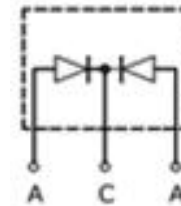


PRELIMINARY DATASHEET

Parallel (Common Cathode) 15A, 600V Fast Recovery Epitaxial Diode in TO247 Package

APPLICATIONS

- Switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

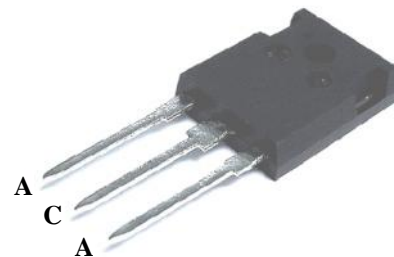


FEATURES

- Ultrafast recovery time
- Soft recovery characteristics
- Low recovery loss
- Low forward voltage
- Low recovery charge
- Low leakage current
- Pb-free finished; **RoHS compliant**

PACKAGE PIN DEFINITION

- **A** – Anode 1
- **C** – Cathode/Common-cathode
- **A** – Anode 2



PRODUCT SUMMARY	
Package	TO247-3L
Configuration	Common-cathode
$I_{F(AV)}$	2 x 15A
V_R	600V
$V_{F(typ)} @ I_{F(AV)}$	1.5V
$t_{rr(typ)}$	49 ns
T_{jmax}	150 °C

DESCRIPTION

IQAD15E60B1 is a 15A 600V rated common-cathode fast recovery epitaxial diode packaged in TO247-3L package. This device is intended for applications such as output rectification stage for SMPS, welding, UPS, DC-DC converters and also used as freewheeling diodes (FWD) for low voltage inverters and choppers in motor drives.

MAXIMUM RATINGS (per Leg)

Parameter	Symbol	Value	Units
Repetitive peak reverse voltage	V_{RRM}	600	V
Maximum average forward current, per Leg $T_C = 110^\circ\text{C}$	$I_{F(AV)}$	15	A
Maximum average forward current, per Device $T_C = 110^\circ\text{C}$		30	
Surge non-repetitive forward current $T_J = 45^\circ\text{C}$, $t_p = 10$ ms, 50Hz, Sine	I_{FSM}	150	
Operating junction and storage temperature	T_J, T_{stg}	-40... +150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thermal resistance, junction to case, per Leg	R_{thJC}	1.50	$^\circ\text{C}/\text{W}$
Thermal resistance, junction to case, per Device		0.75	

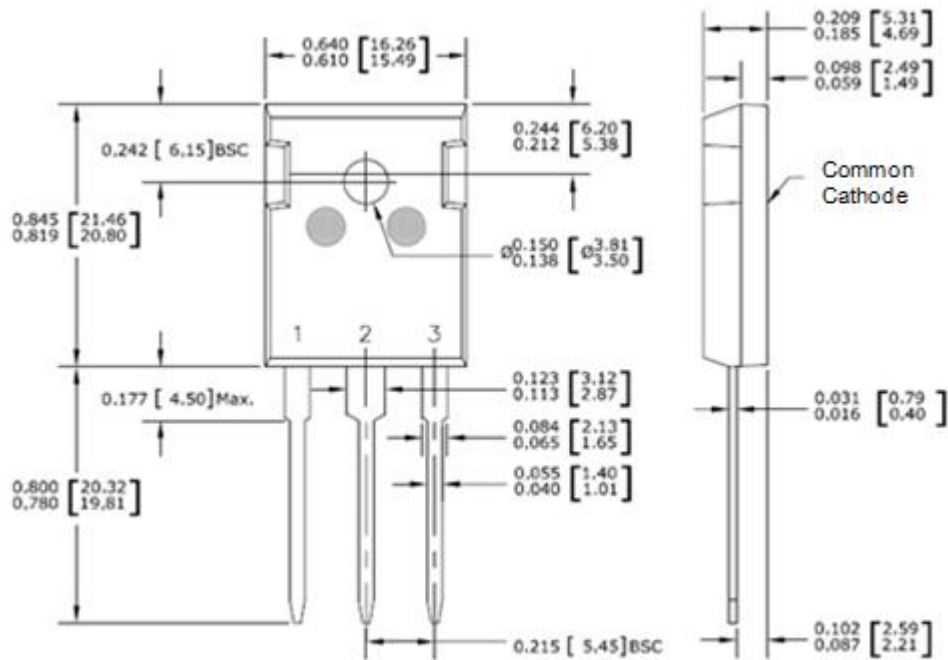
Electrical Characteristics (per Leg), at $T_J = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Static Characteristics					
Reverse leakage current $V_R = 600\text{V}$ $V_R = 600\text{V}$, $T_J = 125^\circ\text{C}$	I_R	-	-	10 250	μA
Forward voltage drop $I_F = 15\text{A}$	V_F	-	1.5	1.8	V

Electrical Characteristics (per Leg), at $T_J = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Dynamic Characteristics					
Reverse recovery time $V_R = 300\text{V}$, $I_F = 15\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}$, $I_F = 15\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_J = 125^\circ\text{C}$	t_{rr}	-	49 138	-	ns
Reverse recovery charge $V_R = 300\text{V}$, $I_F = 15\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}$, $I_F = 15\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_J = 125^\circ\text{C}$	Q_{rr}	-	40 500	-	nC
Maximum reverse recovery current $V_R = 300\text{V}$, $I_F = 15\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}$, $I_F = 15\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_J = 125^\circ\text{C}$	I_{rrm}	-	2.5 7.4	-	A

Package Outline Drawing



Disclaimer

These specifications may not be considered as a guarantee of components characteristics. Components have to be tested depending on intended application as adjustments may be necessary. The use of **iQXPRZ Power Inc.** components in life support appliances and systems are subject to written approval of **iQXPRZ Power Inc.**