

## FAST RECOVERY RECTIFIER DIODES

- FAST RECOVERY TIME
- LOW FORWARD RECOVERY TIME
- AVAILABLE UP TO 600V

### APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS
- HIGH FREQUENCY RECTIFIERS



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{FRM}$	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	130	A
$I_{F(AV)}$	Average Forward Current	$T_C = 100^\circ C$	12	A
$I_{FSM}$	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	150	A
$P_{Tot}$	Power Dissipation	$T_C = 100^\circ C$	20	W
$T_{stg}$ $T_J$	Storage and Junction Temperature Range		- 65 to 150	$^\circ C$

Symbol	Parameter	1N					BYX 62-600	Unit
		3889	3890	3891	3892	3893		
$V_{RRM}$	Repetitive Peak Reverse Voltage	50	100	200	300	400	600	V

### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	2.5	$^\circ C/W$

**ELECTRICAL CHARACTERISTICS**

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub>	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RRM</sub>			25	μA
	T <sub>j</sub> = 100°C				3	mA
V <sub>F</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 12A			1.4	V

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t <sub>rr</sub>	T <sub>j</sub> = 25°C V <sub>R</sub> = 30V	I <sub>F</sub> = 1A	di <sub>F</sub> /dt = - 15A/μs			200	ns
Q <sub>rr</sub>	T <sub>j</sub> = 25°C V <sub>R</sub> = 30V	I <sub>F</sub> = 1A	di <sub>F</sub> /dt = - 15A/μs			0.2	μC
I <sub>RM</sub>	T <sub>j</sub> = 25°C V <sub>R</sub> = 30V	I <sub>F</sub> = 1A	di <sub>F</sub> /dt = - 15A/μs			2	A

To evaluate the conduction losses use the following equations :

$$V_F = 1.2 + 0.012 I_F \qquad P = 1.2 \times I_{F(AV)} + 0.012 I_F^2 (RMS)$$