

P/N:YZPST-CLA100E16 SCRs

FEATURES

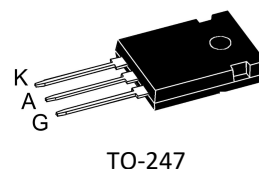
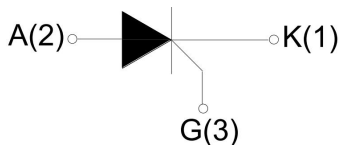
- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

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):160A IGT :40mA



TO-247



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)}	160	A
Non repetitive surge peak on-state current	I _{TSM}	1150	A
Average on-state current (180° conduction angle)	I _{T(AV)}	100	A
I ² t value for fusing (tp=10ms)	I ² t	6600	A ² S
Critical rate of rise of on-state current t(I =2×IGT, tr ≤ 100 ns)	di/dt	150	A/μS
Peak gate current	I _{GM}	5	A
Average gate power dissipation	P _{G(AV)}	1	W

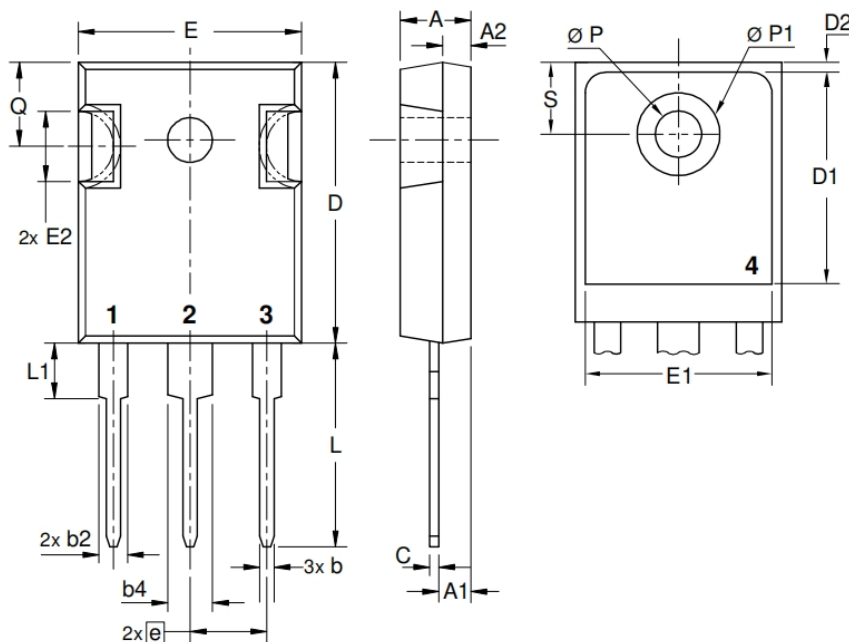
Thermal Resistances

Symbol	Parameter		Value	Unit
Rth(j-c)	Junction to case (DC)	TO-247PULS	0.45	°C/W

ELECTRICAL CHARACTERISTICS (T=25°C unless otherwise specified)				
Symbol	Test Condition		Value	Unit
I_{GT}	$V = 12V \ R = 140\Omega$	MAX.	40	mA
V_{GT}		MAX.	1.5	V
V_{GD}	$V_D = V_{DRM} \ T_j = 125^\circ C \ R = 1K\Omega$	MIN.	0.2	V
I_L	$I_G = 1.2I_{GT} \ T_j = 25^\circ C$	MAX.	250	mA
I_H	$V_D = 12V \ T_j = 25^\circ C$	MAX.	200	mA
dV/dt	$V_D = 2/3V_{DRM} \ \text{Gate Open} \ T_j = 125^\circ C$	MIN.	1000	V/ μs

STATIC CHARACTERISTICS				
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$ITM = 160A \ tp = 380\mu s$	$T_j = 25^\circ C$	1.7	V
I_{DRM}	$V_D = V_{DRM} \ V_R = V_{RRM}$	$T_j = 25^\circ C$	100	μA
I_{RRM}		$T_j = 125^\circ C$	8	mA

TO-247 Package Mechanical Data



Sym.	Inches min.	Inches max.	Millimeter min.	Millimeter max.
A	0.185	0.209	4.70	5.30
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
D	0.819	0.845	20.79	21.45
E	0.610	0.640	15.48	16.24
E2	0.170	0.216	4.31	5.48
e	0.215	BSC	5.46	BSC
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
Ø P	0.140	0.144	3.55	3.65
Q	0.212	0.244	5.38	6.19
S	0.242	BSC	6.14	BSC
b	0.039	0.055	0.99	1.40
b2	0.065	0.094	1.65	2.39
b4	0.102	0.135	2.59	3.43
c	0.015	0.035	0.38	0.89
D1	0.515	-	13.07	-
D2	0.020	0.053	0.51	1.35
E1	0.530	-	13.45	-
Ø P1	-	0.29	-	7.39

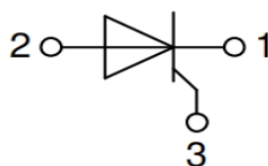


FIG.1 Maximum power dissipation versus Average on-state current

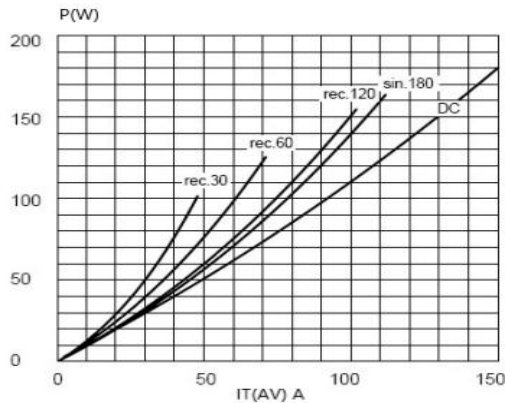


FIG.2: Max. forward current versus case temperature

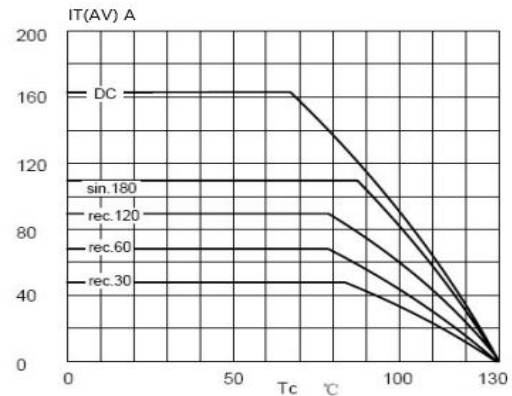


FIG.3: Surge peak on-state current versus number of cycles

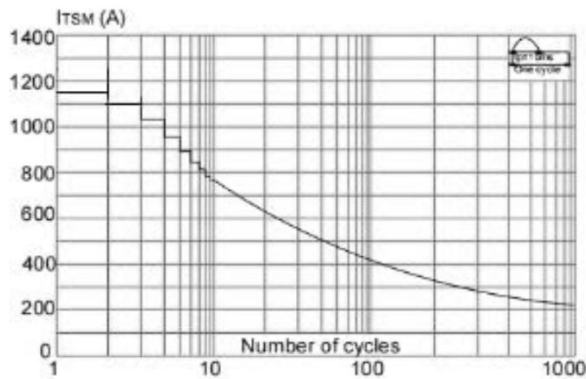


FIG.4: On-state characteristics (maximum values)

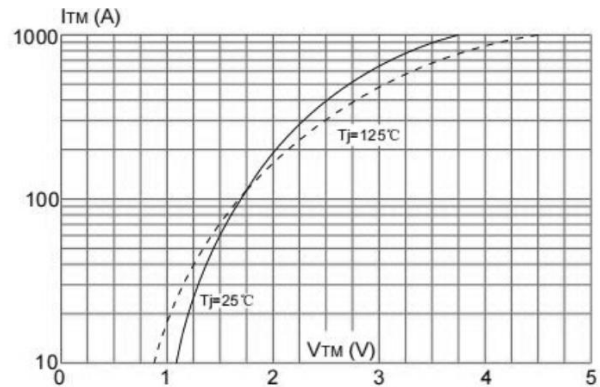


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

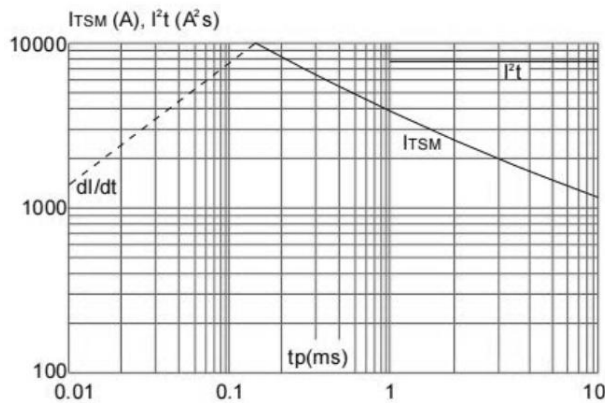


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature

