] is a registered trademark of CREATEK Microelectronics

All rights reserved