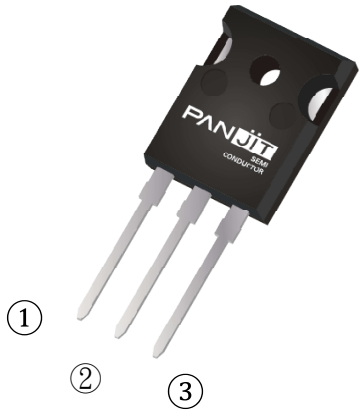
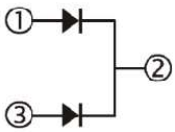
# Speedy Diode - Short Reverse Recovery Time, Fast Recovery Diode

| | | | |
|---|---|---|---|
| $V_{RRM}$ | 600 V | $I_F$ | 2x 15 A |
| $V_{F(TYP)}$ | 1.8 V | $T_{RR(TYP)}$ | 42 ns |

**TO-247AD-3LD**




## Features

- Fast recovery
- Suppressed switching loss with low $T_{RR}$
- Soft recovery characteristic for better EMI
- High junction temperature 150 °C
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

## Mechanical Data

- Case: TO-247AD-3LD molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.2198 ounces, 6.231 grams

## Application

- PFC, UPS, PV Inverter, EV Charging Station, Welder

## Maximum Ratings and Thermal Characteristics (per leg) ($T_C$ = 25 °C unless otherwise specified)

| PARAMETER | SYMBOL | LIMIT | UNITS |
|---|---|---|---|
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | 600 | V |
| DC Blocking Voltage | $V_{DC}$ | 600 | V |
| Diode Forward Current @ Tc=130°C<br>Diode Forward Current (Both Legs) | $I_{F(AV)}$ | 15<br>30 | A |
| Repetitive Peak Surge Current<br>*tp = 8.3 ms, sine-wave, D=0.5* | $I_{FRM}$ | 30 | A |
| Peak Forward Surge Current<br>*tp = 8.3 ms, single half sine-wave* | $I_{FSM}$ | 140 | A |
| Maximum Power Dissipation | $P_{total}$ | 125 | W |
| Operating Junction Temperature Range | $T_J$ | -55~150 | °C |
| Storage Temperature Range | $T_{STG}$ | -55~150 | °C |

## Electrical Characteristics (per leg) ($T_C$ = 25 °C unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| Forward voltage drop | $V_F$ | $I_F$ = 15 A, $T_J$ = 25 °C | - | 1.8 | 2.3 | V |
| | | $I_F$ = 15 A, $T_J$ = 125 °C | - | 1.45 | - | |
| Reverse leakage current | $I_R$ | $V_R$ = 600 V, $T_J$ = 25 °C | - | - | 100 | μA |
| | | $V_R$ = 600 V, $T_J$ = 125 °C | - | - | 500 | μA |
| Reverse recovery time | $T_{RR}$ | $I_F$=0.5A, $I_R$=1A, $I_{RR}$=0.25A $T_J$ = 25 °C | - | - | 40 | ns |
| | | $I_F$ = 1 A, $V_R$ = 30 V, di/dt = 300 A/μs, $T_J$ = 25 °C | - | - | 30 | ns |
| Reverse recovery time | $T_{RR}$ | $I_F$ = 15 A, $V_R$ = 400 V, di/dt = 300 A/μs, $T_J$ = 25 °C | - | 42 | 65 | ns |
| Peak recovery current | $I_{RRM}$ | | - | 3.3 | - | A |
| Reverse recovery charge | $Q_{RR}$ | | - | 70 | - | nC |
| Softness factor = tb / ta | S | | - | 1.65 | - | |
| Reverse recovery time | $T_{RR}$ | $I_F$ = 15 A, $V_R$ = 400 V, di/dt = 300 A/μs, $T_J$ = 125 °C | - | 62 | - | ns |
| Peak recovery current | $I_{RRM}$ | | - | 7.4 | - | A |
| Reverse recovery charge | $Q_{RR}$ | | - | 320 | - | nC |
| Softness factor = tb / ta | S | | - | 0.4 | - | |
| Thermal Resistance | $R_{\theta JC}$ | | - | - | 1.0 | °C/W |

## TYPICAL CHARACTERISTIC CURVES (per leg)

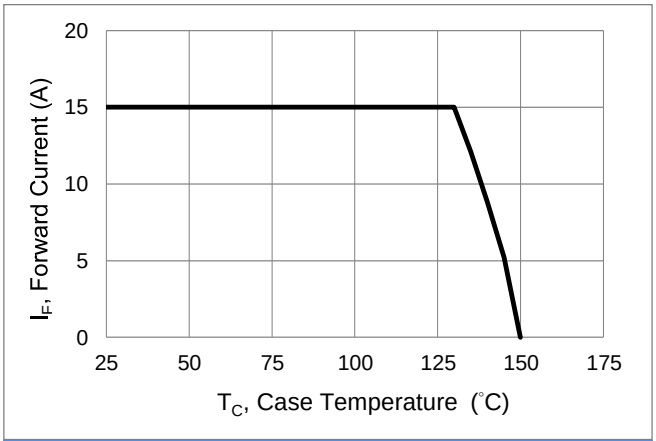



Fig.1 Forward Current Derating Curve

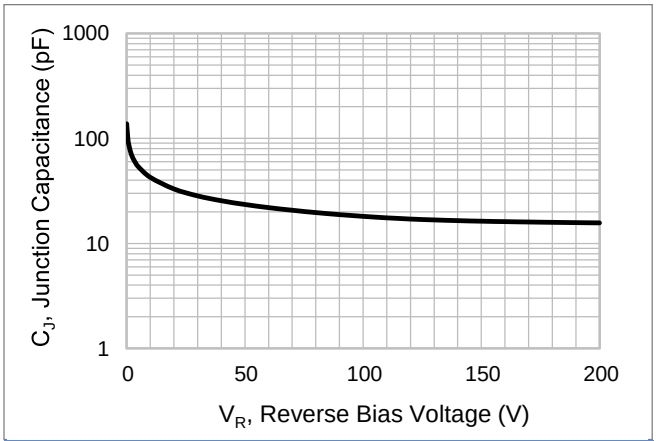



Fig.2 Typical Junction Capacitance

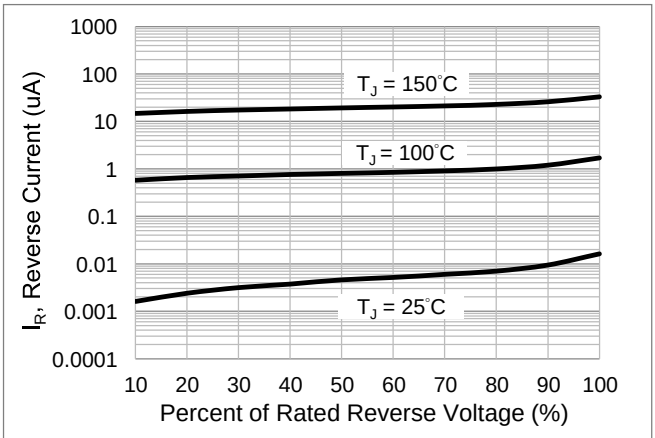



Fig.3 Typical Reverse Characteristics

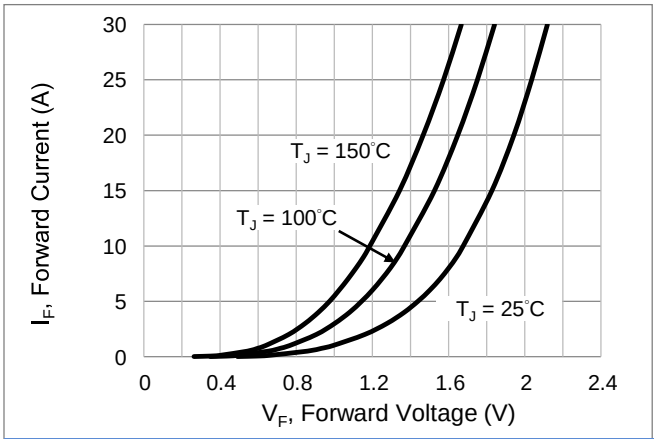



Fig.4 Typical Forward Characteristics

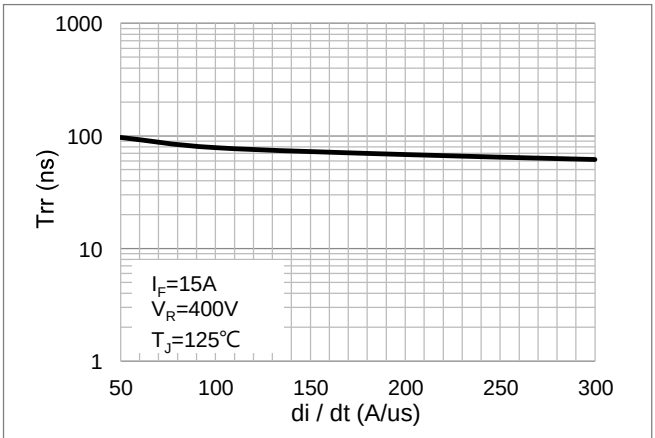



Fig.5 Typical Reverse Recovery Time Versus di/dt

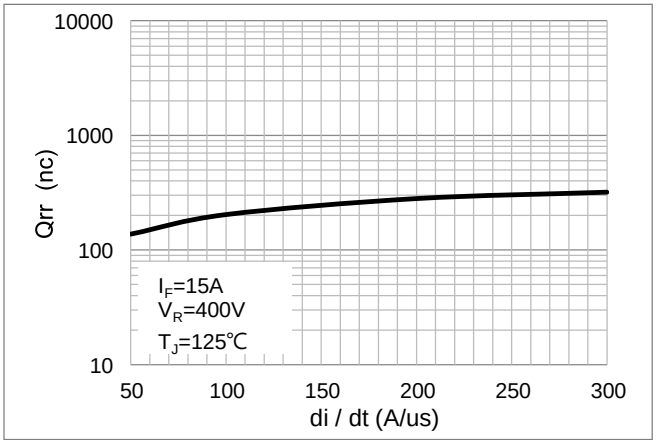


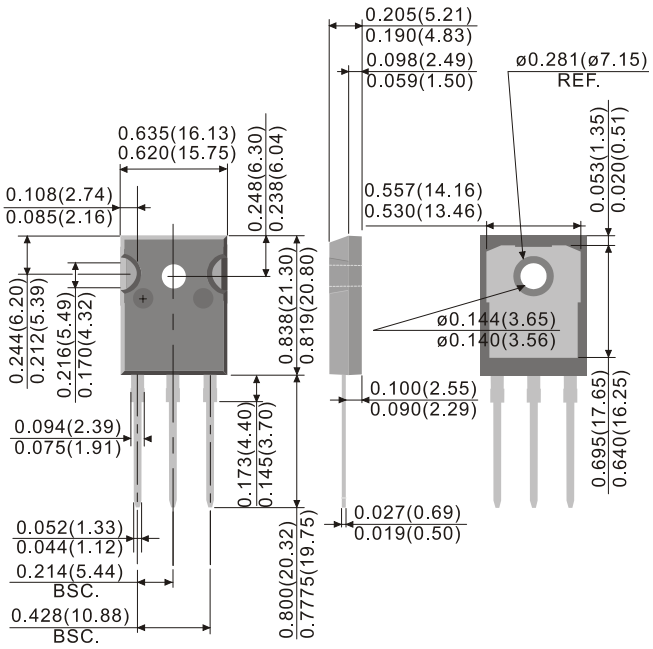

Fig.6 Typical Reverse Recovery Charges Versus di/dt

## Product and Packing Information

| Part No. | Package Type | Packing Type | Marking |
|---|---|---|---|
| PSDH3060CCS1 | TO-247AD-3LD | 30pcs / Tube | SDH3060CCS1 |

## Packaging Information

TO-247AD-3LD Dimension — Unit: inch(mm)



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