

### DURD560A



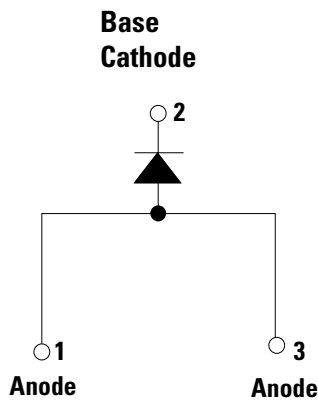
#### Description

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
- Single die in surface
- mount TO-252 (DPAK) 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 (per device)	$I_{O(AV)}$	50% duty cycle @ $T_c=100^\circ\text{C}$ , rectangular wave form	5	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half sine pulse	60	A

#### Electrical Characteristics

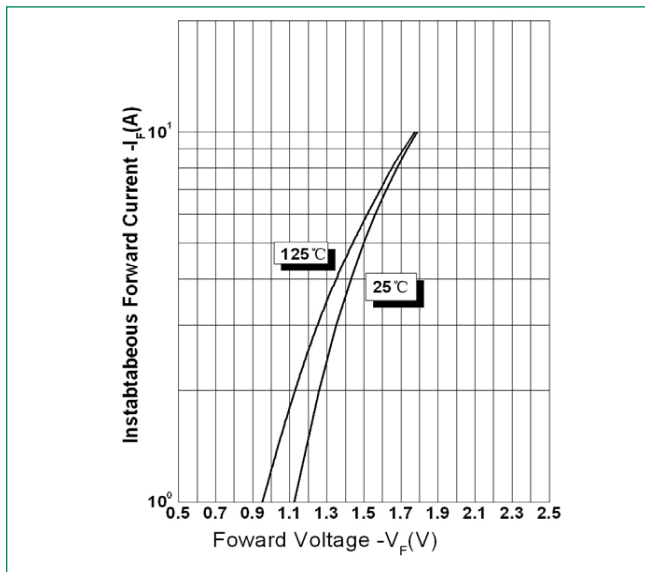
Characteristics	Symbol	Conditions	Typ.	Max.	Unit
Forward Voltage Drop ( Per Leg ) <sup>1</sup>	$V_{F1}$	@5A, Pulse, $T_j = 25^\circ\text{C}$	1.50	1.70	V
	$V_{F2}$	@5A, Pulse, $T_j = 125^\circ\text{C}$	1.41	1.50	V
Reverse Current ( Per Leg ) <sup>1</sup>	$I_{R1}$	@ $V_R = \text{Rated } V_R, T_j = 25^\circ\text{C}$	0.10	5	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{Rated } V_R, T_j = 125^\circ\text{C}$	52	500	$\mu\text{A}$
Reverse Recovery Time ( Per Leg )	$t_{rr1}$	$I_F=500\text{mA}, I_R=1\text{A}, \text{and } I_{rm}=250\text{mA}$	-	35	ns

Footnote 1: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

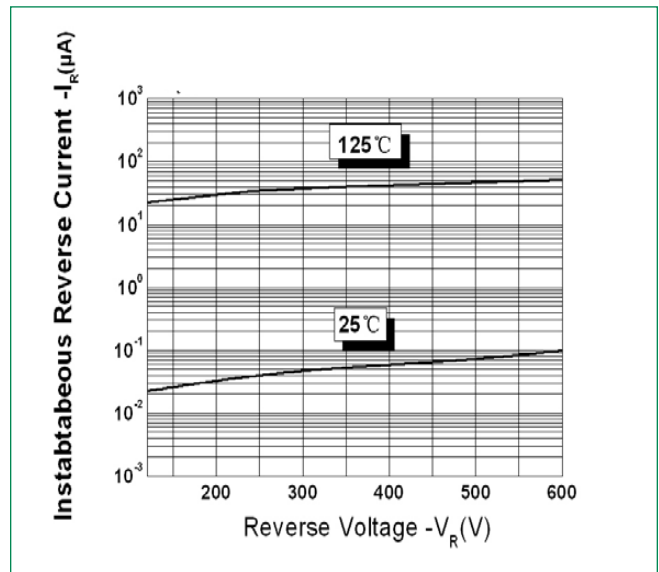
**Thermal-Mechanical Specifications**

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	$R_{\theta JC}$	-	4.5	°C/W
Approximate Weight	wt	-	0.39	g
Case Style	-	DPAK (TO-252)	-	-

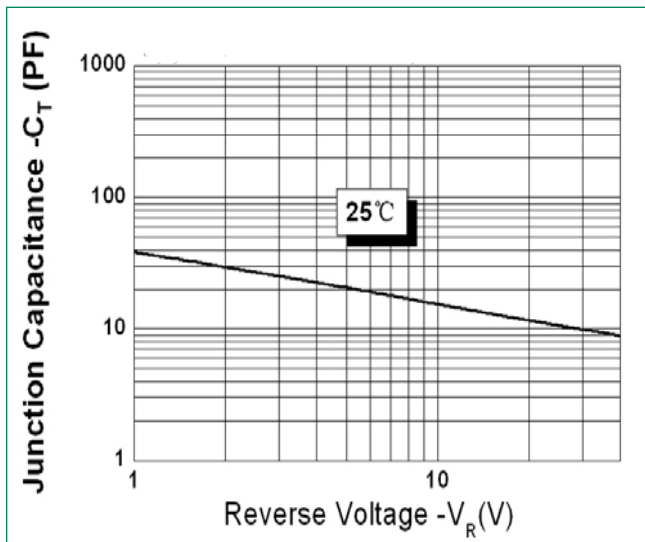
**Figure 1: Typical Forward Characteristics**



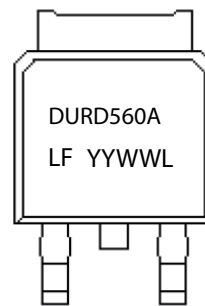
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**



**Part Numbering and Marking System**



- DUR = Device Type
- D = Package type
- 5 = Forward Current (5A)
- 60 = Reverse Voltage (600V)
- A = A
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number



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