


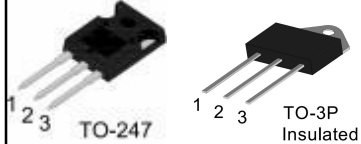
P/N:YZPST-50TPS 50A SCR series

FEATURES

- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

●APPLICATIONS

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

Parameters Summary	
VD/VR:1200/1600V IT(RMS):50A IGT :40mA	
	



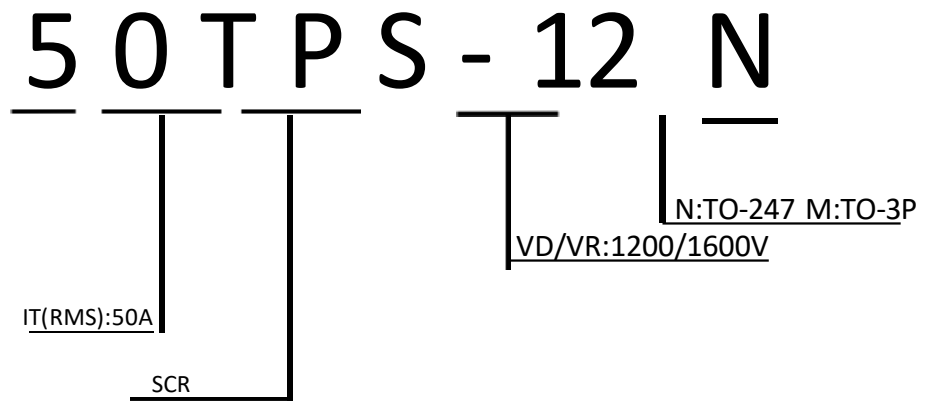
ABSOLUTE MAXIMUM RATINGS			
Parameter	Symbol	Value	Unit
Storage junction temperature range	Tstg	-40 ~ 150	°C
Operating junction temperature range	Tj	-40 ~ 125	°C
Repetitive peak off-state voltage (T =25°C)	V _{DRM}	1200/1600	V
Repetitive peak reverse voltage (T =25°C)	V _{RRM}	1200/1600	V
Non repetitive surge peak Off-state voltage	V _{DSM}	V _{DRM} +100	V
Non repetitive peak reverse voltage	V _{RSM}	V _{RRM} +100	V
RMS on-state current (T =100°C)	I _{T(RMS)}	50	A
Non repetitive surge peak on-state current	I _{TSM}	630	A
I ² t value for fusing (tp= 10ms)	I ² t	2450	A ² S
Critical rate of rise of on-state current (I =2×IGT, tr ≤ 100 ns)	di/dt	150	A/μS
Peak gate current	I _{GM}	2.5	A
Average gate power dissipation	P _{G(AV)}	2.5	W

Thermal Resistances			
Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case (DC)	TO-3P	0.60
		TO-247	0.55
			°C/W

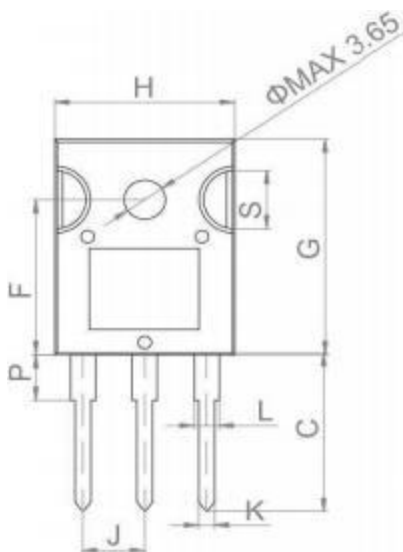
ELECTRICAL CHARACTERISTICS (T=25°C unless otherwise specified)					
Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V = 12V R = 140\Omega$	20	40	60	mA
V_{GT}				1.3	V
V_{GD}	$V_D = V_{DRM} T_j = 125^\circ C R = 1K\Omega$	0.2			V
I_L	$I_G = 1.2I_{GT}$			300	mA
I_H	$I_T = 50mA$			200	mA
dV/dt	$V_D = 2/3 V_{DRM}$ Gate Open $T_j = 125^\circ C$	500			V/ μs

STATIC CHARACTERISTICS				
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM} = 140A t_p = 380\mu s$	$T_j = 25^\circ C$	1.8	V
I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_j = 25^\circ C$	200	μA
I_{RRM}		$T_j = 125^\circ C$	8	mA

Ordering Information Scheme

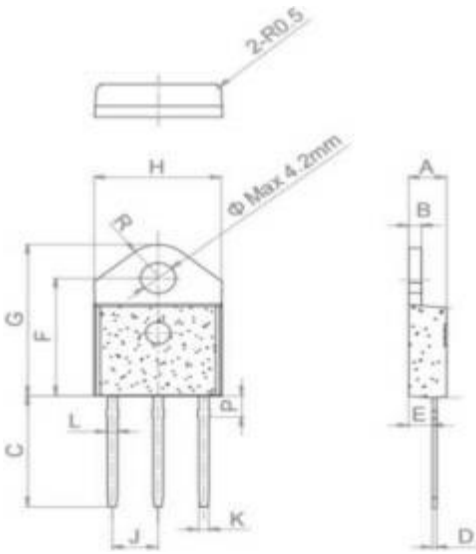


TO-247 Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.9		5.4	0.193		0.213
B	1.6		2.0	0.063		0.079
C	14.35		15.4	0.565		0.606
D	0.5		0.8	0.020		0.031
F	14.4		15.1	0.567		0.594
G	19.7		20.6	0.775		0.811
H	15.4		16.2	0.606		0.638
J	5.3		5.6	0.209		0.220
K	1.3		1.5	0.051		0.059
L	2.8		3.3	0.110		0.130
P	3.7		4.2	0.146		0.165
S	5.35		5.65	0.211		0.222

TO-3P Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ-	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.40		1.60	0.055		0.062
C	15.48		15.88	0.609		0.625
D	0.50		0.70	0.019		0.027
E	2.70		2.90	0.106		0.114
F	15.92		16.32	0.626		0.642
G	20.27		20.67	0.798		0.813
H	15.15		15.35	0.590		0.604
J		5.45			0.214	0.216
K	1.10		1.30	0.043		0.051
L	1.15		1.35	0.045		0.053
P	2.68		3.08	0.105		0.121
R		4.20			0.165	

FIG.1 Maximum power dissipation versus on-state current

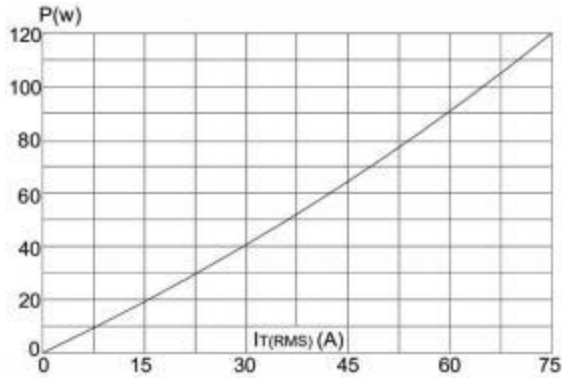


FIG.2: on-state current versus case temperature

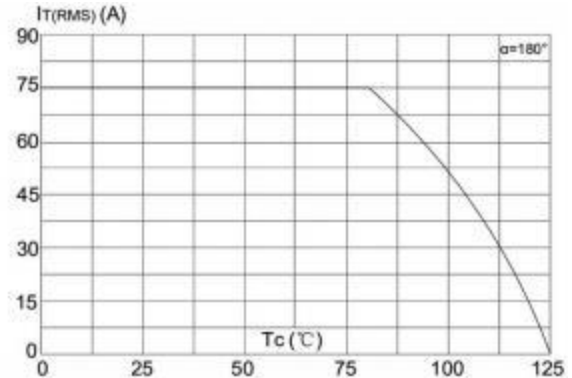


FIG.3: Surge peak on-state current versus number of cycles

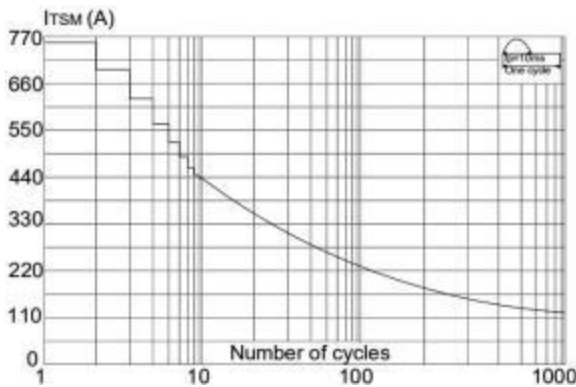


FIG.4: On-state characteristics (maximum values)

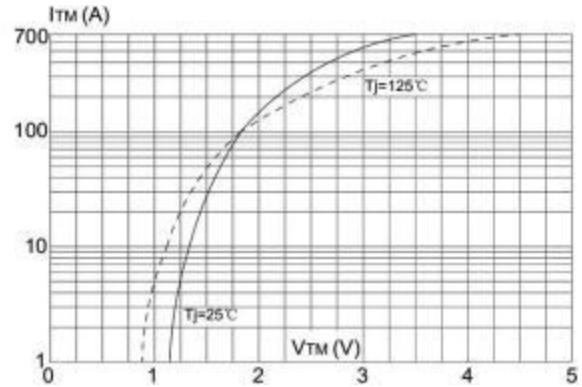


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

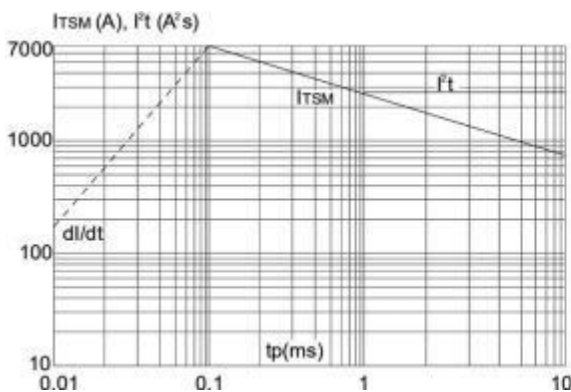


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature

