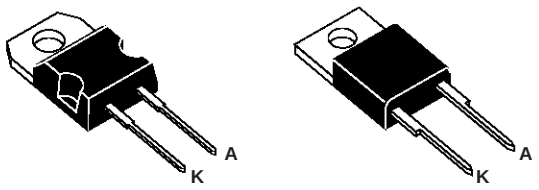
BYW81P-200
BYW81PI-200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

FEATURES

SUITED FOR SMPS
VERY LOW FORWARD LOSSES
NEGLIGIBLE SWITCHING LOSSES
HIGH SURGE CURRENT CAPABILITY
HIGH AVALANCHE ENERGY CAPABILITY
INSULATED VERSION :
Insulating voltage = 2500 V_{RMS}
Capacitance = 7 pF



TO-220AC (Plastic)	isolated TO-220AC (Plastic)
BYW81P-200	**BYW81PI-200**

DESCRIPTION

Single chip rectifier suited for switchmode power supply and high frequency DC to DC converters. Packaged in TO-220AC this device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Value	Unit
$I_{F(RMS)}$	RMS forward current			35	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	BYW81P	Tc=115°C	15	A
		BYW81PI	Tc=90°C	15	
I_{FSM}	Surge non repetitive forward current		tp=10ms sinusoidal	200	A
Tstg Tj	Storage and junction temperature range			- 40 to + 150 - 40 to + 150	°C °C

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive peak reverse voltage	200	V

THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case	BYW81P	2.0	°C/W
		BYW81PI	3.5	

ELECTRICAL CHARACTERISTICS
STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R *	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				1.5	mA
V_F **	T_j = 125°C	I_F = 12 A			0.85	V
	T_j = 125°C	I_F = 25 A			1.05	
	T_j = 25°C	I_F = 25 A			1.15	

Pulse test : * tp = 5 ms, duty cycle < 2 %
** tp = 380 µs, duty cycle < 2 %

To evaluate the conduction losses use the following equation :
$P = 0.65 \times I_{F(AV)} + 0.016 \times I_{F^2(RMS)}$

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
trr	T_j = 25°C	I_F = 0.5A I_R = 1A	Irr = 0.25A			25	ns
		I_F = 1A V_R = 30V	dI_F/dt = -50A/µs			40	
tfr	T_j = 25°C	I_F = 1A $V_{FR} = 1.1 \times V_F$	tr = 10 ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	tr = 10 ns		2		V