

SDF30U20DN

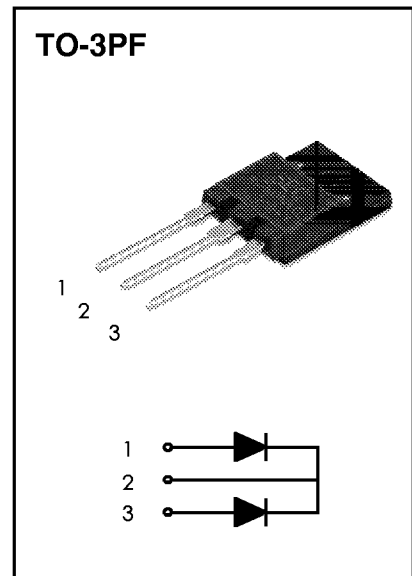
POWER RECTIFIER

FEATURES

- * Ultrafast with Soft Recovery
($T_{rr} < 40\text{ns}$)
- * Low Forward Voltage ($V_F=0.98\text{V}$ at $I_F=30\text{A}$)

APPLICATIONS

- * Power Switching Circuits
- * Output rectifiers
- * Freewheeling Diodes
- * Switching Mode Power Supply



MAXIMUM RATINGS

Rating	Symbol	Value	Units
Peak Repetitive Reverse Voltage	V_{RRM}	200	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}	300	A
Operating Junction and Storage Temperature	T_J, T_{STG}	-65 ~ 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Thermal Resistance - Junction to Case	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
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ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Units
Maximum Instantaneous Forward Voltage (1) ($I_F = 30A$, $T_C = 100\text{ }^\circ\text{C}$) ($I_F = 30A$, $T_C = 25\text{ }^\circ\text{C}$)	V_F	- -	- -	1.0 1.2	V
Maximum Instantaneous Reverse Current (1) (Rated DC Voltage, $T_C = 100\text{ }^\circ\text{C}$) (Rated DC Voltage, $T_C = 25\text{ }^\circ\text{C}$)	I_R	- -	- -	300 30	μA
Maximum Reverse Recovery Time ($I_F = 30A$, $di/dt = -200A/\mu\text{s}$)	t_{rr} I_{rr} Q_{rr}	- - -	- - -	40 4.0 80	ns A nC
Avalanche Energy	W_{AVL}	0.5	-	-	mJ

(1) Pulse Test : Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

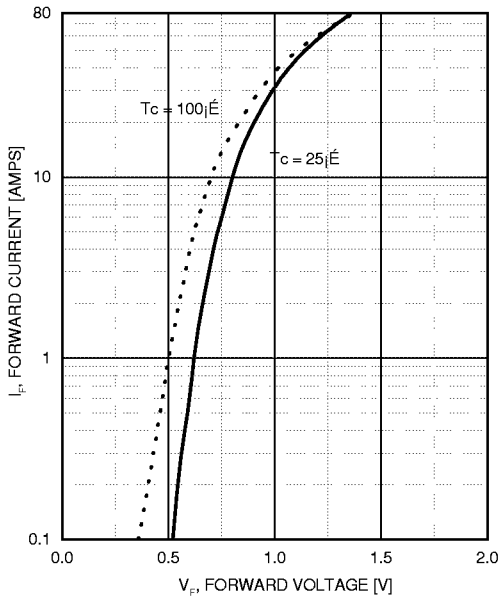


Fig.1 Typical Forward Voltage Drop vs. Forward Current

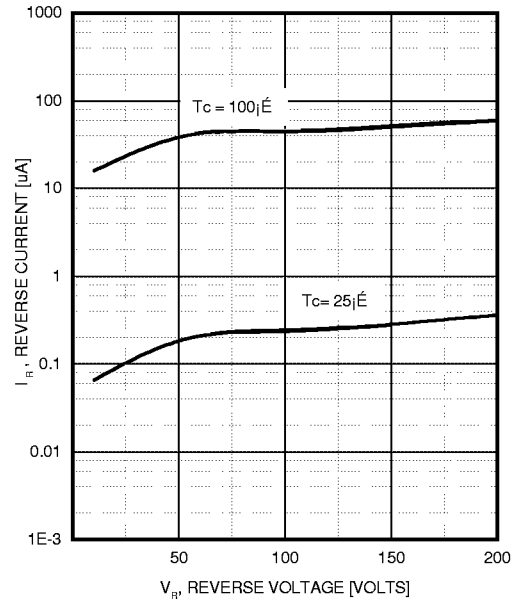


Fig.2 Reverse Voltage vs. Reverse Current

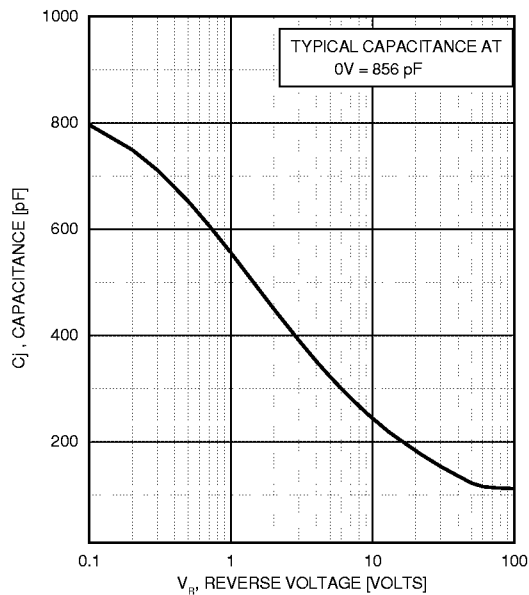


Fig.3 Typical Capacitance

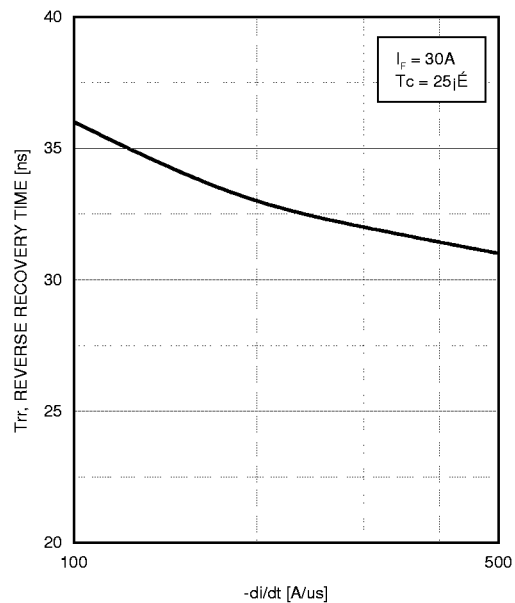


Fig.4 Typical Reverse Recovery Time vs. di/dt

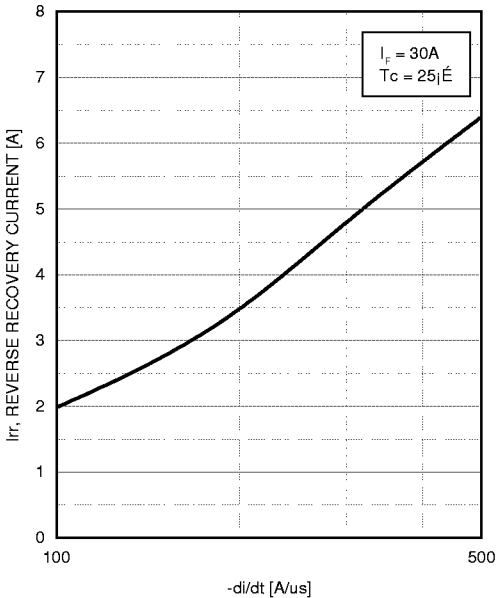


Fig.5 Typical Reverse Recovery Current vs. di/dt

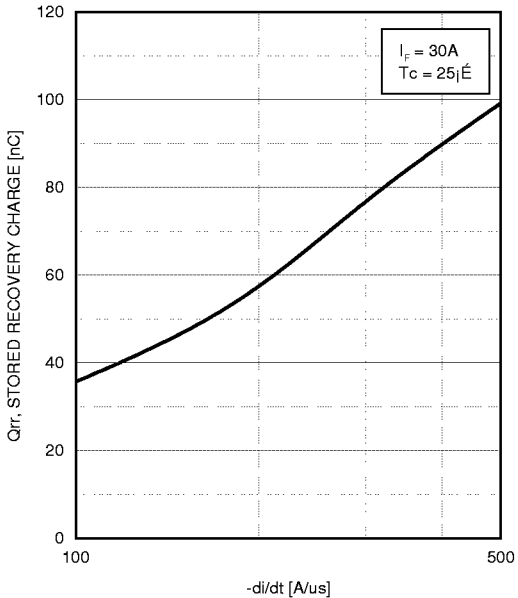


Fig.6 Typical Stored Charge vs. di/dt

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