

Optima Diode - Low forward voltage drop, Fast Recovery Diode

VRRM	1200 V	l _F	8 A
V _{F(TYP)}	2.1 V	T _{RR(TYP)}	70 ns

Features

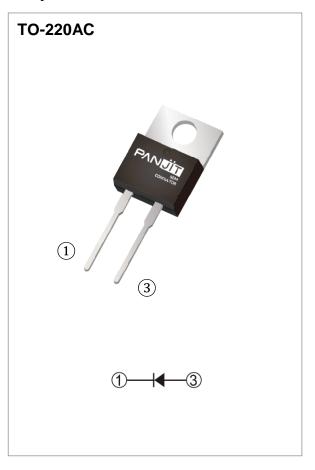
- Fast recovery
- Low forward voltage
- Optimized trade-off performance between V_F & T_{RR}
- Soft recovery characteristic for better EMI
- High junction temperature 150 °C
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: TO-220AC molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.067 ounces, 1.89 grams

Application

• PFC, UPS, PV Inverter, EV Charging Station, Welder



Maximum Ratings and Thermal Characteristics (Tc = 25 °C unless otherwise specified)

PARAMETER	SYMBOL	LIMIT	UNITS
Repetitive Peak Reverse Voltage	V _{RRM}	1200	V
DC Blocking Voltage	V _{DC}	1200	V
Diode Forward Current @ Tc=120°C	I _{F(AV)}	8	Α
Repetitive Peak Surge Current tp = 8.3 ms, sine-wave, D=0.5	IFRM	16	А
Peak Forward Surge Current tp = 8.3 ms, single half sine-wave	I _{FSM}	40	А
Maximum Power Dissipation	P _{total}	60	W
Operating Junction Temperature Range	TJ	-55~150	°C
Storage Temperature Range	T _{STG}	-55~150	°C



Electrical Characteristics (T_C = 25 °C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS	
En and alternation	Itage drop V _F	I _F = 8 A, T _J = 25 °C	-	2.1	2.6	V	
Forward voltage drop		I _F = 8 A, T _J = 125 °C	-	1.8	ı		
Devene leekene evreet	I _R	V _R = 1200 V, T _J = 25 °C	-	-	100	μA	
Reverse leakage current		V _R = 1200 V, T _J = 125 °C	-	-	500	μA	
		I _F =0.5A, I _R =1A, I _{RR} =0.25A T _J = 25 °C	-	-	45	ns	
Reverse recovery time	T_RR	$I_F = 1 \text{ A}, V_R = 30 \text{ V},$ $di/dt = 300 \text{ A/}\mu\text{s},$ $T_J = 25 ^{\circ}\text{C}$	-	-	35	ns	
Reverse recovery time	T_RR	1 0 4 1/ 400 1/	-	70	105	ns	
Peak recovery current	I _{RRM}	$I_F = 8 \text{ A}, V_R = 400 \text{ V},$ $di/dt = 300 \text{ A/}\mu\text{s},$	-	5.2	ı	Α	
Reverse recovery charge	Q _{RR}		-	190	ı	nC	
Softness factor = tb / ta	S	T _J = 25 °C	-	1.85	-		
Reverse recovery time	T_RR	T _{RR}	-	105	-	ns	
Peak recovery current	I_{RRM} $I_{F} = 8 \text{ A, } V_{R} = 400 \text{ V,}$	-	8	-	Α		
Reverse recovery charge	Q _{RR}	di/dt = 300 A/μs,	-	460	-	nC	
Softness factor = tb / ta	S	T _J = 125 °C	-	1.6	-		
Thermal Resistance	Rejc		-	-	2.1	°C/W	



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TYPICAL CHARACTERISTIC CURVES

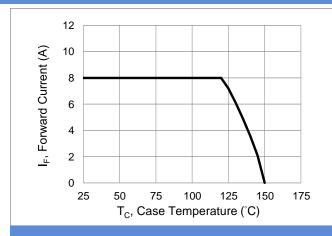
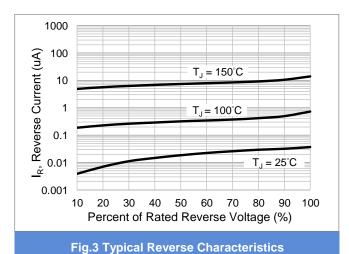


Fig.1 Forward Current Derating Curve



I_F=8A V_R=400V T_J=125°C 50 100 150 200 250 300 di / dt (A/us)

Fig.5 Typical Reverse Recovery Time Versus di/dt

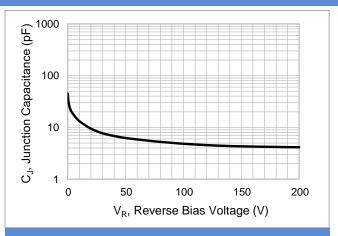


Fig.2 Typical Junction Capacitance

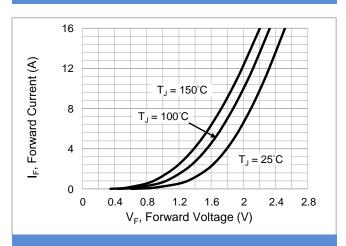


Fig.4 Typical Forward Characteristics

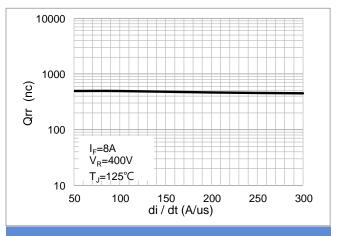


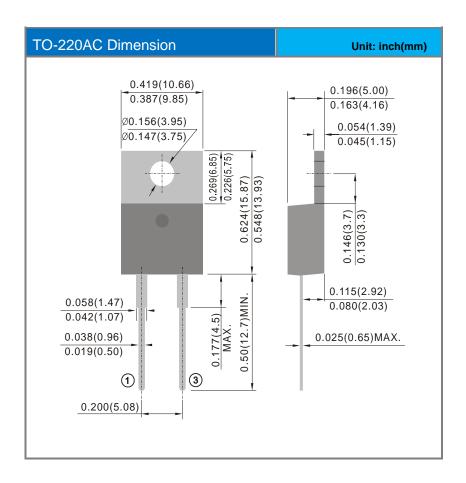
Fig.6 Typical Reverse Recovery Charges Versus di/dt



Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PSDP08120L1	TO-220AC	50pcs / Tube	SDP08120L1

Packaging Information



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