

P/N: YZPST-S4050 40A SCR_s

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:1600V IT(RMS):40A IGT :50mA	



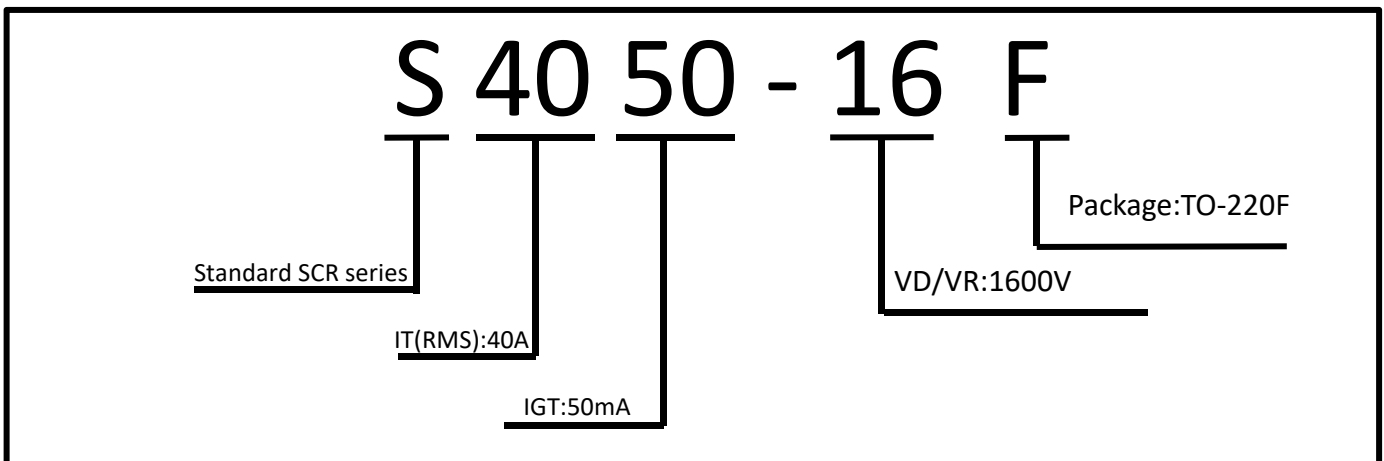
ABSOLUTE MAXIMUM RATINGS			
Parameter	Symbol	Value	Unit
Storage junction temperature range	T _{stg}	-40 ~150	°C
Operating junction temperature range	T _j	-40~125	°C
Repetitive peak off-state voltage	V _{DRM}	1600	V
Repetitive peak reverse voltage	V _{RRM}	1600	V
Non repetitive surge peak Off-state voltage	V _{DSM}	V _{DRM} +100	V
Non repetitive peak reverse voltage	V _{RSM}	V _{RRM} +100	V
Non repetitive surge peak on-state current	I _{TSM}	420	A
RMS on-state current (180° conduction angle)	I _{T(RMS)}	40	A
Average on-state current (180° conduction angle)	I _{T(AV)}	25	A
I ² t value for fusing (tp=10ms)	I ² t	880	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	IGM	4	A
Peak gate power	PGM	5	W

Thermal Resistances			
Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case (DC)	TO-220A	1.2
		TO-220C	0.8
		TO-220F	0.85

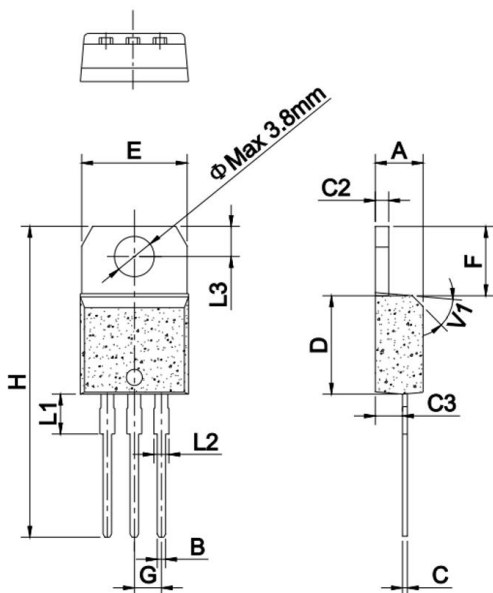
ELECTRICAL CHARACTERISTICS (T=25°C unless otherwise specified)				
Symbol	Test Condition		Value	Unit
I_{GT}	V = 12V R = 140Ω	MAX.	50	mA
V_{GT}		MAX.	1.5	V
V_{GD}	$V_D = V_{DRM}$ Tj = 125°C	MIN.	0.2	V
I_L	$I_G = 1.2I_{GT}$	MAX.	200	mA
I_H	IT = 50mA	MAX.	100	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open Tj = 125°C	MIN.	1000	V/μs

STATIC CHARACTERISTICS				
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	ITM = 60A tp = 380μs	Tj = 25°C	1.5	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	Tj = 25°C	10	μA
I_{RRM}		Tj = 125°C	4	mA

Ordering Information Scheme

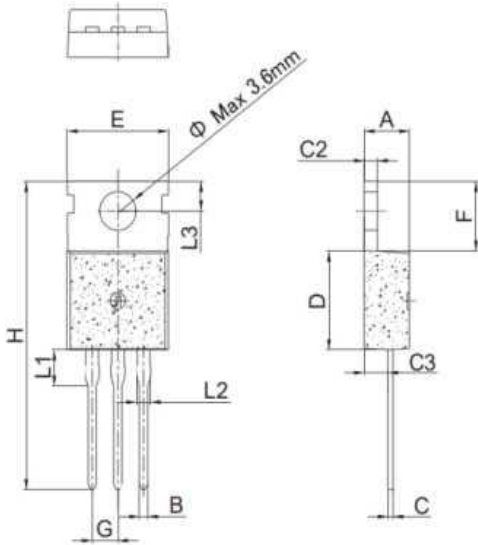


TO-220A Package Mechanical Data



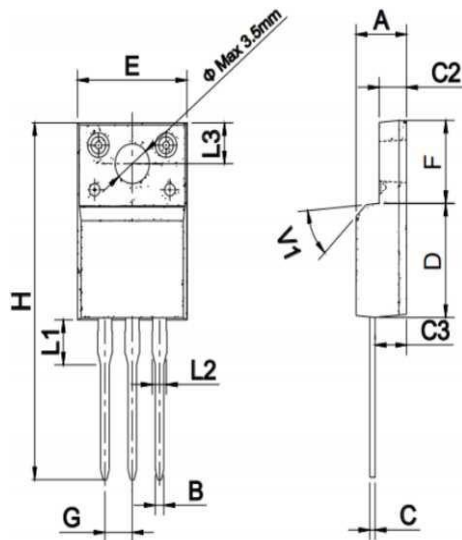
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.30		1.48	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
e		3.6			0.142	

TO-220C Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.30		1.48	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
e		3.6			0.142	

TO-220F Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.50		3.10	0.096		0.108
C3	2.40		2.80	0.102		0.118
D	8.60		8.90	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.70		7.50	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

FIG.1 Maximum power dissipation versus on-state current

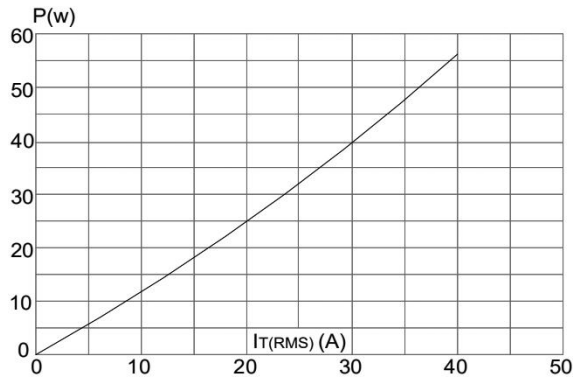


FIG.2: on-state current versus case temperature

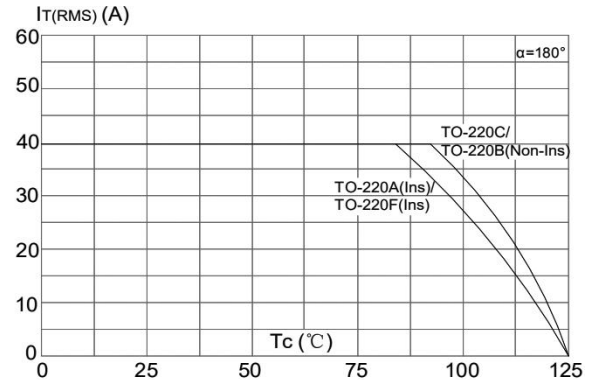


FIG.3: Surge peak on-state current versus number of cycles

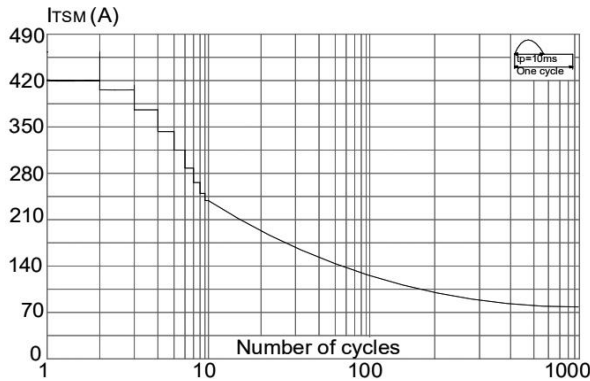


FIG.4: On-state characteristics (maximum values)

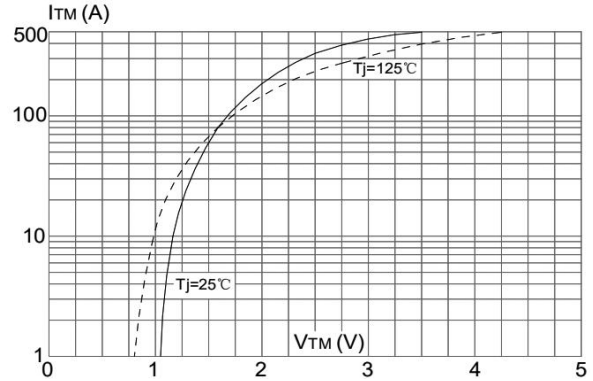


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

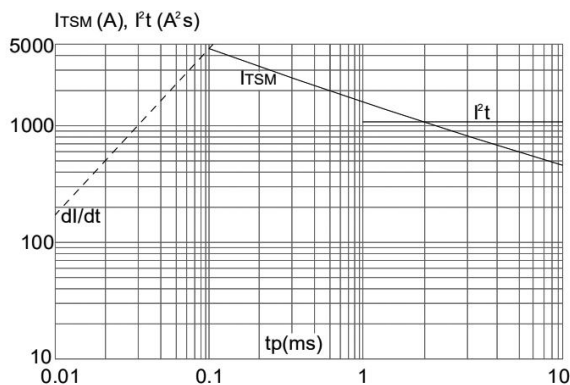


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature

