Ultrafast Recovery Rectifier

DURF1060, 10A, 600V, ITO-220AC

Littelfuse
Expertise Applied | Answers Delivered

DURF1060

RoHS

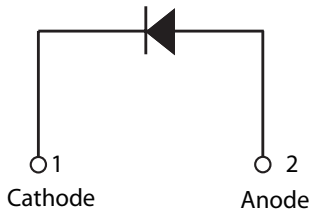
Description

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
- Single die in two-leaded, electrically isolated ITO-220AC 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}	-	600	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =105 °C, rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I_{FSM}	8.3 ms, half sine pulse	100	A

Electrical Characteristics

Characteristics	Symbol	Conditions	Max.	Unit
Forward Voltage Drop[1]	V_{F1}	@10A, Pulse, T_J = 25 °C	2.2	V
	V_{F2}	@10A, Pulse, T_J = 100 °C	2.0	V
Reverse Current[1]	I_{R1}	@V_R = Rated V_R, T_J = 25 °C	10	µA
	I_{R2}	@V_R = Rated V_R, T_J = 125 °C	500	µA
Reverse Recovery Time	t_{rr1}	I_F=500mA, I_R=1A,and I_{rm}=250mA	32	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	6.0	°C/W
Approximate Weight	wt	-	1.65	g
Case Style	-	ITO-220AC	-	-

Figure 1: Typical Forward Characteristics

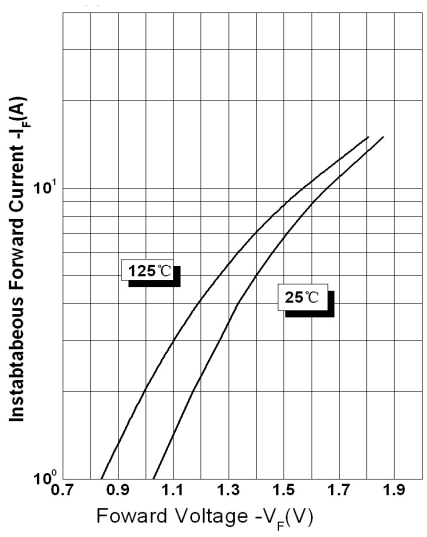


Figure 2: Typical Reverse Characteristics

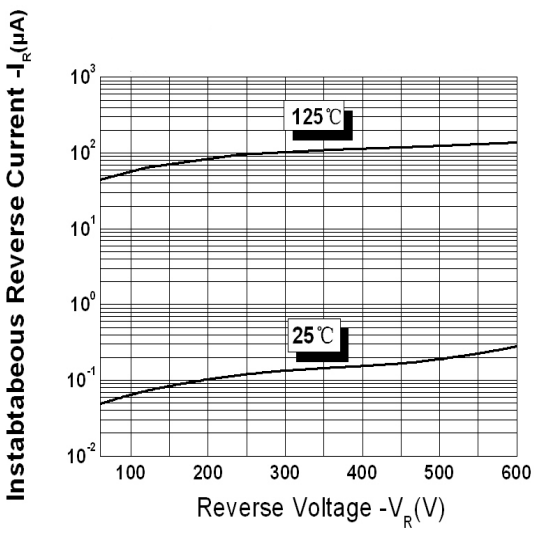
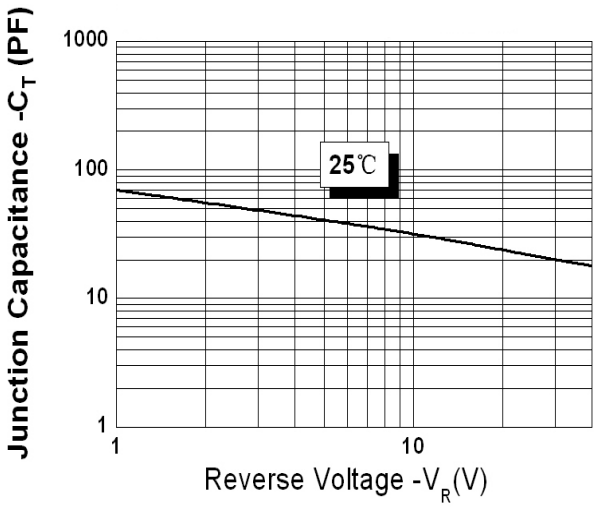
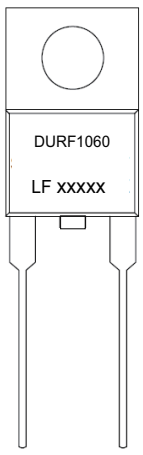


Figure 3: Typical Junction Capacitance



Part Numbering and Marking System



***xxxxx is YYWWL**

DUR	= Device Type
F	= Package type
10	= Forward Current (10A)
60	= Reverse Voltage (600V)
LF	= Littelfuse
YY	= Year
WW	= Week
L	= Lot Number

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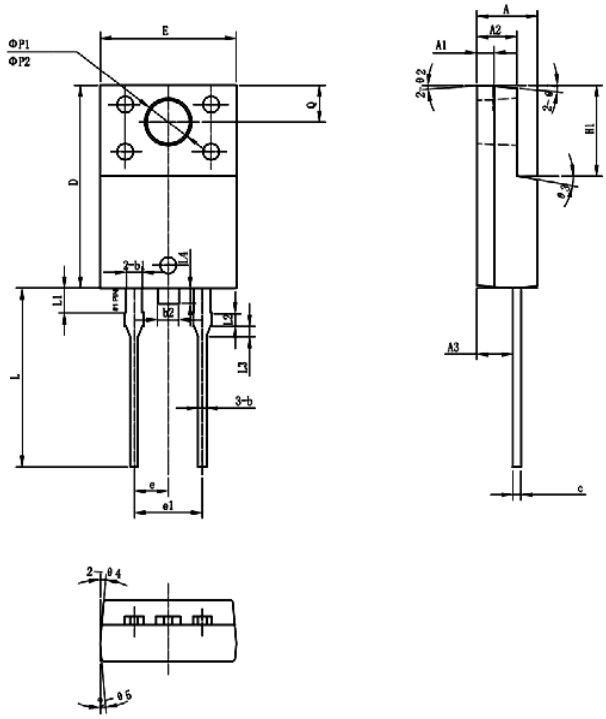
Packing Options

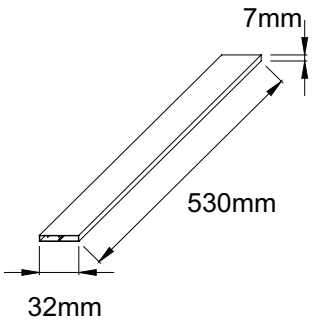
Part Number	Marking	Packing Mode	M.O.Q
DURF1060	DURF1060	50pcs / Tube	1000

Dimensions-Package ITO-220AC



Symbol	Millimeters		
	Min	Typ	Max
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	-	5.10	-
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
øP1	3.30	3.50	3.70
øP2	2.99	3.19	3.39
Q	2.50	2.70	2.90
θ1	-	5°	-
θ2	-	4°	-
θ3	-	10°	-
θ4	-	5°	-
θ5	-	5°	-

Tube Specification ITO-220AC



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Mouser Electronics

Authorized Distributor

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Littelfuse:
DURF1060