

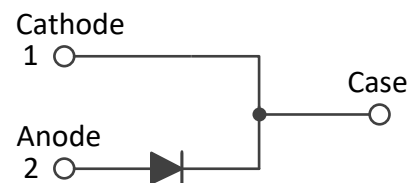
75A,650V Ultrafast Recovery Rectifier

Features

- FRED Wafer Construction
- Low forward drop voltage, low power loss
- High Surge Current Capability
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-247AC



Applications

- SMPS
- Inverter
- UPS

Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 30 units per plastic tube

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

| Parameter | Symbol | SMUR7565P | Unit |
|--|--------------------|-------------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 650 | V |
| Working peak reverse voltage | V _{RWM} | 650 | V |
| Maximum DC blocking voltage | V _{DC} | 650 | V |
| Maximum average forward rectified current | I _{F(AV)} | 75 | A |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | I _{FSM} | 600 | A |
| Voltage rate of change (rated V _R) | dv/dt | 10000 | V/μS |
| Operating junction temperature range | T _J | -55 to +175 | °C |
| Storage temperature range | T _{STG} | -55 to +175 | °C |

| Electrical Specifications (T _A =25°C unless otherwise noted) | | | | | |
|---|-----------------|---|------|------|------|
| Parameter | Symbol | Test Conditions | Typ | Max | Unit |
| Forward drop voltage (Note1) | V _F | I _F =75A, T _J =25°C | 1.45 | 1.80 | V |
| | | I _F =75A, T _J =125°C | - | 1.60 | |
| Reverse leakage current @V _R (Note2) | I _R | T _J =25°C | - | 10 | uA |
| | | T _J =125°C | - | 500 | |
| Reverse recovery time | t _{rr} | I _F =0.5A, I _R =1.0A, I _{RR} =0.25A | - | 90 | ns |

| Thermal-Mechanical Specifications (T _A =25°C unless otherwise noted) | | | |
|---|------------------|------|-------|
| Parameter | Symbol | Typ | Unit |
| Thermal Resistance, Junction to Case | R _{θJC} | 0.6 | °C /W |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 62.5 | °C /W |

Note:

1. Pulse test with PW=0.3ms, duty cycle=2%
2. Pulse test with PW=30ms

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

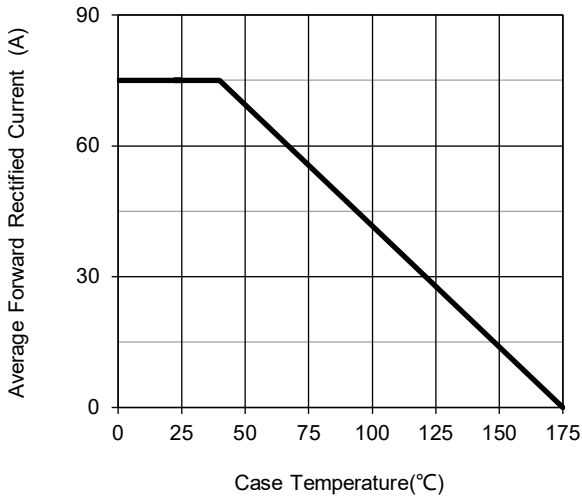


Fig.1 – Forward Current Derating Curve

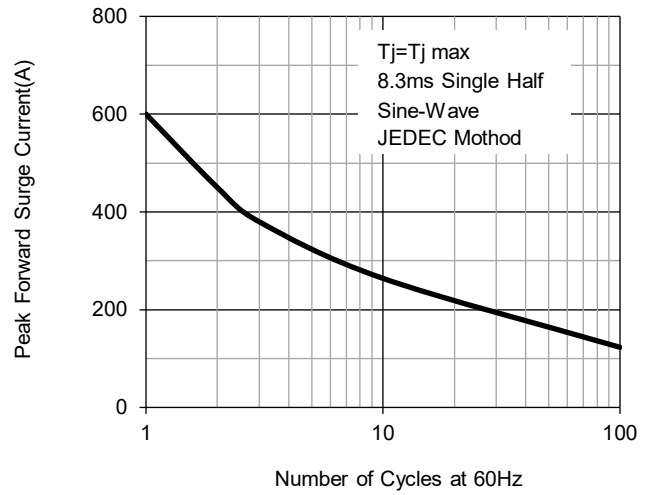


Fig.2 – Maximum Non-Repetitive Surge Current

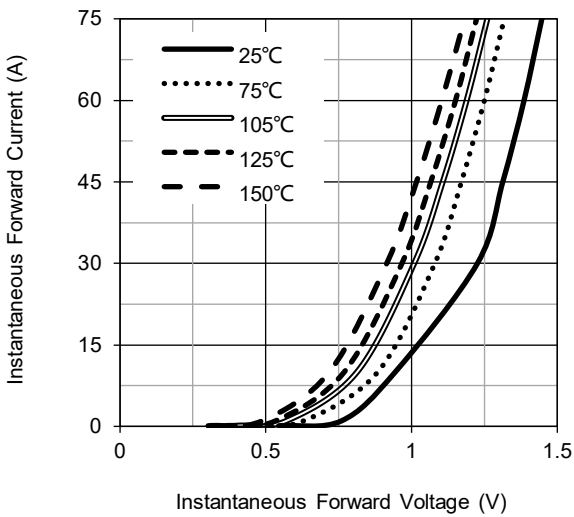


Fig.3 – Typical Forward Voltage Characteristics

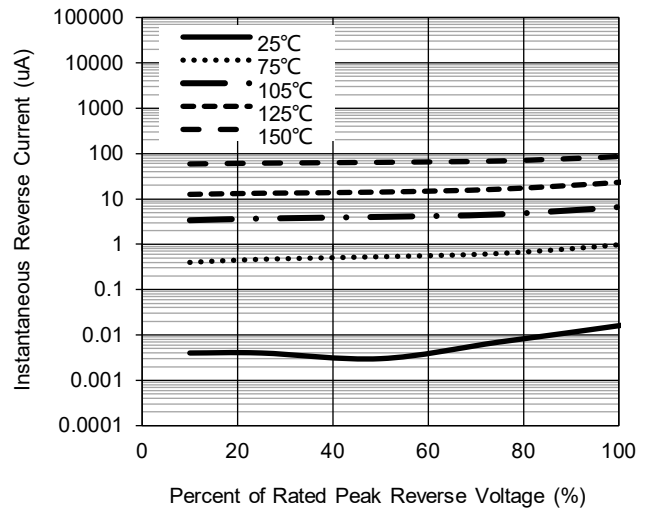


Fig.4 – Typical Reverse Current Characteristics

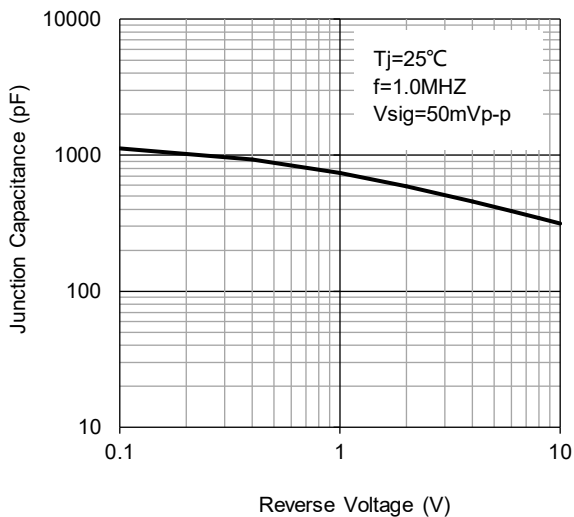
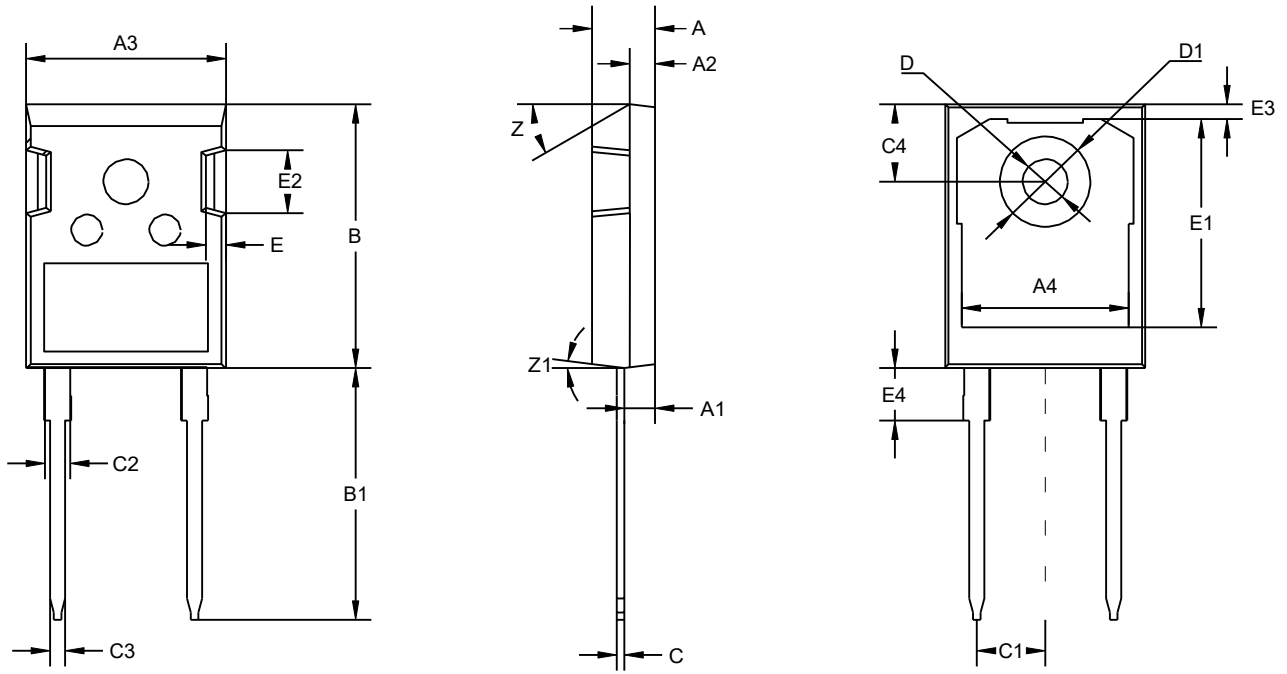


Fig.5 – Typical Junction Capacitance

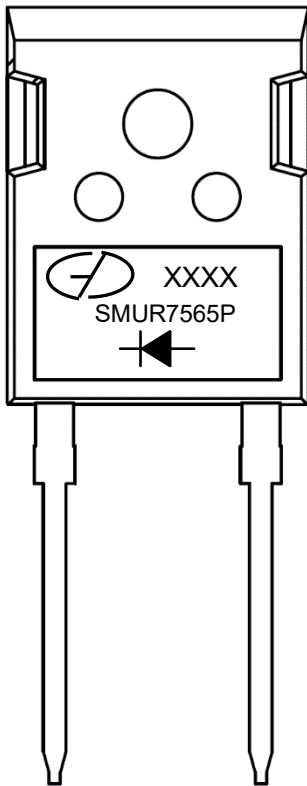
Package Outline Dimensions (Unit: millimeters)



TO-247AC



| TO-247AC | | | | | | | |
|----------|-------|-------|-------|----|------|-------|------|
| | Min. | Nom. | Max. | | Min. | Nom. | Max. |
| A | 4.7 | 5 | 5.2 | C3 | 1.1 | 1.2 | 1.3 |
| A1 | 2.3 | | 2.5 | C4 | 6.04 | 6.15 | 6.30 |
| A2 | 1.9 | 2 | 2.1 | D | 3.5 | 3.6 | 3.7 |
| A3 | 15.48 | 15.88 | 16.28 | D1 | 7 | 7.19 | 7.4 |
| A4 | 13.06 | 13.26 | 13.56 | E | 1.5 | 1.6 | 1.7 |
| B | 20.8 | 20.95 | 21.1 | E1 | | 16.55 | |
| B1 | 19.8 | 20 | 20.32 | E2 | 4.9 | 5.0 | 5.1 |
| C | 0.5 | 0.6 | 0.7 | E3 | 0.95 | 1.17 | 1.35 |
| C1 | 5.34 | 5.44 | 5.54 | Z | | 30° | |
| C2 | | 2 | | | | | |

Marking Outline



1. Logo Mark: 
2. Date code: XXXX
3. Part Name: SMUR7565P
4. Polarity : 

Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|------------------------|
| Rev.A | 2023.01.11 | Preliminary Datasheet |
| | | |
| | | |

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