

1N5807 - 1N5811

ULTRAFAST RECOVERY RECTIFIER DIODES

PRV : 50 - 150 Volts

I_o : 6.0 Amperes

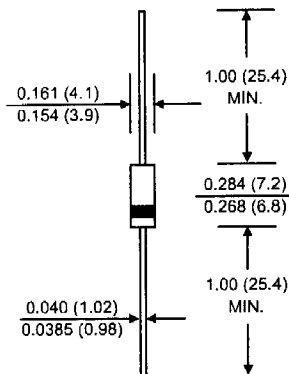
FEATURES :

- * High current capability
- * High surge current capability
- * High reliability
- * Low reverse current
- * Low forward voltage drop
- * Ultrafast recovery time
- * Pb / RoHS Free

MECHANICAL DATA :

- * Case : D2A Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Axial lead solderable

- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.645 gram



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.

RATING	SYMBOL	1N5807	1N5809	1N5811	UNIT
Maximum Working Peak Reverse Voltage	V _{RWM}	50	100	150	V
Minimum Breakdown Voltage @ 100µA	V _{BR(Min)}	60	110	160	V
Maximum Average Forward Current	I _{F(AV)}		6.0 ⁽¹⁾ 3.0 ⁽²⁾		A
Maximum Forward Surge Current ⁽³⁾	I _{FSM}		125		A
Maximum Peak Forward Voltage at I _F = 4.0 A.	V _F		0.875		V
Maximum Reverse Current at V _{RWM}	I _R		5.0		µA
		Ta = 25 °C			
		Ta = 100 °C	150		
Maximum Reverse Recovery Time ⁽⁴⁾	T _{rr}		30		ns
Thermal Resistance, Junction to Lead	R _{θJL}		22		°C/W
Junction Temperature Range	T _J		- 65 to + 175		°C
Storage Temperature Range	T _{STG}		- 65 to + 175		°C

Notes :

- (1) Rated at T_L=75 °C at 3/8 inc lead length. Derate at 60 mA/°C for T_L above 75 °C.
- (2) Derate linearly at 25 mA/°C above Ta = 55 °C. This rating is typical for PC boards where thermal resistance from mounting point to ambient is sufficiently controlled where T_{J(max)} dose not exceed 175 °C.
- (3) Ta = 25 °C @ I_{F(AV)} = 3A and V_{RWM} for ten 8.3 ms surges at 1 minute intervals.
- (4) I_F = 1A, I_{RM} = 1A, I_{R(REC)} = 0.1 A and di/dt = 10 A/µs min.



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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5802	1N5804	1N5806	Unit
Average forward current max. (pcb mounted; T _A = 55°C) for sine wave for square wave (d = 0.5)	I _{F(AV)}	←—————	1.3	—————→	A
	I _{F(AV)}	←—————	1.4	—————→	A
Average forward current max. (T _L = 55°C; L = 3/8") for sine wave for square wave	I _{F(AV)}	←—————	3.1	—————→	A
	I _{F(AV)}	←—————	3.3	—————→	A
I ² t for fusing (t = 8.3ms) max.	I ² t	←—————	10.0	—————→	A ² S
Forward voltage drop max. @ I _F = 1.0A, T _j = 25°C	V _F	←—————	0.875	—————→	V
Reverse current max. @ V _{RWM} , T _j = 25°C @ V _{RWM} , T _j = 100°C	I _R	←—————	1.0	—————→	μA
	I _R	←—————	50	—————→	μA
Reverse recovery time max. 1.0A I _F to 1.0A I _R . Recovers to 0.1A I _{RR} .	t _{rr}	←—————	25	—————→	nS
Junction capacitance typ. @ V _R = 5V, f = 1MHz	C _j	←—————	25	—————→	pF

THERMAL CHARACTERISTICS

	Symbol	1N5802	1N5804	1N5806	Unit
Thermal resistance - junction to lead Lead length = 0.75"	R _{θJL}	←—————	59	—————→	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R _{θJA}	←—————	100	—————→	°C/W