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UF5400 thru UF5408 Soft Recovery Ultrafast Plastic Rectifier DO201AD Type Package

Description:

The UF5400 thru UF5408 are soft recovery, ultrafast plastic rectifiers for use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication applications.

Features:

- Ultrafast reverse Recovery Time
- Low Forward Voltage Drop
- Low Switching Losses, High Efficiency
- High Forward Surge Capability

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$, unless otherwise specified)

Max. Repetitive Reverse Voltage, V_{RRM}	
UF5400	50V
UF5401	100V
UF5402	200V
UF5404	400V
UF5406	600V
UF5407	800V
UF5408	1000V
Max. RMS Voltage, V_{RMS}	
UF5400	35V
UF5401	70V
UF5402	140V
UF5404	280V
UF5406	420V
UF5407	560V
UF5408	700V
Max. DC Blocking Voltage, V_{DC}	
UF5400	50V
UF5401	100V
UF5402	200V
UF5404	400V
UF5406	600V
UF5407	800V
UF5408	1000V
Average Rectified Forward Current ($T_A = +55^\circ\text{C}$, .375" (9.5mm) Lead Length), $I_{F(AV)}$	
3A	
Peak Forward Surge Current, I_{FSM}	
8.3ms single half sine wave superimposed on rated load	
150A	
Storage Temperature Range, T_{stg}	
-55° to +150°C	
Typical Thermal Resistance, Junction-to-Ambient (Note 1), R_{thJA}	
20°C/W	
Typical Thermal Resistance, Junction-to-Lead (Note 1), R_{thJL}	
8.5°C/W	

Note 1. Thermal resistance from junction to lead and junction to ambient with .375" (9.5mm) lead length, both leads attached to heatsink.

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Instantaneous Forward Voltage UF5400, UF5401	V_F	$I_F = 3\text{A}$, Note 2	-	-	1.0	V	
UF5402, UF5404			-	-	1.0	V	
UF5406, UF5407, UF5408			-	-	1.7	V	
DC Reverse Leakage Current All Devices	I_R	At Rated DC Blocking Voltage	$T_A = +25^\circ\text{C}$	-	-	10	μA
UF5400, UF5401				-	-	75	μA
UF5402, UF5404			-	-	75	μA	
UF5406, UF5407, UF5408			-	-	200	μA	
Reverse Recovery Time UF5400, UF5401	t_{rr}	$I_F = 500\text{mA}$, $I_R = 1\text{A}$, $I_{rr} = 250\text{mA}$, $T_J = +25^\circ\text{C}$	-	-	50	ns	
UF5402, UF5404			-	-	50	ns	
UF5406, UF5407, UF5408			-	-	75	ns	
Junction Capacitance UF5400, UF5401	C_J	$V_R = 4\text{V}$, $f = 1\text{MHz}$	-	45	-	pF	
UF5402, UF5404			-	45	-	pF	
UF5406, UF5407, UF5408			-	36	-	pF	

Note 2. Pulse test: $300\mu\text{s}$ pulse width, 1% duty cycle.

