

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

$V_{RRM}$	600 V	$I_F$	2x 30 A
$V_{F(TYP)}$	1.8 V	$T_{RR(TYP)}$	45 ns

### 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

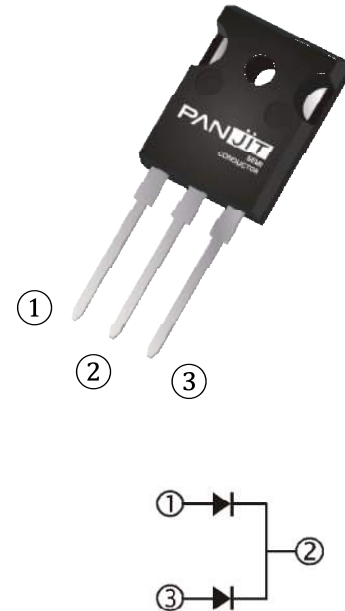
### Mechanical Data

- 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

TO-247AD-3LD



## Maximum Ratings and Thermal Characteristics (per leg) ( $T_c = 25\text{ }^\circ\text{C}$ 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 @ $T_c=115^\circ\text{C}$	$I_{F(AV)}$	30	A
Diode Forward Current (Both Legs)		60	
Repetitive Peak Surge Current <i>tp = 8.3 ms, sine-wave, D=0.5</i>	$I_{FRM}$	60	A
Peak Forward Surge Current <i>tp = 8.3 ms, single half sine-wave</i>	$I_{FSM}$	175	A
Maximum Power Dissipation	$P_{total}$	156	W
Operating Junction Temperature Range	$T_J$	-55~150	°C
Storage Temperature Range	$T_{STG}$	-55~150	°C

**Electrical Characteristics** (per leg) ( $T_C = 25\text{ }^\circ\text{C}$  unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward voltage drop	$V_F$	$I_F = 30\text{ A}$ , $T_J = 25\text{ }^\circ\text{C}$	-	1.8	2.3	V
		$I_F = 30\text{ A}$ , $T_J = 125\text{ }^\circ\text{C}$	-	1.45	-	
Reverse leakage current	$I_R$	$V_R = 600\text{ V}$ , $T_J = 25\text{ }^\circ\text{C}$	-	-	250	$\mu\text{A}$
		$V_R = 600\text{ V}$ , $T_J = 125\text{ }^\circ\text{C}$	-	-	1	mA
Reverse recovery time	$T_{RR}$	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $I_{RR} = 0.25\text{ A}$ $T_J = 25\text{ }^\circ\text{C}$	-	-	45	ns
		$I_F = 1\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 300\text{ A}/\mu\text{s}$ , $T_J = 25\text{ }^\circ\text{C}$	-	-	35	ns
Reverse recovery time	$T_{RR}$	$I_F = 30\text{ A}$ , $V_R = 400\text{ V}$ , $di/dt = 300\text{ A}/\mu\text{s}$ , $T_J = 25\text{ }^\circ\text{C}$	-	45	70	ns
Peak recovery current	$I_{RRM}$		-	3.6	-	A
Reverse recovery charge	$Q_{RR}$		-	90	-	nC
Softness factor = $t_b / t_a$	S		-	1.5	-	
Reverse recovery time	$T_{RR}$	$I_F = 30\text{ A}$ , $V_R = 400\text{ V}$ , $di/dt = 300\text{ A}/\mu\text{s}$ , $T_J = 125\text{ }^\circ\text{C}$	-	70	-	ns
Peak recovery current	$I_{RRM}$		-	9.9	-	A
Reverse recovery charge	$Q_{RR}$		-	480	-	nC
Softness factor = $t_b / t_a$	S		-	0.3	-	
Thermal Resistance	$R_{\theta JC}$		-	-	0.8	$^\circ\text{C}/\text{W}$

TYPICAL CHARACTERISTIC CURVES (per leg)

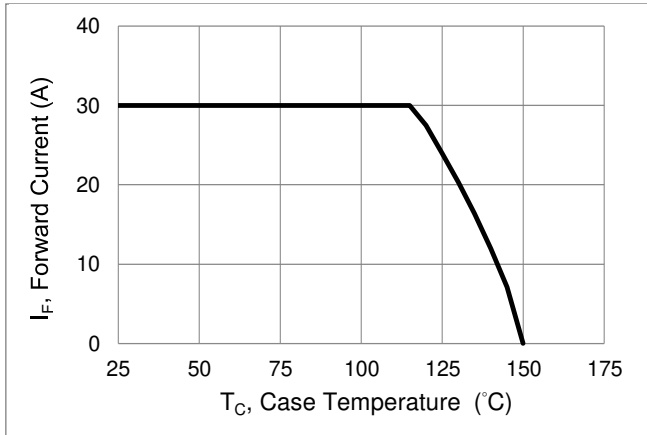


Fig.1 Forward Current Derating Curve

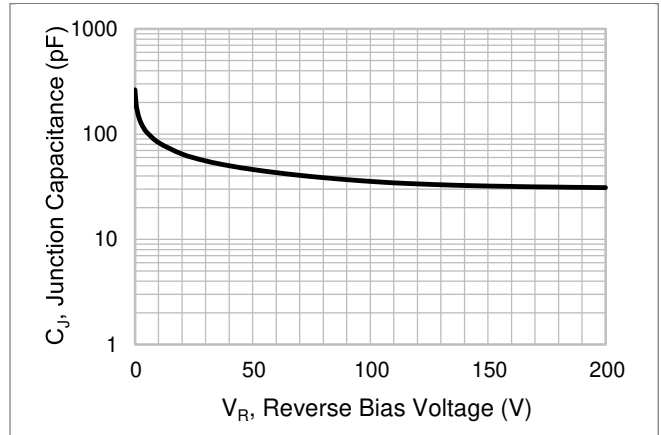


Fig.2 Typical Junction Capacitance

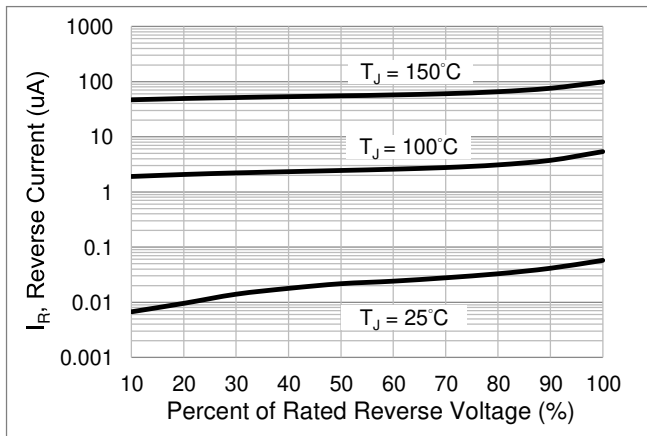


Fig.3 Typical Reverse Characteristics

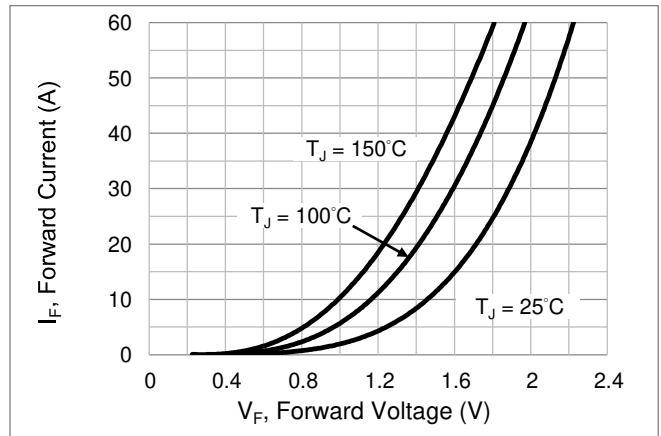


Fig.4 Typical Forward Characteristics

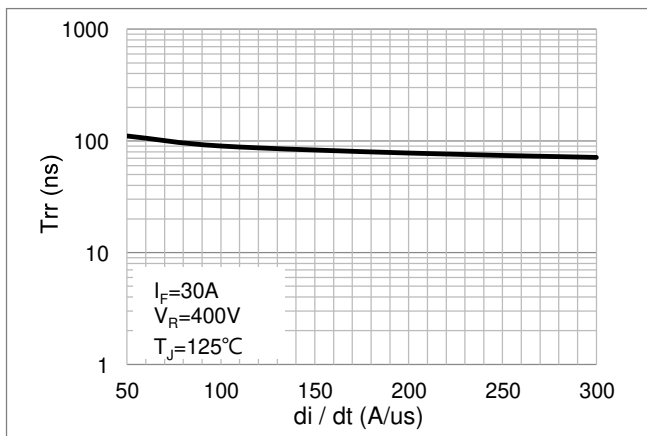


Fig.5 Typical Reverse Recovery Time Versus di/dt

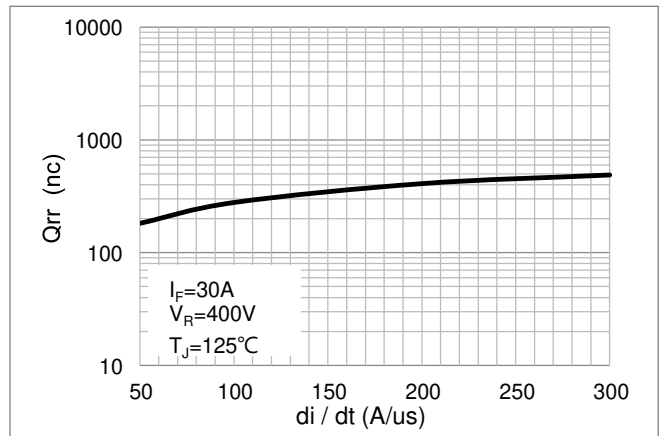
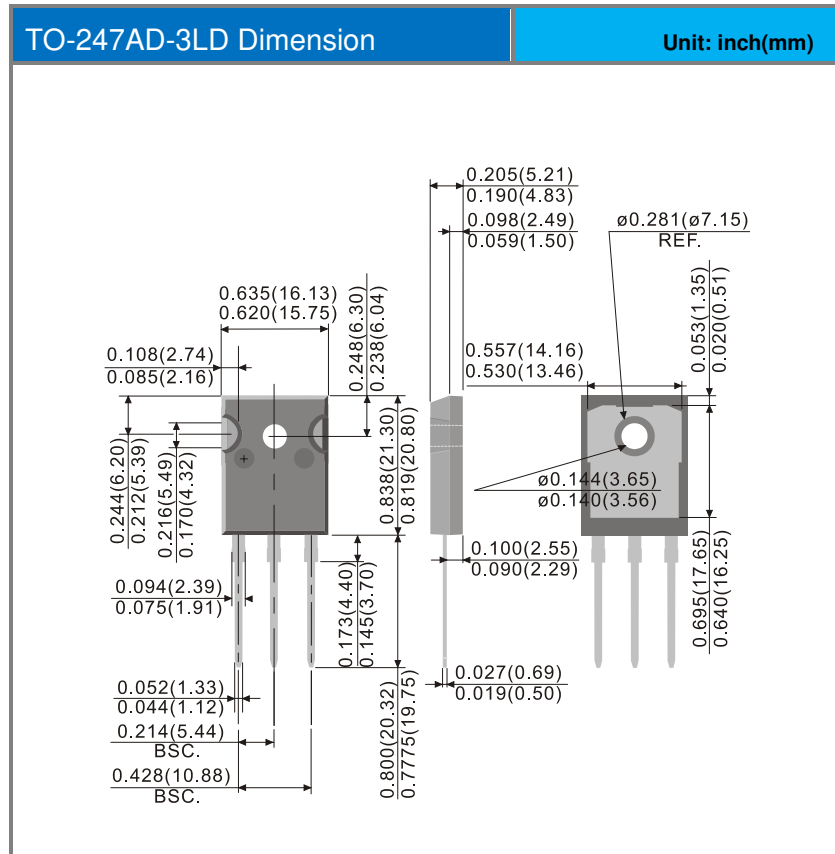


Fig.6 Typical Reverse Recovery Charges Versus di/dt

**Product and Packing Information**

Part No.	Package Type	Packing Type	Marking
PSDH6060CCS1	TO-247AD-3LD	30pcs / Tube	SDH6060CCS1

**Packaging Information**



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