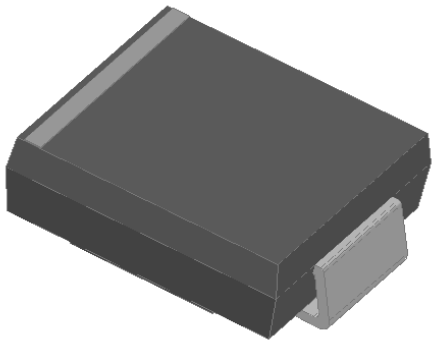
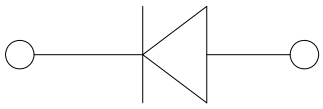
# Surface Mount Ultrafast Rectifier Diode





## Features

- Ultrafast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260 °C max. 10 s, per JESD 22-B106

## Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

## Mechanical Data

- **Package**: DO-214AB (SMC)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: Color band denotes the cathode end

## ■Maximum Ratings (Ta=25℃ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MURS340 |
|---|---|---|---|
| Device marking code | | | MURS340 |
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | 400 |
| Maximum RMS Voltage | $V_{RMS}$ | V | 280 |
| Maximum DC blocking Voltage | $V_{DC}$ | V | 400 |
| Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1) | $I_O$ | A | 3.0 |
| Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃ | $I_{FSM}$ | A | 100 |
| Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃ | | | 200 |
| Current squared time @1ms≤t≤8.3ms Tj=25℃ | $I^2t$ | $A^2s$ | 41.5 |
| Storage Temperature | $T_{stg}$ | ℃ | -55 ~ +150 |
| Junction Temperature | Tj | ℃ | -55 ~ +150 |

## ■Electrical Characteristics (Ta=25℃ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | MURS340 |
|---|---|---|---|---|
| Maximum instantaneous forward voltage | $V_F$ | V | $I_{FM}$=3.0A | 1.25 |
| Maximum reverse recovery time | $t_{rr}$ | ns | $I_F$=0.5A,$I_R$=1.0A, $I_{rr}$=0.25A | 50 |
| Maximum DC reverse current at rated DC blocking voltage | $I_R$ | μA | Tj =25℃ | 5 |
| | | | Tj =125℃ | 50 |
| Typical junction capacitance | Cj | pF | Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C | 55 |

## ■Dynamic Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | | Min | Typ | Max |
|---|---|---|---|---|---|---|---|
| Reverse Recovery Time | $T_{RR}$ | ns | Tj=25℃ | $I_F$=1A，di/dt=-50A/us $V_{RM}$=30V | - | 40 | - |
| | | | Tj=25℃ | $I_F$=3A di/dt=-200A/us $V_{RM}$=200V | - | 32 | - |
| | | | Tj=125℃ | | - | 52 | - |
| Peak recovery current | $I_{RRM}$ | A | Tj=25℃ | | - | 4.8 | - |
| | | | Tj=125℃ | | - | 7.5 | - |
| Reverse recovery charge | Qrr | nC | Tj=25℃ | | - | 76.5 | - |
| | | | Tj=125℃ | | - | 196.6 | - |
| Non-repetitive avalanche energy | $E_{AS}$ | mJ | Tj=25℃ | $I_R$=0.8 A，L=15 mH | 4.8 | - | - |

## ■Thermal Characteristics （$T_a$=25℃ Unless otherwise specified）

| PARAMETER | SYMBOL | UNIT | MURS340 |
|---|---|---|---|
| Typical Thermal resistance | $R_{\theta J-A}$(1) | ℃/W | 50 |
| | $R_{\theta J-L}$(1) | | 20 |
| | $R_{\theta J-C}$(1) | | 15 |

Note(1)
Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas

## ■Ordering Information (Example)

| PREFERED P/N | PACKAGE CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| **MURS340** | F1 | Approximate 0.248 | 3000 | / | 42000 | 13” reel |

## ■ Characteristics(Typical)

FIG.1: Io-TL Curve

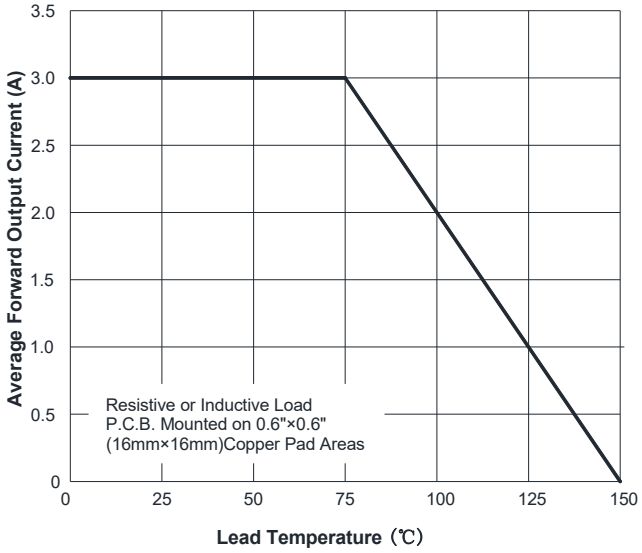



FIG.2: Forward Surge Current Capadility

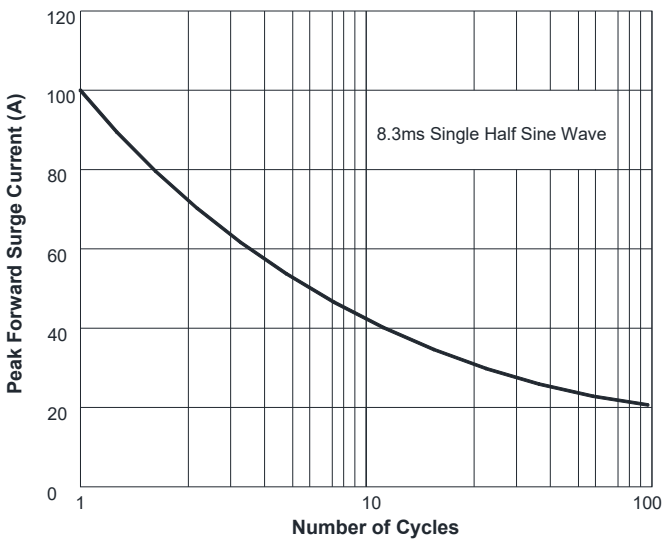


FIG3：Typical Forward Voltage

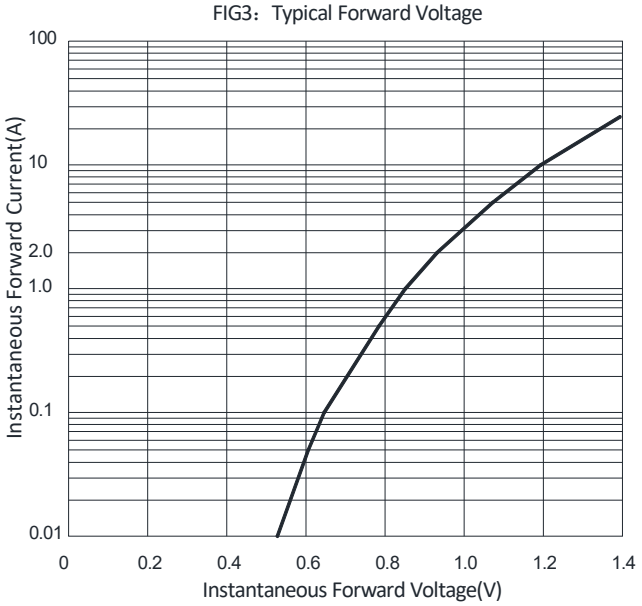



**FIG.4: Typical Reverse Characteristics**

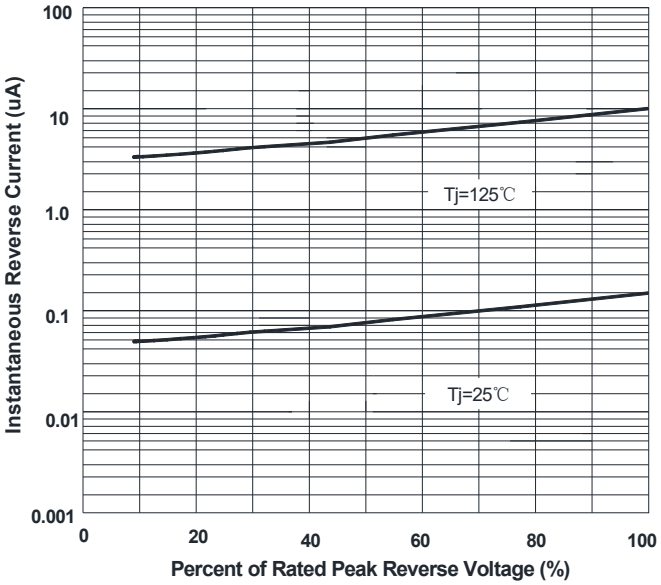
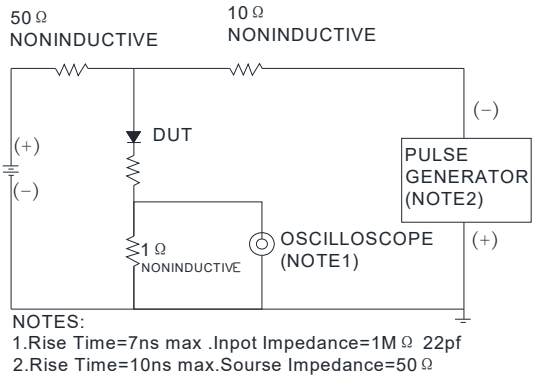
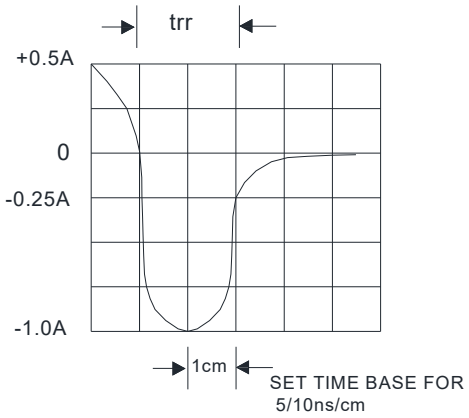
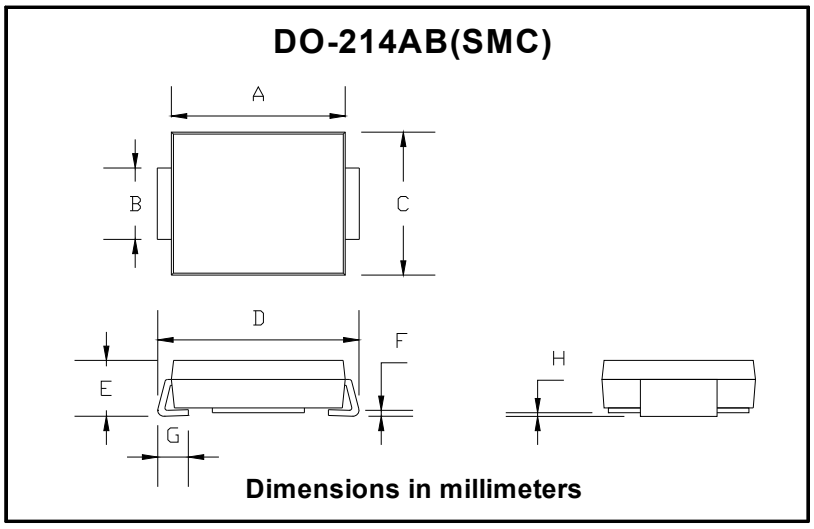



**FIG.5: Diagram of circuit and Testing wave form of reverse recovery time**



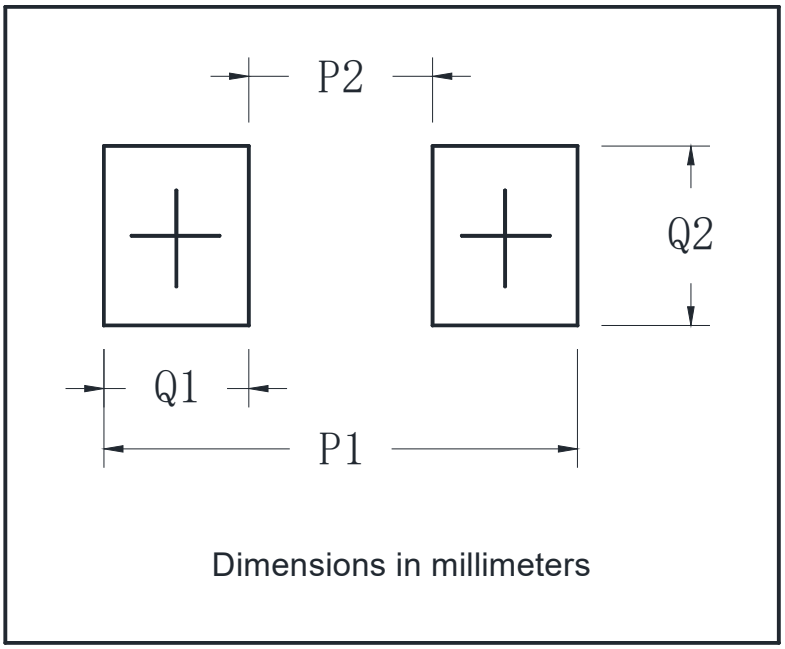




## ■ Outline Dimensions




| DO-214AB (SMC) | | |
|---|---|---|
| Dim | Min | Max |
| A | 6.60 | 7.11 |
| B | 2.85 | 3.27 |
| C | 5.59 | 6.22 |
| D | 7.75 | 8.13 |
| E | 1.99 | 2.61 |
| F | 0.15 | 0.31 |
| G | 0.76 | 1.52 |
| H | 0.05 | 0.20 |

## ■ Suggested pad layout




| DO-214AB (SMC) | |
|---|---|
| Dim | Min |
| P1 | 9.9 |
| P2 | 3.84 |
| Q1 | 3.03 |
| Q2 | 3.82 |

## Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.
Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.