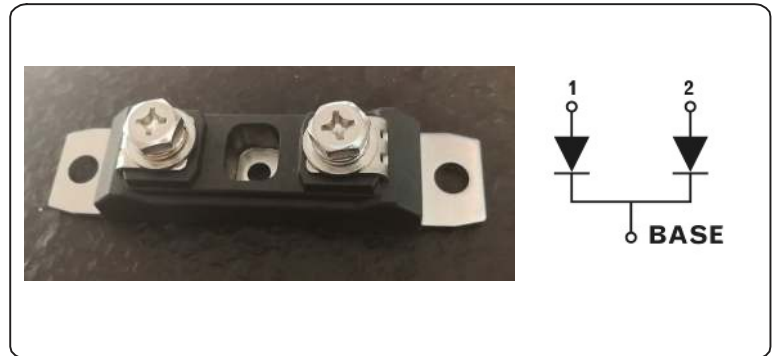


Schottky Rectifier ,400A

FEATURES

- 175°C Tj operation
- Centertapmodule
- Lo forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and Long term reliability
- Lead(pb)-free
- Designed and qualified for industrial level



TYPICAL APPLICATIONS

- High current switching power supplies
- Plating power supplies
- UPS system
- Converters
- Freewheeling
- Welder
- Reverse battery protection

PRODUCT SUMMARY

TYPE	IF(AV)	VR
YZPST-400DK100	400A	100V

VOLTAGE RATINGS

PARAMETER	SYMBOL	JDS400DK100	UNIT
Maximum DC reverse voltage	VR	100	V
Maximum working peak reverse voltage	VRWM	100	

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNIT
IF(AV)	Rectangular waveform	400	A
VRRM		100	V
IFSM	Tp=5us sine	22000	A
VF	200APK TJ=125°C(per leg)	0.70	V
TJ	Range	-55 to 175	°C

YZPST High Power Products

ABSOLUTE MAXIMUM RATINGS					
PARAMETE	SYMBOL	TEST CONDITIONS		VALUES	UNIT
Maximum average forward Current per leg per device	IF(AV)	50% duty cycle at T _J = 142°C, rectangular waveform		200	A
				400	
Maximum peak one cycle non-repetitive surge current per leg	IFSM	5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated VRRM Applied	22000	A
		10 ms sine or 6 ms rect. pulse		2750	
Non- repetitive avalanche energy per leg	EAS	T _J =25°C, I _{AS} =13A, L=0.2mH		16.5	mJ
Repetitive avalanche current per leg	IAR	Current decaying linearly to zero in 1 μs Frequency limited by T _J maximum VA=1.5xV typical		1	A

ELECTRICAL SPECIFICATIONS					
PARAMETE	SYMBOL	TEST CONDITIONS		VALUES	UNIT
Maximum forward voltage drop per leg	V _{FM} ⁽¹⁾	200A	T _J =25°C	0.8	V
		400A		0.95	
		200A	T _J =125°C	0.70	
		400A		0.85	
Maximum reverse leakage current per leg	I _{RM} ⁽¹⁾	T _J =25°C	V _R =Rated V _R	2.5	mA
		T _J =125°C		40	
Maximum junction capacitance per leg	C _T	V _R = 5 VDC (test signal range 100 kHz to 1 MHz) 25°C		4150	pF
Typical series inductance per leg	L _s	From top of terminal hole to mounting plane		6.0	nH
Maximum voltage rate of change	dV/dt	Rated V _R		10000	V/μs

Note: (1) Pulse width < 300 μs, duty cycle < 2%

THERMAL-MECHANICAL SPECIFICATIONS					
PARAMETE	SYMBOL	MIN	TYP	MAX.	UNIT
Maximum junction and storage temperature range	T _J , T _{Stg}	-55	-	175	°C
Thermal resistance, junction to case per leg	R _{thjc}	-	-	0.18	°C/W
Thermal resistance, junction to case per module	R _{thcs}	-	-	0.080	
Thermal resistance, case to heatsink		-	0.1	-	
Weight	-	-	78	-	g
Mounting torque		35.4(4)	-	53.1(6)	lbf · in (N · m)
Mounting torque center hole		30(3.4)	-	40(4.6)	
Terminal torque		30(3.4)	-	44.2 (5)	
vertical pull		-	-	80	lbf · in
2" lever pull		-	-	35	

YZPST High Power Products

Fig.1 Maximum forward voltage drop Characteristics(Per Leg)

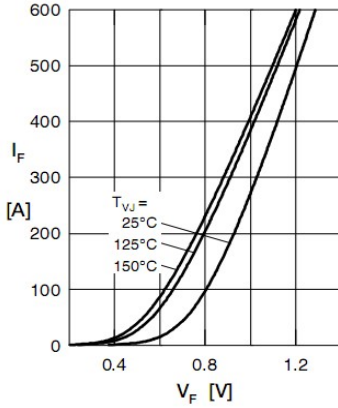


Fig.2 Typical Junction Capacitance vs reverse Voltage(Per leg)

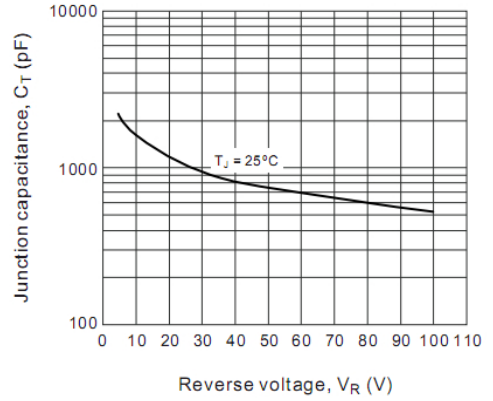
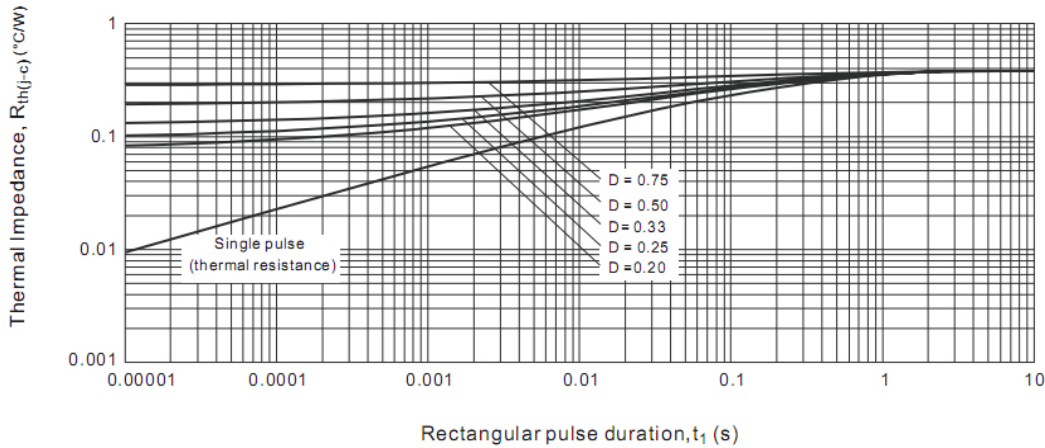


Fig.3 Maximum thermal impedance R_{th(j-c)} characteristics (Per Leg)



YZPST High Power Products

Fig.4 Maximum allowable case temperature Vs.Average forward current (Per Leg)

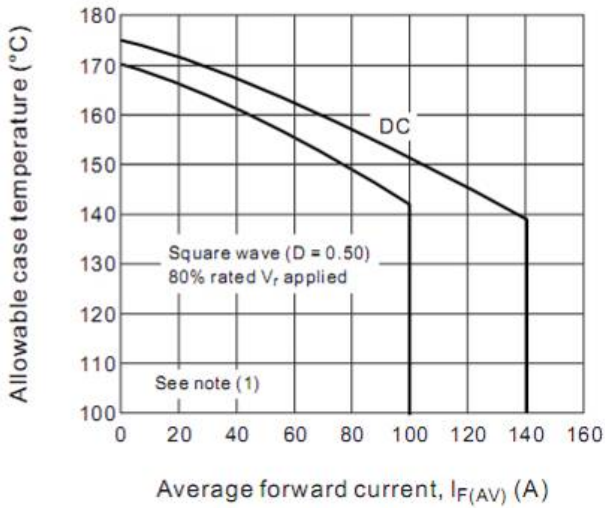


Fig.5 Forward power loss characteristics (Per Leg)

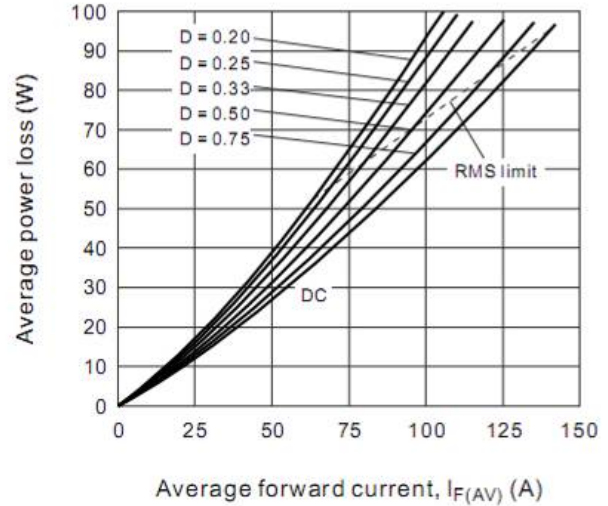


Fig.6 Maximum non-repetitive surge current (Per Leg)

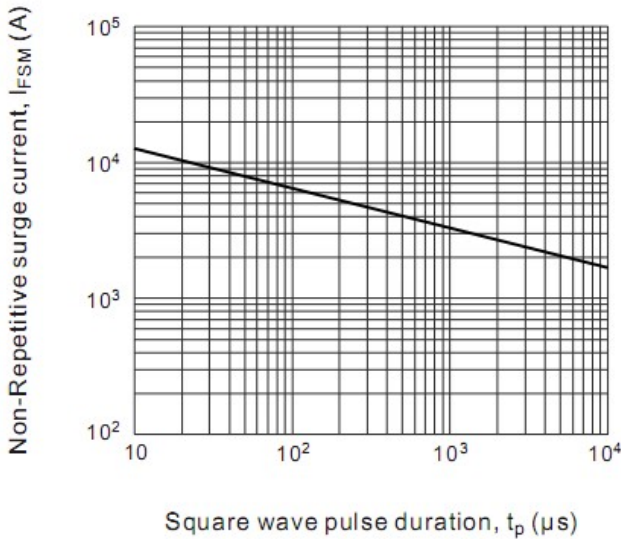
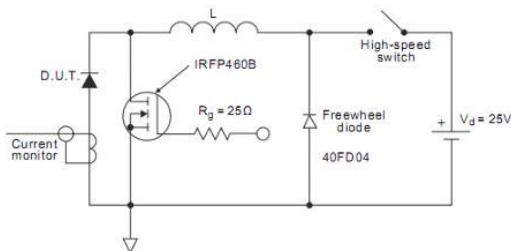
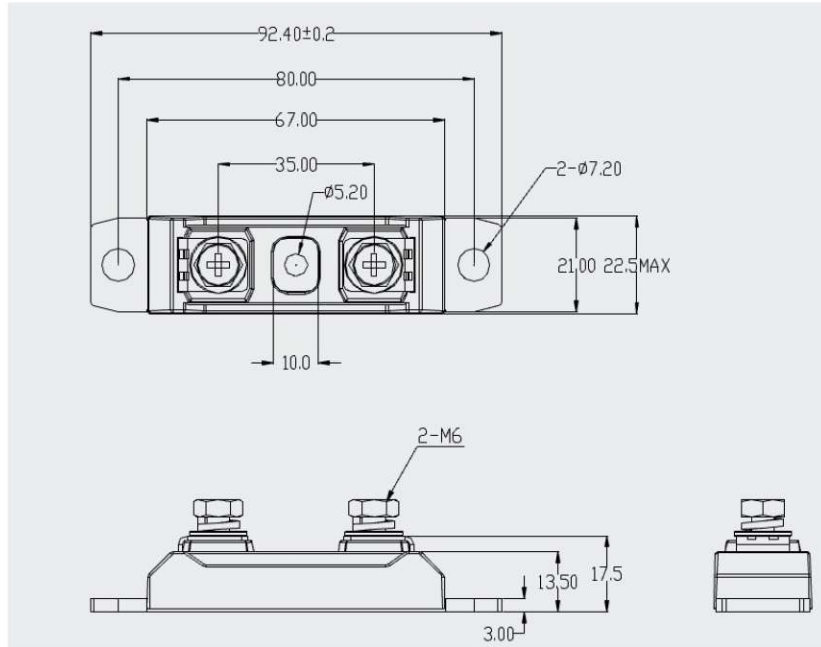


Fig.7 Unclampen Inductive test circuit



Note
 (1) Formula used: $T_C = T_J - (P_d + P_{dREV}) \times R_{thJC}$
 $P_d = \text{Forward power loss} = I_{F(AV)} \times V_{FM} \text{ at } (I_{F(AV)}/D)$ (see fig.6)
 $P_{dREV} = \text{Inverse power loss} = V_{R1} \times I_R (1-D)$; I_R at $V_{R1} = 80\%$ rated V_R

FD Package



Dimensions in mm