

Optima Diode - Low forward voltage drop, Fast Recovery Diode

VRRM	600 V	l _F	15 A
V _{F(TYP)}	1.3 V	T _{RR(TYP)}	70 ns

Features

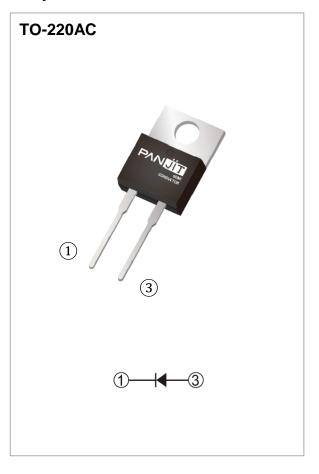
- Fast recovery
- Low forward voltage
- Optimized trade-off performance between V_F & T_{RR}
- Soft recovery characteristic for better EMI
- High junction temperature 150 °C
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

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}	600	V
DC Blocking Voltage	V _{DC}	600	V
Diode Forward Current @ Tc=125°C	I _{F(AV)}	15	Α
Repetitive Peak Surge Current tp = 8.3 ms, sine-wave, D=0.5	IFRM	30	А
Peak Forward Surge Current tp = 8.3 ms, single half sine-wave	I _{FSM}	180	А
Maximum Power Dissipation	P _{total}	89	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
For and other land	V _F	I _F = 15 A, T _J = 25 °C	-	1.3	1.8	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Forward voltage drop		I _F = 15 A, T _J = 125 °C	-	1.2	-	V
D	I _R	V _R = 600 V, T _J = 25 °C	-	-	100	μΑ
Reverse leakage current		V _R = 600 V, T _J = 125 °C	-	-	500	μA
	T _{RR}	I _F =0.5A, I _R =1A, I _{RR} =0.25A T _J = 25 °C	-	-	45	ns
Reverse recovery time		$I_F = 1 \text{ A}, V_R = 30 \text{ V},$ $di/dt = 300 \text{ A/}\mu\text{s},$ $T_J = 25 ^{\circ}\text{C}$	-	-	35	ns
Reverse recovery time	T _{RR}	1. 45 4 1/ 400 1/	-	70	110	ns
Peak recovery current	I _{RRM}	$I_F = 15 \text{ A}, V_R = 400 \text{ V},$ $di/dt = 300 \text{ A}/\mu\text{s},$	-	5.4	-	Α
Reverse recovery charge	Q _{RR}		-	250	-	nC
Softness factor = tb / ta	S	T _J = 25 °C	-	1.65	-	
Reverse recovery time	T _{RR}	T _{RR}	-	100	-	ns
Peak recovery current	RRM	$I_F = 15 \text{ A}, V_R = 400 \text{ V},$	-	10.7	-	Α
Reverse recovery charge	Q _{RR}	di/dt = 300 A/µs,	-	730	-	nC
Softness factor = tb / ta	S	T _J = 125 °C	-	0.75	-	
Thermal Resistance	R _θ JC		-	-	1.4	°C/W



TYPICAL CHARACTERISTIC CURVES

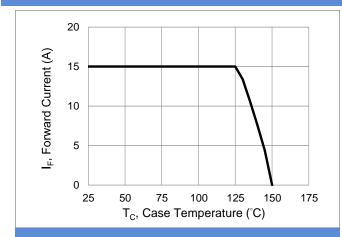


Fig.1 Forward Current Derating Curve

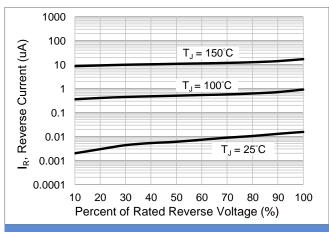


Fig.3 Typical Reverse Characteristics

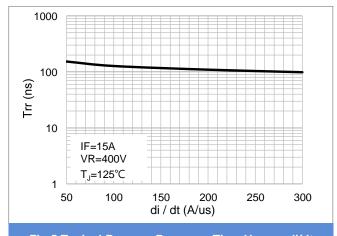


Fig.5 Typical Reverse Recovery Time Versus di/dt

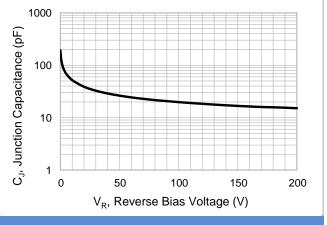


Fig.2 Typical Junction Capacitance

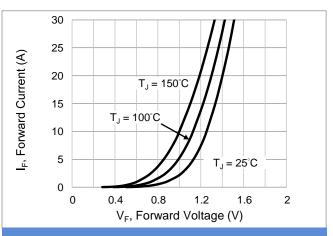


Fig.4 Typical Forward Characteristics

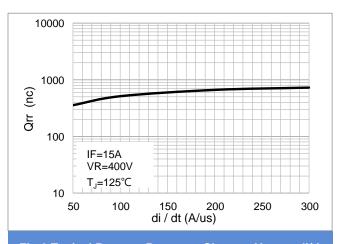


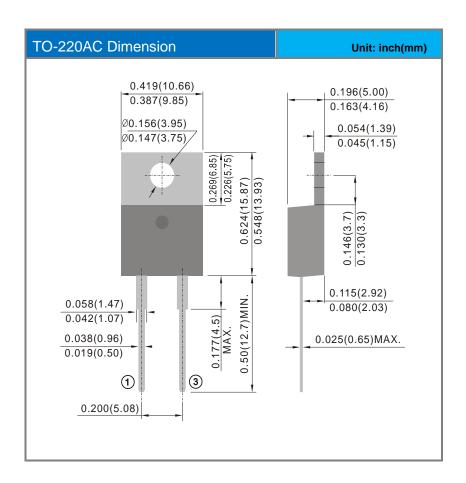
Fig.6 Typical Reverse Recovery Charges Versus di/dt



Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PSDP1560L1	TO-220AC	50pcs / Tube	SDP1560L1

Packaging Information





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