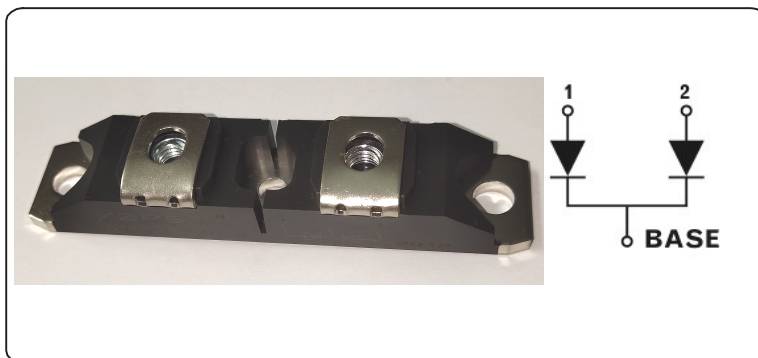


YZPST High Power Products

Schottky Rectifier ,400A

FEATURES

- 175°C T_j 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
- Comverters
- Freewheeling
- Welder
- Reverse battery protection

PRODUCT SUMMARY

TYPE	I _F (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 CHARA CTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNIT
I _F (AV)	Rectangular waveform	400	A
VRRM		100	V
I _{FSM}	T _p =5us sine	22000	A
V _F	200APK T _J =125°C(per leg)	0.70	V
T _J	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 = 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	TJ=25°C, IAS=13A, L=0.2mH		16.5	mJ
Repetitive avalanche current per leg		IAR	Current decaying linearly to zero in 1 μs Frequency limited by TJ 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	$T_J=25^{\circ}C$	0.8	V	
		400A		0.95		
		200A	$T_J=125^{\circ}C$	0.70		0.85
		400A				
Maximum reverse leakage current per leg	$I_{RM}^{(1)}$	$T_J=25^{\circ}C$	$V_R=Rated\ V_R$	2.5	mA	
		$T_J=125^{\circ}C$		40		
Maximum junction capacitance per leg	C_T	$V_R = 5\ VDC$ (test signal range 100 kHz to 1 MHz) $25^{\circ}C$		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 μ s, 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)

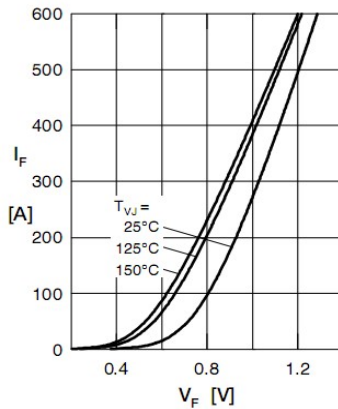


Fig.2 Typical Junction Capacitance vs
reverse Voltage(Per leg)

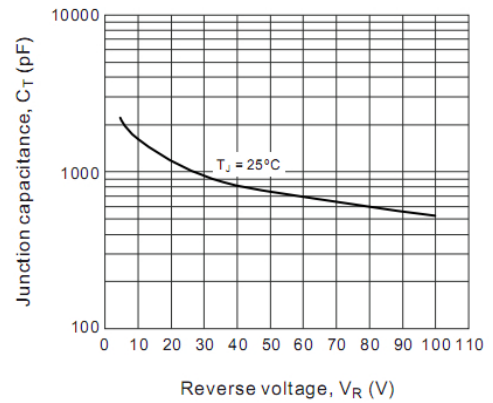
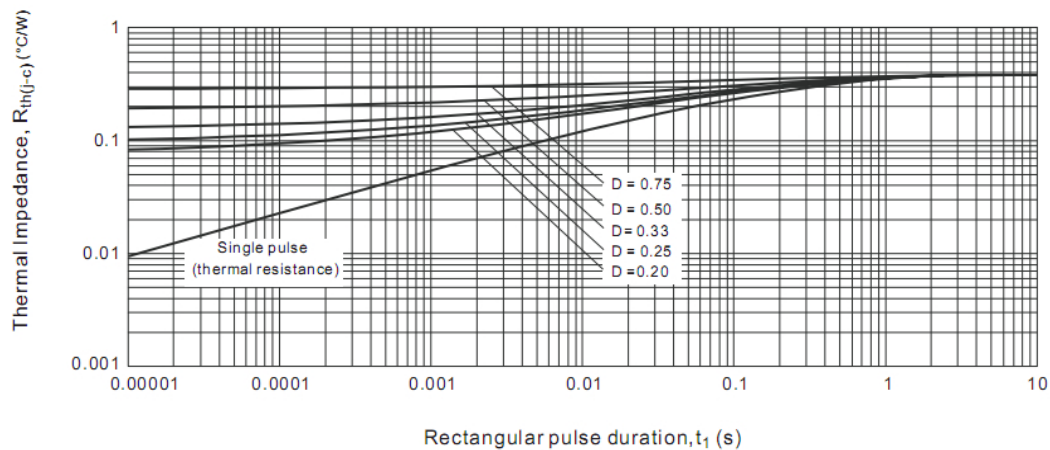


Fig.3 Maximum thermal impedance $R_{th(j-c)}$ characteristics
(Per Leg)



YZPST High Power Products

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

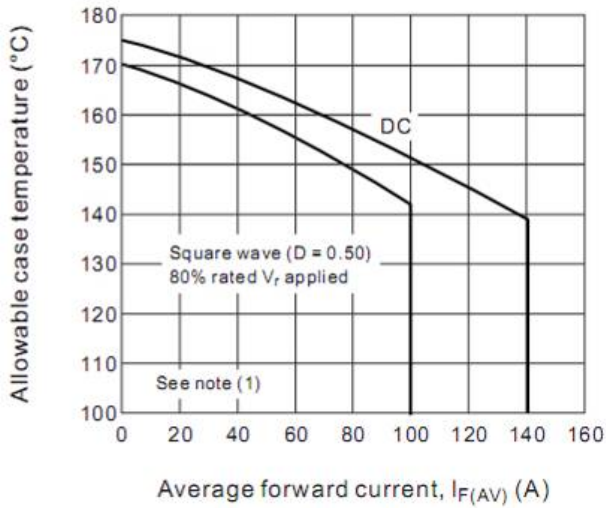


Fig.5 Forward power loss characteristics
(Per Leg)

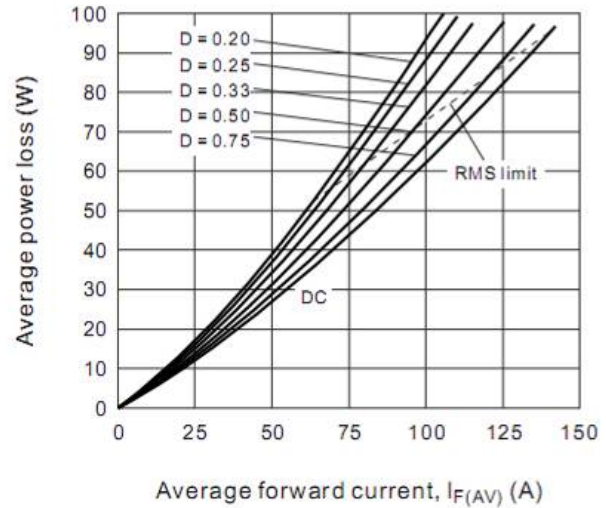


Fig.6 Maximum non-repetitive surge current
(Per Leg)

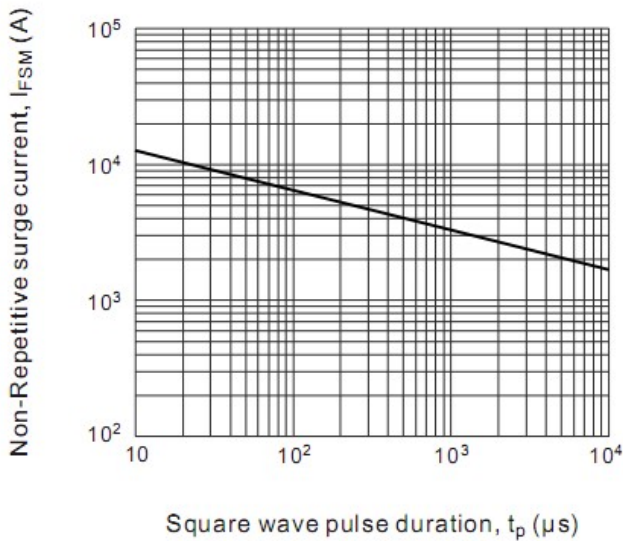
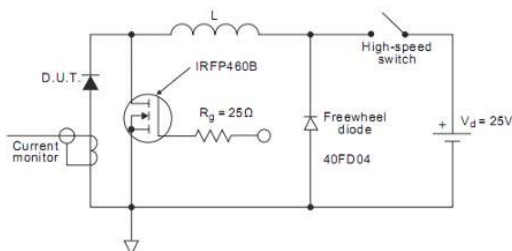


Fig.7 Unclampen Inductive test circuit

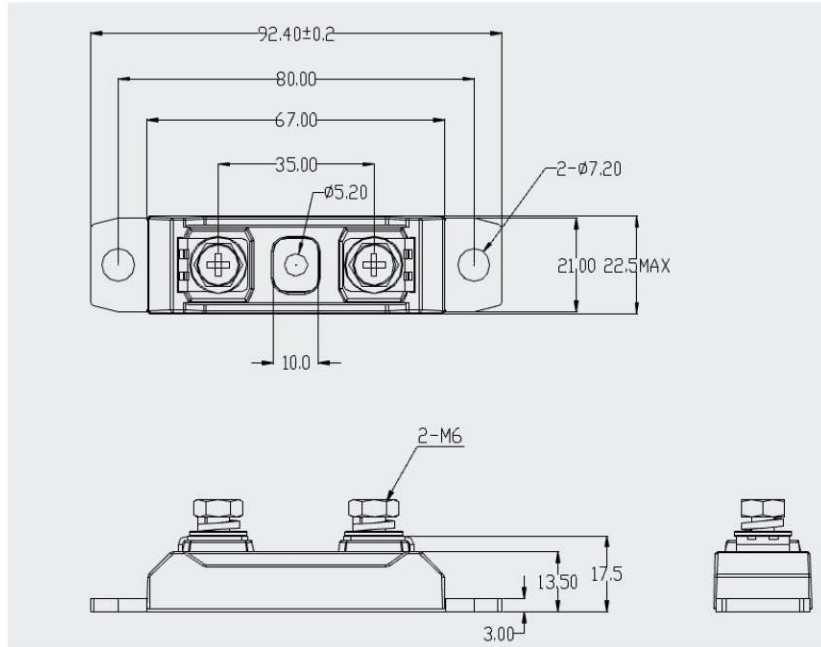


Note

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

YZPST High Power Products

FD Package



Dimensions in mm