

Ultrafast Recovery Rectifier

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

DUR6040WT



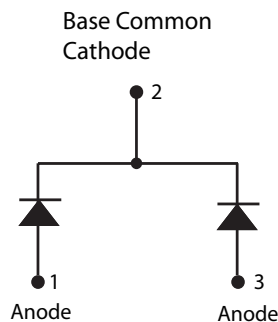
Description

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}	-	400	V
Average Rectifier Forward Current (Per Device)	$I_{F(AV)}$	50% duty cycle @ $T_C = 100^\circ\text{C}$, 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, $T_J = 25^\circ\text{C}$	1.41	V
	V_{F2}	@30A, Pulse, $T_J = 125^\circ\text{C}$	1.20	V
	V_{F3}	@30A, Pulse, $T_J = 150^\circ\text{C}$	1.13	V
Reverse Current (Per Leg) ¹	I_{R1}	@ $V_R = \text{Rated } V_R, T_J = 25^\circ\text{C}$	5.0	μA
	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 μs , 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	0.95	°C/W
Approximate Weight	wt	-	6.28	g
Case Style	-	TO-247AD	-	-

Figure 1: Typical Forward Characteristics

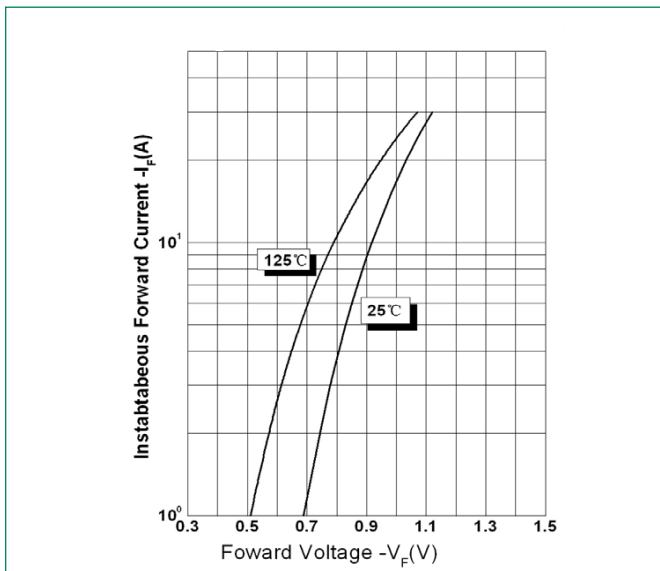


Figure 2: Typical Reverse Characteristics

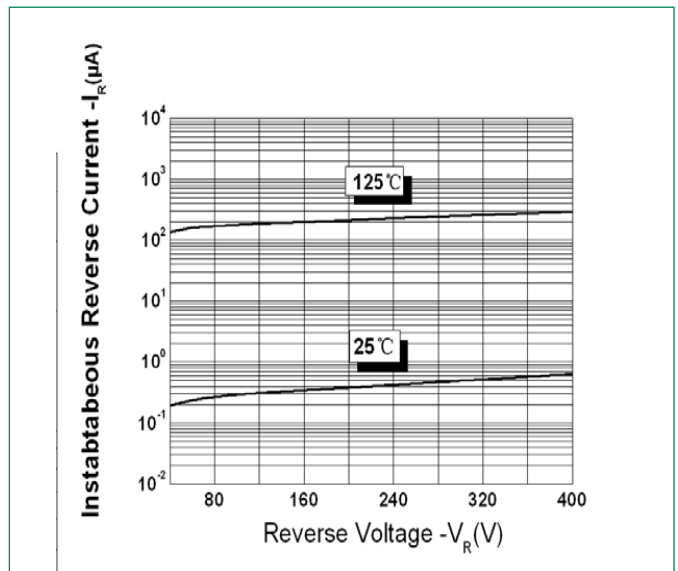
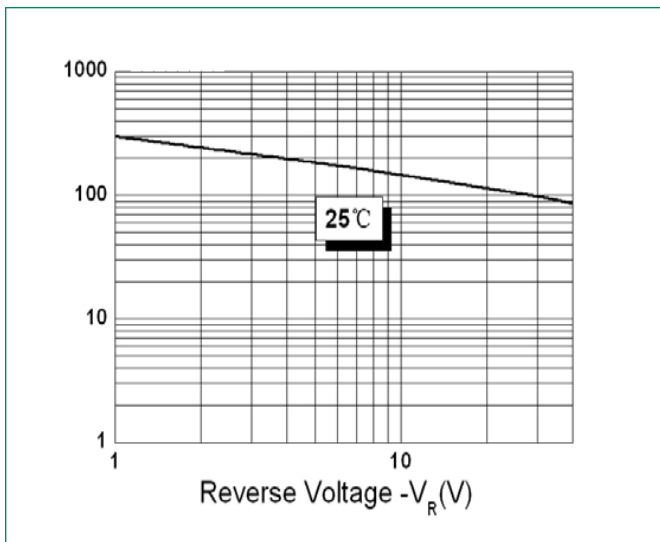
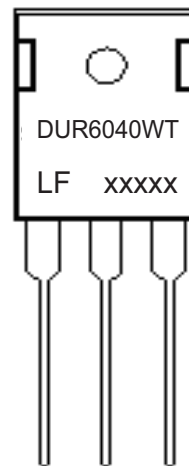


Figure 3: Typical Junction Capacitance



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

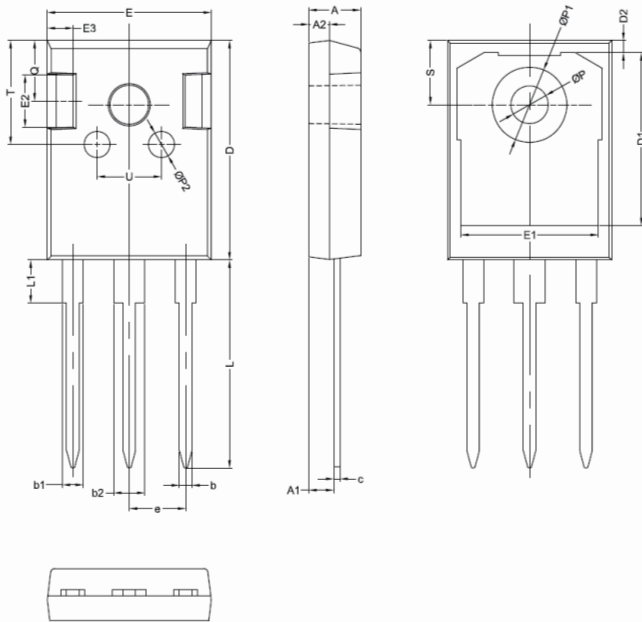
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Packing Options

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

