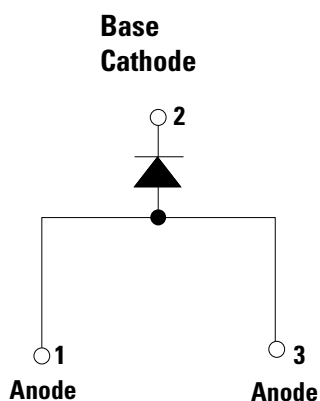


# DURD560A



### Circuit Diagram



### 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)

### 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>	$I_{R1}$	@ $V_R$ = Rated $V_R$ , $T_j = 25^\circ\text{C}$	0.10	5	$\mu\text{A}$
	$I_{R2}$	@ $V_R$ = Rated $V_R$ , $T_j = 125^\circ\text{C}$	52	500	$\mu\text{A}$
Reverse Recovery Time ( Per Leg )	$t_{rr1}$	$I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , 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

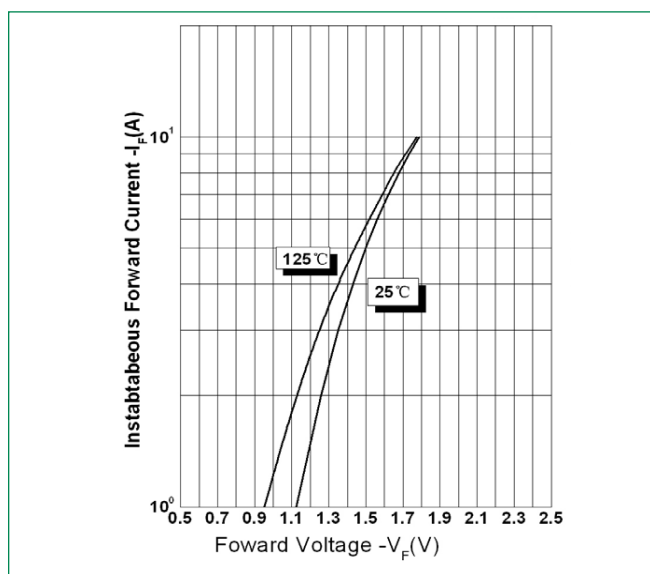


Figure 2: Typical Reverse Characteristics

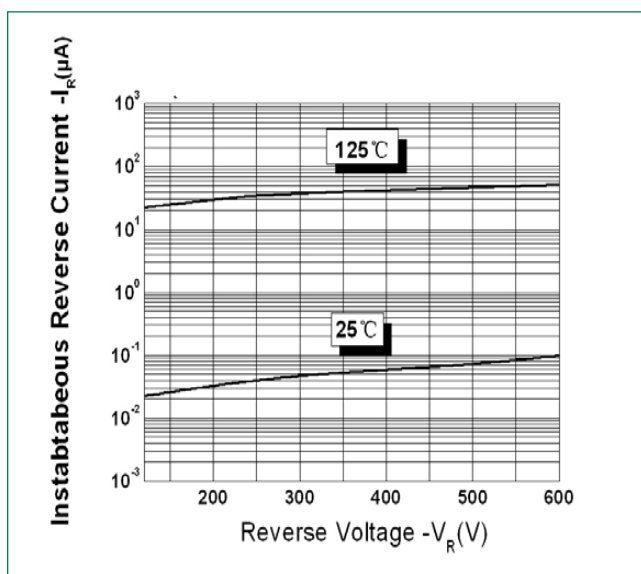
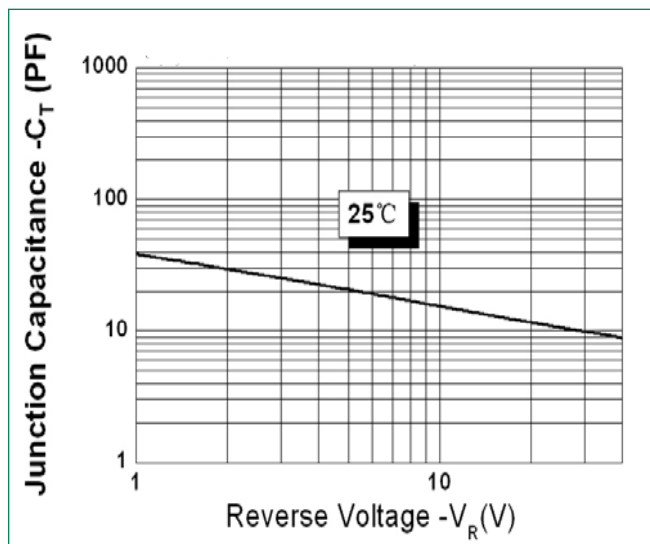
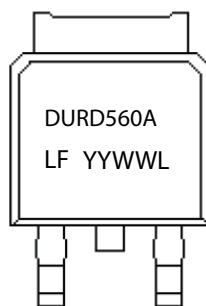


Figure 3: Typical Junction Capacitance



Part Numbering and Marking System

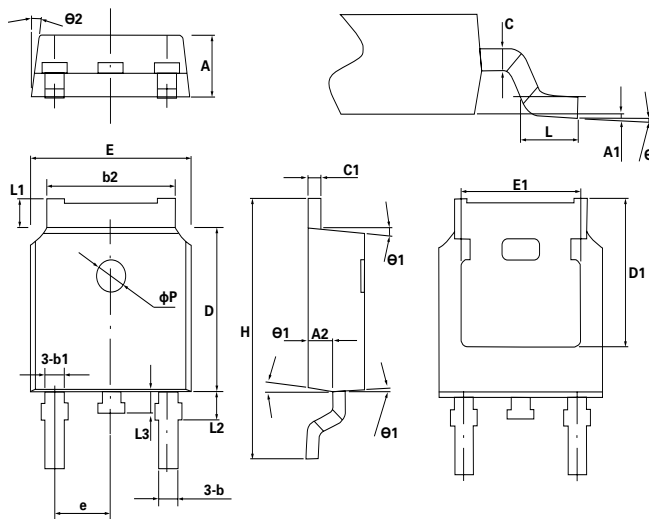


DUR	= Device Type
D	= Package type
5	= Forward Current (5A)
60	= Reverse Voltage (600V)
A	= A
LF	= Littelfuse
YY	= Year
WW	= Week
L	= Lot Number

## Packing Options

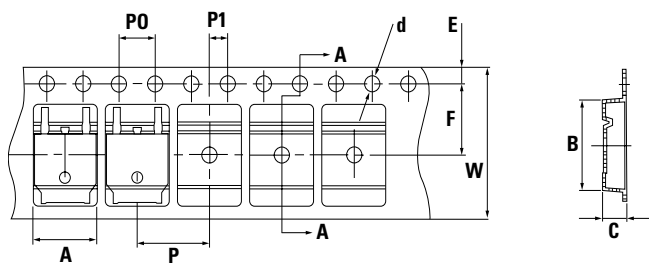
Part Number	Marking	Packing Mode	M.O.Q
DURD560A	DURD560A	2500pcs / reel	2500

### Dimensions-DPAK(TO-252)



Symbol	Min.	Typ.	Max..
<b>A</b>	2.2	2.3	2.38
<b>A1</b>	0	-	0.1
<b>A2</b>	0.9	1.01	1.1
<b>b</b>	0.71	0.76	0.86
<b>b1</b>		0.76	
<b>b2</b>	5.13	5.33	5.46
<b>c</b>	0.47	0.5	0.6
<b>c1</b>	0.47	0.5	0.6
<b>D</b>	6	6.1	6.2
<b>D1</b>	-	5.3	-
<b>E</b>	6.5	6.6	6.7
<b>E1</b>	-	4.8	-
<b>e</b>	2.286BSC		
<b>H</b>	9.7	10.1	10.4
<b>L</b>	1.4	1.5	1.7
<b>L1</b>	0.9	-	1.25
<b>L2</b>		1.05	
<b>L3</b>		0.8	
<b>øP</b>		1.2	
<b>Ø</b>	0°	-	8°
<b>Ø1</b>	5°	7°	9°
<b>Ø2</b>	5°	7°	9°

## Carrier Tape & Reel Specification



Symbol	Millimeters	
	Min	Max
<b>A</b>	6.80	7.00
<b>B</b>	10.40	10.60
<b>C</b>	2.60	2.80
<b>d</b>	ø1.45	ø1.65
<b>E</b>	1.65	1.85
<b>F</b>	7.40	7.60
<b>P0</b>	3.90	4.10
<b>P</b>	7.90	8.10
<b>P1</b>	1.90	2.10
<b>W</b>	15.50	16.50