Ultrafast Recovery Rectifier DURB2020CT, 2x 10A, 200V, TO-263, Common Cathode



RoHS

(e3)

DURB2020CT



Circuit Diagram



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
- mount TO-263 (D²PAK) package • Pb-free E3 means 2nd
- High surge current capability
- Low forward voltage drop
- Common cathode configuration in surface

level interconnect is Pb-free and the terminal finish material is tin(Sn) (IPC/JEDEC J-STD-609A.01)

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}	-	200	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _c =100 °C, rectangular wave form	10 (Per Leg)	- A
			20 (Total Device)	
Peak One Cycle Non- Repetitive Surge Current (per leg)	I _{FSM}	8.3 ms, half sine pulse	125	A

Electrical Characteristic

Characteristics	Symbol	Conditions	Max.	Unit
Forward Voltage Drop (Per Leg) ¹	V _F	@I _F = 10A, Pulse, T _J = 25 °C	1.15	V
Reverse Current	I _{R1}	$@V_{_{ m R}} = \text{Rated } V_{_{ m R}}$, $T_{_{ m J}} = 25 ^{\circ}\text{C}$	15	μΑ
neverse current	I _{R2}	$@V_{_{ m R}} = Rated V_{_{ m R}}$, $T_{_{ m J}} = 125 \ ^{\circ}C$	250	μΑ
Junction Capacitance	C _T	Bias=5V, 10KHZ	60	pF
Reverse Recovery Time	t _{m1}	I _F =500mA, I _R =1A,and I _m =250mA	35	ns

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

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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 _{ejc}	DC operation	3.5	°C/W
Typical Thermal Resistance Junction to Ambient	R _{eja}	DC operation	50	°C/W
Approximate Weight	wt	-	1.41	g
Case Style	-	D ² PAK	-	-

Figure 1: Typical Forward Characteristics



Figure 3: Typical Junction Capacitance



Figure 2: Typical Reverse Characteristics



DUR

В

20

20

CT LF

ΥY

L

WW

Part Numbering and Marking System



- = Device Type
 - = Package type
- = Forward Current (20A) = Reverse Voltage (200V)
 - = Configuration
- = Littelfuse
- = Year
- = Week
- = Lot Number



Packing Options					
Part Number	Marking	Packing Mode	M.O.Q		
DURB2020CT	DURB2020CT	800pcs / reel	800		

Dimensions-Package TO-263 (D²PAK)





	Millimeters		
	Min	Max	
Α	4.06	4.83	
A1	0.00	0.25	
b	0.51	0.99	
b1	1.14	1.78	
С	0.31*	0.74	
c1	1.14	1.65	
D	8.38	9.65	
D1	6.40*	-	
E	9.65	10.67	
E1	6.22	-	
E2	9.65	10.67	
е	2.54 BSC		
Н	14.60*	15.88	
L	1.78	2.79	
L1	-	1.68	
L2	-	1.78	
L3	0.254 BSC		

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

Carrier Tape & Reel Specification TO-263 (D²PAK)



	Millimeters		
	Min	Max	
Α	10.70	10.90	
В	16.03	16.23	
С	5.11	5.31	
d	ø1.45	ø1.65	
E	1.65	1.85	
F	11.40	11.60	
P0	3.90	4.10	
р	15.90	16.10	
P1	1.90	2.10	
W	23.90	24.30	

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