

# SDF30U60DN

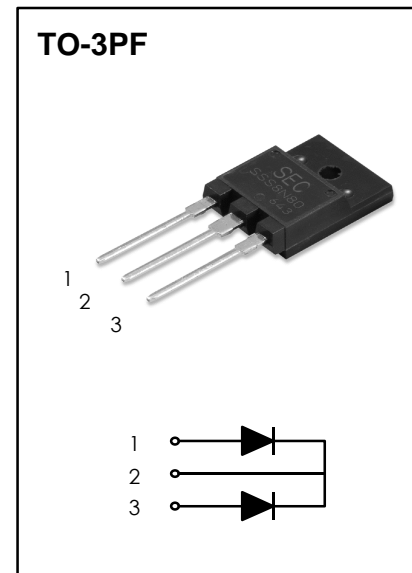
# POWER RECTIFIER

## FEATURES

- \* High Voltage and High Reliability
- \* High Speed Switching ( $T_{rr}=70\text{ns}$ )
- \* Low  $V_F$  in Turn on ( $V_F=1.8\text{V}$  at  $I_F=30\text{A}$ )

## APPLICATIONS

- \* General Purpose
- \* Switching Mode Power Supply
- \* Free Wheeling Diode for Motor Application
- \* Power Switching Circuit



## MAXIMUM RATINGS

Rating	Symbol	Value	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	600	V
Average Rectified Forward Current, $T_C=100\text{ }^\circ\text{C}$	$I_{F(AV)}$	30	A
Non-repetitive Peak Surge Current (Half-wave, Single Phase, 60Hz)	$I_{FSM}$	180	A
Operating Junction and Storage Temperature	$T_J, T_{STG}$	-65 ~ 150	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Thermal Resistance- Junction to Case	$R_{\theta JC}$	0.7	$^\circ\text{C/W}$
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**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Typ	Max	Units
Maximum Instantaneous Forward Voltage (1) ( $I_F = 30A$ , $T_C = 100 .$ ) ( $I_F = 30A$ , $T_C = 25 .$ )	$V_F$	- 1.8	2.1 2.3	V
Maximum Instantaneous Reverse Current (1) (Rated DC Voltage, $T_C = 100 .$ ) (Rated DC Voltage, $T_C = 25 .$ )	$I_R$	30 3	150 15	$\mu A$
Maximum Reverse Recovery Time ( $I_F = 30A$ , $di/dt = 200A/\mu s$ )	$t_{rr}$ $I_{rr}$ $Q_{rr}$	70 6 210	90 8 360	ns A nC

(1) Pulse Test : Pulse Width = 300 $\mu s$ , Duty Cycle X2.0%

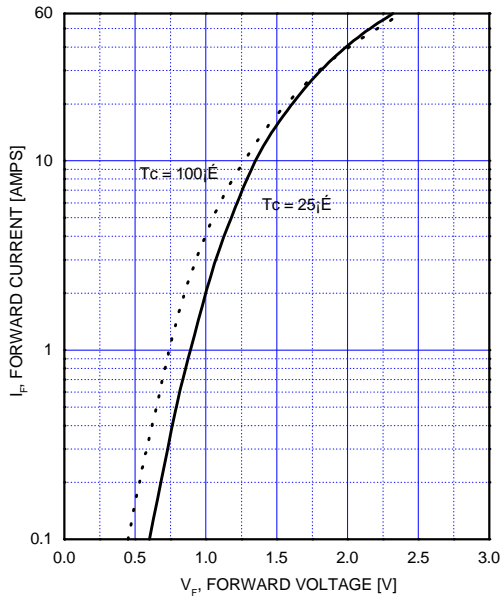


Fig.1 Typical Forward Voltage Drop vs. Forward Current

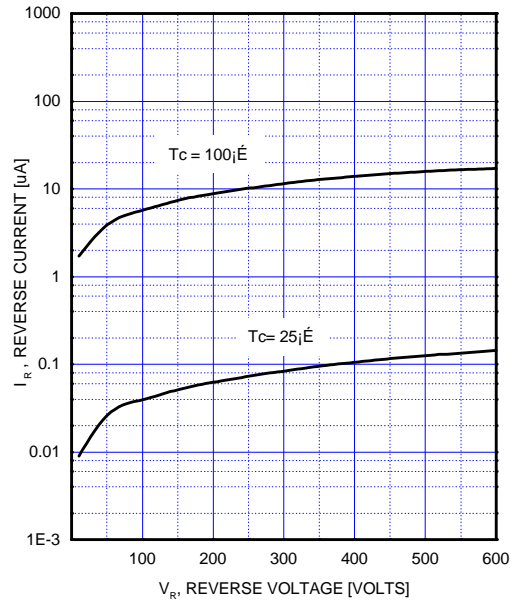


Fig.2 Reverse Voltage vs. Reverse Current

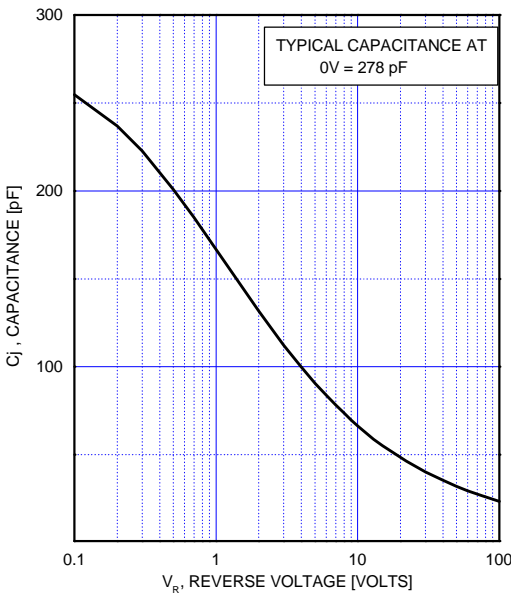


Fig.3 Typical Capacitance

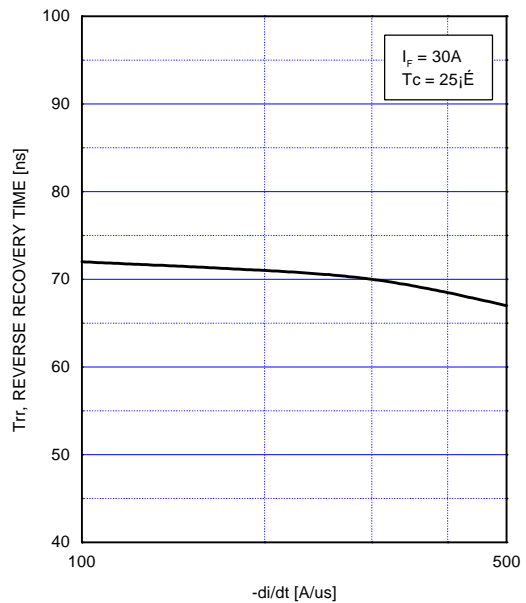


Fig.4 Typical Reverse Recovery Time vs. di/dt

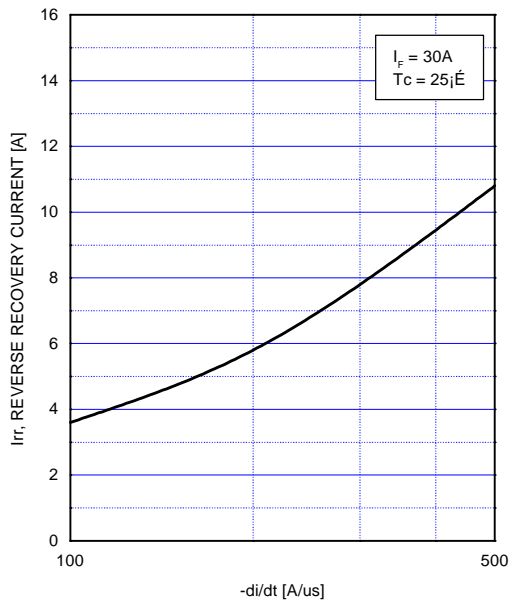


Fig.5 Typical Reverse Recovery Current vs.  $di/dt$

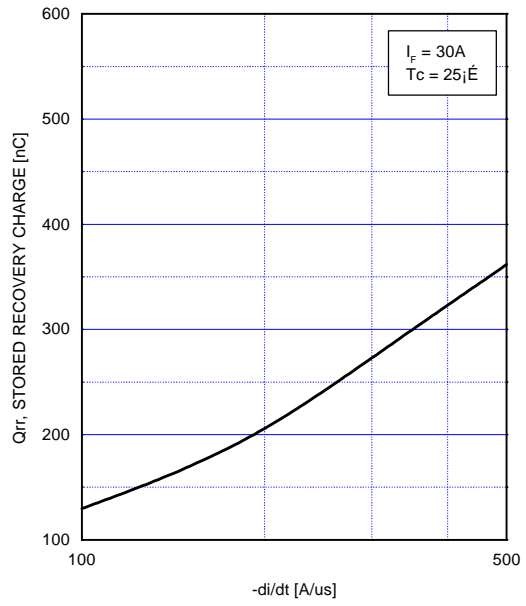


Fig.6 Typical Stored Charge vs.  $di/dt$

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