XI'AN IR-PERI Company

PRELIMINARY

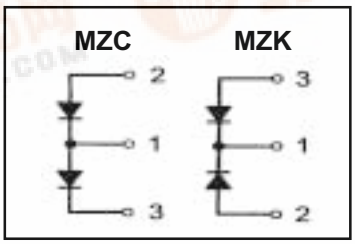
MZC400TS60U
MZK400TS60U

Fast Recovery Epitaxial Diode INT-A -PAK

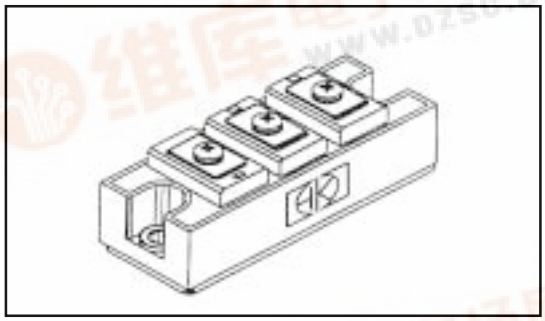
Ultra-Fast™ Speed FRED

Features

- International standard package With DBC ceramic base plate
- Planar passivated chips
- Short recovery time
- Low switching losses
- Ultra-soft recovery behaviour
- Industry standard package
- UL recongnition pending



V_{RRM} = 600V
I_{FAVM} = 400A
trr = 250ns



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}		600	V
I_{FRMS}	T_C=75 °C	560	A
I_{FAVM}	T_C=75°C; rectangular, d=0.5	400	A
I_{FRM}	t_P<10µs; rep. rating, pulse width limited by T_{VJM}	2185	A
I_{FSM}	T_{VJ}=45 °C; t=10ms (50 Hz),sine	3300	A
	t=8.3ms (60 Hz),sine	3600	A
	T_{VJ}=150 °C; t=10ms (50 Hz),sine	2880	A
	t=8.3ms (60 Hz),sine	3180	A
I^2t	T_{VJ}=45 °C; t=10ms (50 Hz),sine	38400	A^2s
	t=8.3ms (60 Hz),sine	39100	A^2s
	T_{VJ}=150 °C; t=10ms (50 Hz),sine	31100	A^2s
	t=8.3ms (60 Hz),sine	31800	A^2s
V_{ISOL}	RMS Isolation Voltage, Any Terminal To Case, t=1 min	2500	V
P_D	T_C=25 °C	1008	W
T_J	Operating Junction Temperature Range	-40 to +150	°C
T_{STG}	Storage Temperature Range	-40 to +125	

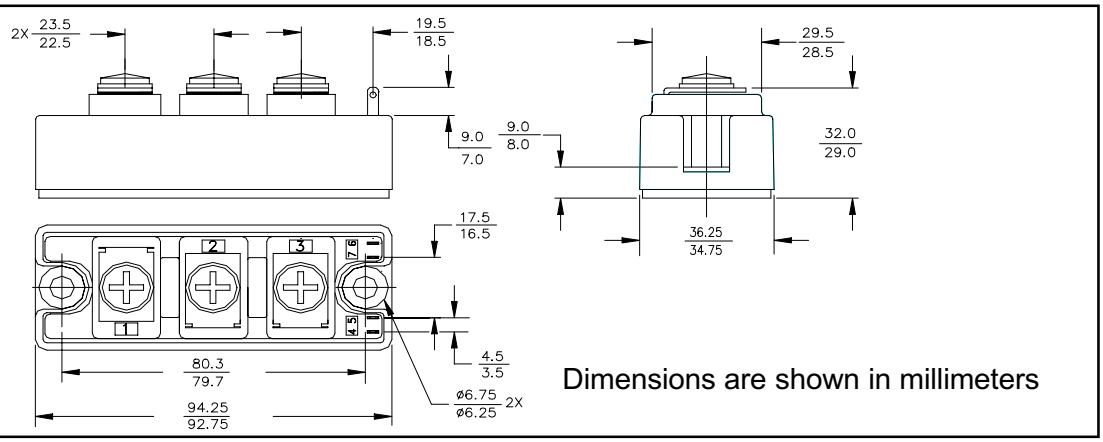
Termal / Mechanical Characteristics

	Parameter	Typ.	Max.	Units
$R_{\theta JS}$	Termal Resistance, Junction-to- Sink DC	-	0.202	
$R_{\theta JC}$	Termal Resistance, Junction-to- Case DC	-	0.122	°C/W
$R_{\theta CS}$	Termal Resistance, Csar-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_{RRM}	Reverse Breakdown Voltage	600	-	-	V	I_R=16mA
I_R	Diode Leaking Current	-	-	16	mA	T_{VJ}=25°C V_R=V_{RRM}
		-	-	5	mA	T_{VJ}=25°C V_R=0.8V_{RRM}
		-	-	100	mA	T_{VJ}=125°C V_R=0.8V_{RRM}
V_F	Diode Forward Voltage	-	-	1.17	V	I_F=230A; T_{VJ}=125°C
		-	-	1.36	V	T_{VJ}= 25°C
		-	-	1.41	V	I_F=400A; T_{VJ}=125°C
		-	-	1.52	V	T_{VJ}= 25°C
V_{TO}	For power-loss calculations only	-	-	0.85	V	
r_T		-	-	1.14	mΩ	
trr@T_{VJ}=100°C	Diode Reverse Recovery Time	-	250	300	ns	IF=400A
I_{RM}@T_{VJ}= 25°C	Diode Peak Reverse Current	-	-	66	A	VR=300V
I_{RM}@T_{VJ}=100°C	Diode Peak Reverse Current	-	-	110	A	-di/dt=600A/μs

Case Outline - Int-a-pak



Dimensions are shown in millimeters