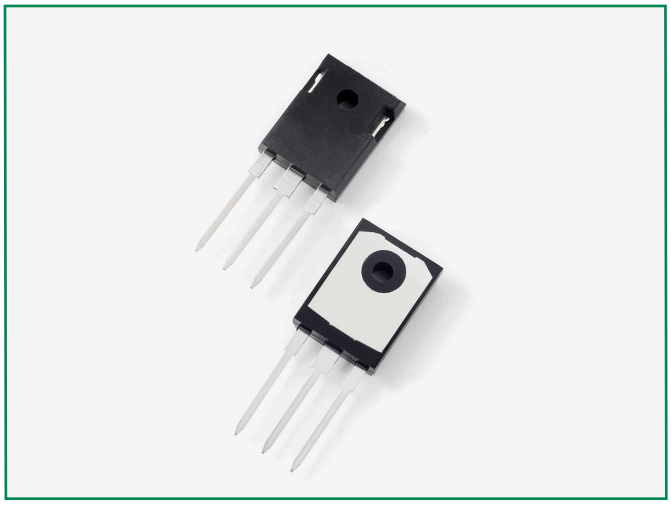
Ultrafast Recovery Rectifier

DUR6040WT, 2x 30A, 400V, TO-247AD, Common Cathode

Littelfuse
Expertise Applied | Answers Delivered

DUR6040WT

RoHS Pb e3



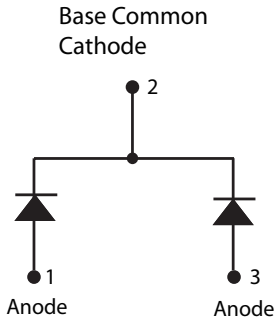
Description

Littelfuse DUR series Ultrafast Recovery Rectifier is designed to meet the general requirements of commercial applications by providing low Trr, 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}	-	400	V
Average Rectifierd Forward Current (Per Device)	$I_{F(AV)}$	50% duty cycle @T_C =100 °C, rectangular wave form	60	A
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I_{FSM}	8.3 ms, half sine pulse	360	A

Electrical Characteristics

Characteristics	Symbol	Conditions	Max.	Unit
Forward Voltage Drop (Per Leg)[1]	V_{F1}	@30A, Pulse, T_J = 25 °C	1.41	V
	V_{F2}	@30A, Pulse, T_J = 125 °C	1.20	V
	V_{F3}	@30A, Pulse, T_J = 150 °C	1.13	V
Reverse Current (Per Leg) [1]	I_{R1}	@V_R = Rated V_R, T_J = 25 °C	5.0	μA
	I_{R2}	@V_R = Rated V_R, T_J = 125 °C	1.0	mA
Reverse Recovery Time	t_{rr1}	I_F=500mA, I_R=1A,and I_{rm}=250mA	45	ns

Footnote [1]: Pulse Width < 300μs, Duty Cycle <2%

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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	0.95	°C/W
Approximate Weight	wt	-	6.28	g
Case Style		TO-247AD	-	-

Figure 1: Typical Forward Characteristics

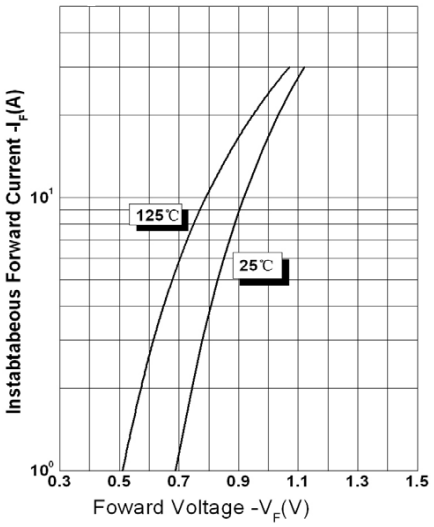


Figure 2: Typical Reverse Characteristics

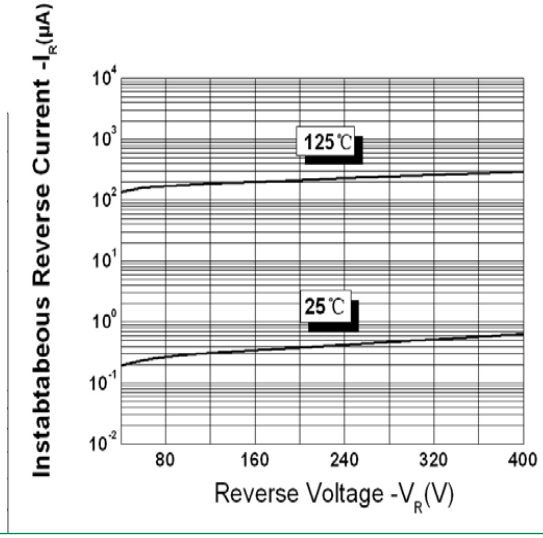
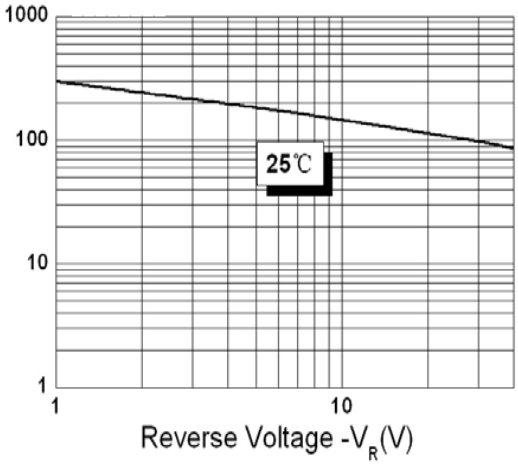
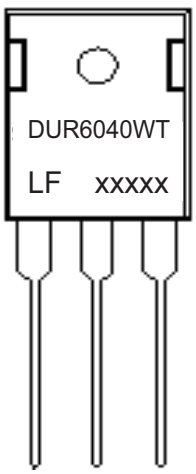


Figure 3: Typical Junction Capacitance



Part Numbering and Marking System



Where XXXXX is YYWWL

DUR	= Device Type
60	= Forward Current (60A)
40	= Reverse Voltage (400V)
WT	= Configuration
LF	= Littelfuse
YY	= Year
WW	= Week
L	= Lot Number

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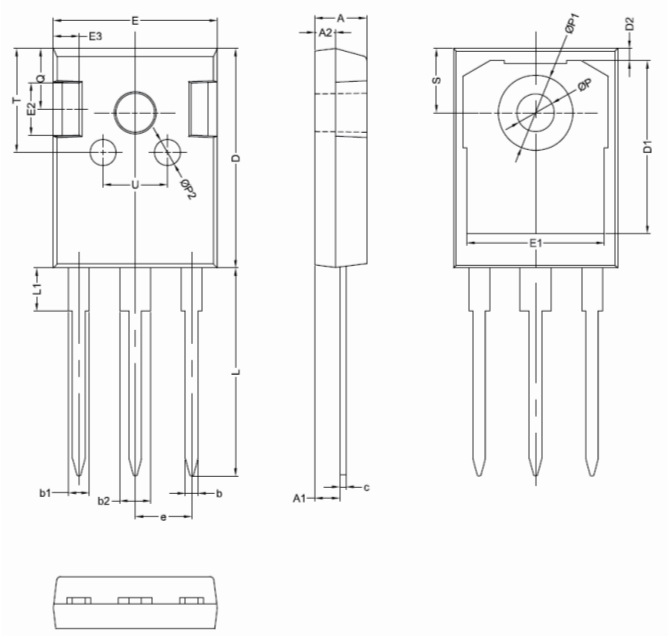
Packing Options

Part Number	Marking	Packing Mode	M.O.Q
DUR6040WT	DUR6040WT	30 pcs/Tube	300

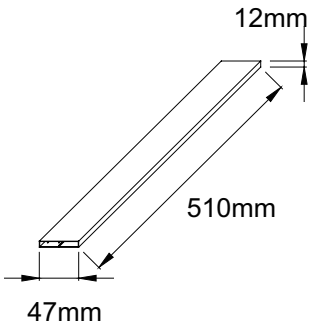
Dimensions-Package TO-247AD



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



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