Ultrafast Recovery Rectifier DUR30120, 30A, 1200V, TO-220AC



RoHS

e3)

DUR30120



Description

Littelfuse DUR series Ultrafast Recovery Rectifier is designed to meet the general requirements of commercial applications by providing low Trr, high-temperature, lowleakage 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
- Single die in true twoleaded TO-220AC
- Pb-free E3 means 2nd level interconnect is Pbfree 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

• Low forward voltage drop

- 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}	-	1200	V
Average Forward Current (Per Device)	I _{F(AV)}	50% duty cycle @T _c =115 °C, rectangular wave form	30	А
Peak One Cycle Non- Repetitive Surge Current (Per Leg)	I _{FSM}	8.3 ms, half sine pulse	80	А

Electrical Characteristics

Characteristics	Symbol	Conditions	Тур.	Max.	Unit
Forward Voltage Drop (Per Leg) ¹	V _{F1}	@30A, Pulse, T _J = 25 °C	2.7	2.75	V
	V _{F2}	@30A, Pulse, T _J = 125 °C	2.5	-	V
	V _{F3}	@30A, Pulse, T _J = 150 °C	2.3	-	V
Reverse Current (Per Leg) ¹	I _{R1}	$@V_{_{ m R}} = Rated V_{_{ m R}}$, $T_{_{ m J}} = 25 \ ^{\circ}C$	0.77	250	μA
	I _{R2}	$@V_{_{ m R}} = Rated V_{_{ m R}}$, $T_{_{ m J}} = 125 \ ^{\circ}C$	550	4000	μA
	I _{R3}	$@V_{R} = Rated V_{R}, T_{J} = 150 \ ^{\circ}C$	2174	-	μA
Reverse Recovery Time	t _{rr1}	$I_{\rm F}$ =500mA, $I_{\rm R}$ =1A,and $I_{\rm rm}$ =250mA	-	100	ns

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



Thermal-Mechanical Specifications

Characteristics	Symbol	Conditions	Specification	Unit
Junction Temperature	T,	-	-55 to +150	°C
Storage Temperature	T _{stq}	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	R _{euc}	DC operation	0.9	°C/W
Approximate Weight	wt	-	1.6	g
Case Style	-	TO-220AC	-	-

Figure 1: Typical Forward Characteristics



Figure 3: Typical Junction Capacitance



Figure 2: Typical Reverse Characteristics



Part Numbering and Marking System



*xxxxx is YYWWL

30

120

LF

YY

L.

WW

- DUR = Device Type = Forward Current (30A) = Reverse Voltage (1200V)
 - = Littelfuse
 - = Year
 - = Week
 - = Lot Number

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Packing Options				
Part Number	Marking	Packing Mode	M.O.Q	
DUR30120	DUR30120	50pcs / Tube	1000	

Dimensions-Package TO-220AC





Symbol	Millimeters			
	Min	Max		
А	3.56	4.83		
A1	0.51	1.40		
A2	2.03	2.92		
b	0.38	1.02		
b1	1.14	1.78		
С	0.31*	0.61		
D	14.22	16.51		
D1	8.38	9.02		
E	9.65	10.67		
H1	5.84	6.86		
L	12.70	14.73		
L1	-	6.35		
øP	3.53	4.09		
Q	2.54	3.43		

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

Tube Specification TO-220AC



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