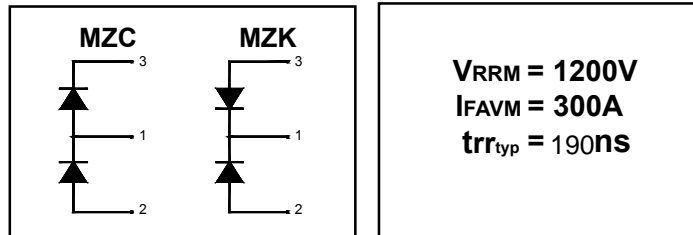


Fast Recovery Diode INT -A -PAK

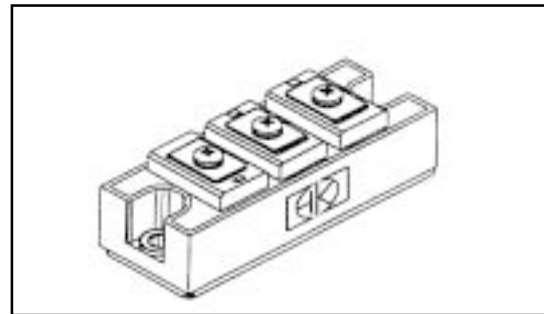
### Features

- International standard package  
With DBC ceramic base plate
- Ultra low losses
- Fast and soft reverse-recovery
- Highly rugged design
- Positive  $V_F$  Temperature coefficient
- Industry standard package



### Benefits

- Antiparallel diode for high frequency switching devices
- Increased operating efficiency
- Direct mounting to heatsink
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders
- Low voltage peaks for reduced protection circuits



### Absolute Maximum Ratings

Symbol	Test Conditions	Max.	Units
$V_{RSM}$ & $V_{RRM}$		1200	V
$I_{FRMS}$	$T_C=75^\circ\text{C}$	480	A
$I_{FAVM}$	$T_C=75^\circ\text{C}$ ; rectangular, $d=0.5$	300	A
$I_{FRM}$	$t_p < 10\mu\text{s}$ ; rep. rating, pulse width limited by $T_{VJM}$	1400	A
$I_{FSM}$	$T_{VJ}=45^\circ\text{C}$ ; $t=10\text{ms}$ (50 Hz), sine	3600	A
	$t=8.3\text{ms}$ (60 Hz), sine	4300	A
	$T_{VJ}=150^\circ\text{C}$ ; $t=10\text{ms}$ (50 Hz), sine	3000	A
	$t=8.3\text{ms}$ (60 Hz), sine	3500	A
$I^2t$	$T_{VJ}=45^\circ\text{C}$ ; $t=10\text{ms}$ (50 Hz), sine	23500	$\text{A}^2\text{s}$
	$t=8.3\text{ms}$ (60 Hz), sine	21400	$\text{A}^2\text{s}$
	$T_{VJ}=150^\circ\text{C}$ ; $t=10\text{ms}$ (50 Hz), sine	20300	$\text{A}^2\text{s}$
	$t=8.3\text{ms}$ (60 Hz), sine	18200	$\text{A}^2\text{s}$
$V_{ISOL}$	RMS Isolation Voltage, Any Terminal To Case, $t=1$ min	2500	V
$P_D$	$T_C=25^\circ\text{C}$	960	W
$T_J$	Operating Junction Temperature Range	-40 to +150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-40 to +125	

**MZC300TS120P**  
**MZK300TS120P**

**Thermal / Mechanical Characteristics**

	Parameter	Typ.	Max.	Units
R <sub>θJS</sub>	Thermal Resistance, Junction-to- Sink DC	-	0.22	
R <sub>θJC</sub>	Thermal Resistance, Junction-to- Case DC	-	0.13	°C/W
R <sub>θCS</sub>	Thermal Resistance, Case-to- Sink- Module	0.08	-	
	Mouting Torque, Case-to-Heatsink	-	4.0	N.m
	Mouting Torque, Case-to-Terminal 1,2 & 3	-	3.0	
	Weight of Module	200	-	g

**Electrical Characteristics (unless otherwise specified)**

	Parameter	Min.	Typ.	Max.	Units	Conditions
V <sub>RRM</sub>	Reverse Breakdown Voltage	1200	-	-	V	I <sub>R</sub> =10mA
I <sub>R</sub>	Diode Leaking Current	-	-	2	mA	T <sub>VJ</sub> =25°C V <sub>R</sub> =V <sub>RRM</sub>
		-	-	1	mA	T <sub>VJ</sub> =25°C V <sub>R</sub> =0.8V <sub>RRM</sub>
		-	-	12	mA	T <sub>VJ</sub> =125°C V <sub>R</sub> =0.8V <sub>RRM</sub>
V <sub>F</sub>	Diode Forward Voltage	-	-	1.80	V	I <sub>F</sub> =300A; T <sub>VJ</sub> =125°C
		-	-	1.75	V	T <sub>VJ</sub> = 25°C
		-	-	2.1	V	I <sub>F</sub> =500A; T <sub>VJ</sub> =125°C
		-	-	2.0	V	T <sub>VJ</sub> = 25°C
V <sub>TO</sub>	For power-loss calculations only	-	-	1.20	V	
r <sub>T</sub>		-	-	1.75	mΩ	
trr@T <sub>VJ</sub> =125°C	Diode Reverse Recovery Time	-	190	210	ns	I <sub>F</sub> =300A
I <sub>RM</sub> @T <sub>VJ</sub> = 25°C	Diode Peak Reverse Current	-	-	90	A	V <sub>R</sub> =600V
I <sub>RM</sub> @T <sub>VJ</sub> =125°C	Diode Peak Reverse Current	-	-	130	A	di/dt=1800A/μs

**Case Outline - int-a-pak**

