

# Ultrafast Recovery Rectifier

DUR6030WT, 2x 30A, 300V, TO-247AD, Common Cathode

DUR6030WT



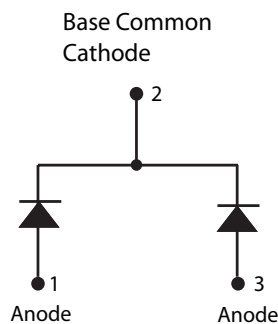
## Description

Littelfuse DUR series Ultrafast Recovery Rectifier is designed to meet the general requirements of commercial applications by providing low  $T_{rr}$ , high-temperature, low-leakage and low forward voltage drop products. It is suitable for output rectifier, free-wheeling or boost diode in high-frequency power switching application such as switch mode power supply and DC-DC converters.

## Features

- Ultra-fast switching
- Low reverse leakage current
- High surge current capability
- Low forward voltage drop
- Common Cathode configuration in TO-247AD package
- Pb-free E3 means 2nd level interconnect is Pb-free and the terminal finish material is tin(Sn) (IPC/ JEDEC J-STD-609A.01)

## Circuit Diagram



## Applications

- Output rectifiers in switch mode power supplies (SMPS) and DC to DC converters
- Free-wheeling diode or boost diode in converters and motor control circuits
- Anti-parallel diode for high frequency switching devices such as IGBT
- Uninterruptible Power Supplies (UPS)
- Inductive heating and melting
- Ultrasonic cleaners and welders

## Maximum Ratings

Characteristics	Symbol	Conditions	Max.	Unit
Peak Inverse Voltage	$V_{RWM}$	-	300	V
Average Rectifier Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 100^\circ\text{C}$ , rectangular wave form	30 ( Per Leg) 60 (Total Device)	A
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	$I_{FSM}$	8.3 ms, half sine pulse	400	A

## Electrical Characteristics

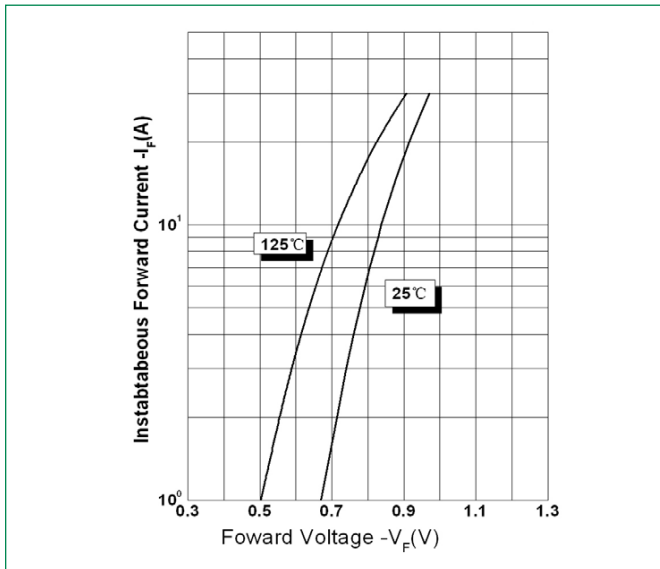
Characteristics	Symbol	Conditions	Max.	Unit
Forward Voltage Drop (Per Leg) <sup>1</sup>	$V_{F1}$	@30A, Pulse, $T_J = 25^\circ\text{C}$	1.3	V
	$V_{F2}$	@30A, Pulse, $T_J = 125^\circ\text{C}$	1.2	V
	$V_{F3}$	@30A, Pulse, $T_J = 150^\circ\text{C}$	1.1	V
Reverse Current (Per Leg) <sup>1</sup>	$I_{R1}$	@ $V_R = \text{Rated } V_R, T_J = 25^\circ\text{C}$	5.0	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{Rated } V_R, T_J = 125^\circ\text{C}$	1.0	mA
Reverse Recovery Time	$t_{rr1}$	$I_F = 500\text{mA}, I_R = 1\text{A}, \text{ and } I_{rm} = 250\text{mA}$	45	ns

Footnote 1: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

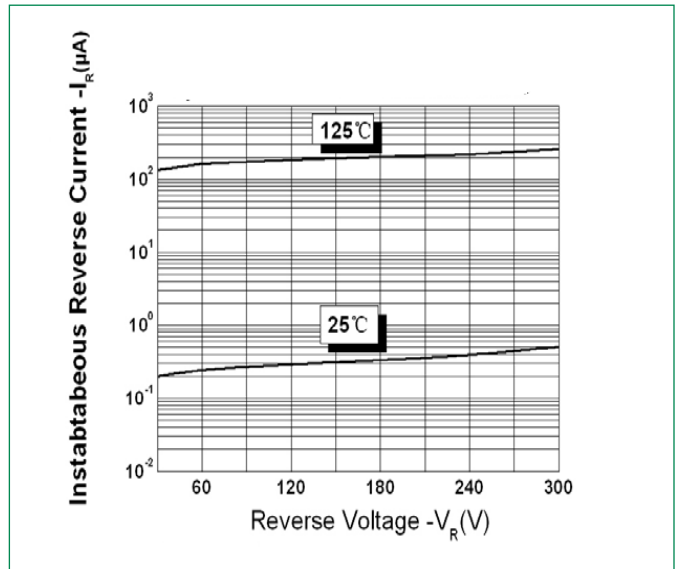
### Thermal-Mechanical Specifications

Characteristics	Symbol	Conditions	Specification	Unit
Junction Temperature	$T_J$	-	-55 to +150	°C
Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	2.0	°C/W
Approximate Weight	wt	-	6.28	g
Case Style	-	TO-247AD	-	-

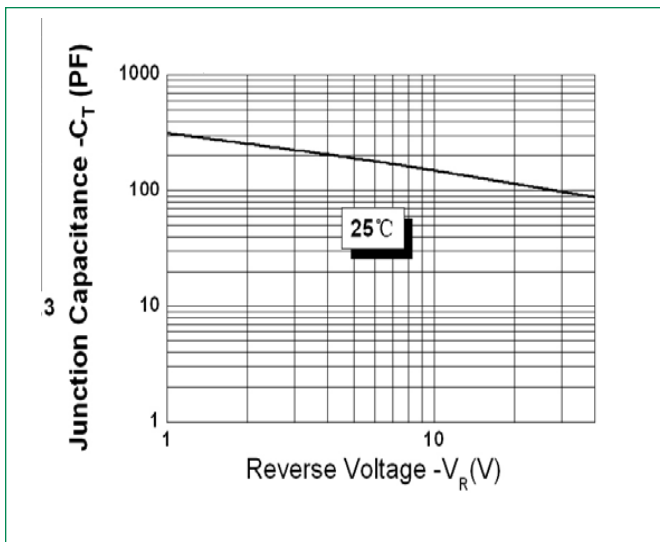
**Figure 1: Typical Forward Characteristics**



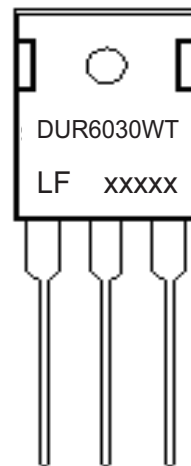
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**



**Part Numbering and Marking System**



Where XXXXX is YYWWL

- DUR = Device Type
- 60 = Forward Current (60A)
- 30 = Reverse Voltage (300V)
- WT = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

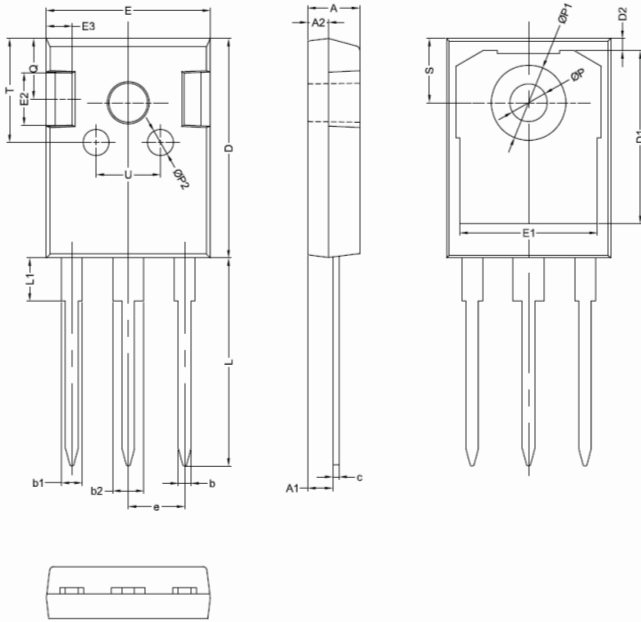
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## Packing Options

Part Number	Marking	Packing Mode	M.O.Q
DUR6030WT	DUR6030WT	30 pcs/Tube	300

## Dimensions-Package TO-247AD



Symbol	Millimeters	
	Min	Max
A	4.70	5.31
A1	2.21	2.61 *
A2	1.50	2.49
b	0.99	1.40
b1	1.65	2.39
b2	2.59	3.43
c	0.38	0.89
D	20.30 *	21.46
D1	13.08	-
D2	0.51	1.35
E	14.80 *	16.26
E1	13.46	-
E2	4.32	5.49
E3	1.45 *	2.74
e	5.461 BSC	
L	19.42 *	20.85 *
L1	-	4.60 *
P	3.35 *	3.70 *
P1	-	7.40 *
Q	5.38	6.20
S	5.83 *	6.25 *

Footnote \*: The spec. does not comply with JEDEC spec.

## Tube Specification TO-247AD

