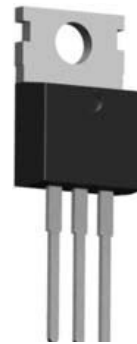


YAREN STANDARD 25A SCRs
General Description

High current density due to mesa technology.
 These series of silicon controlled rectifiers are specifically Designed for medium power switching and phase control Applications.
 These series are suitable for general purpose Applications a high gate sensitivity is required.
 YR1225 series provides a 2500V RMS isolation voltage From all three terminals to external heatsink

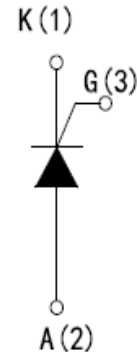
Features

- $I_T(\text{RMS})=25\text{A}$
- $I_{GT}\leq 50\text{mA}$
- $V_{TM}\leq 1.6\text{V}$



1 2 3

To-220 Top View



Schematic Diagram

 $V_{DRM} = 1200\text{ V}$
 $I_T(\text{RMS}) = 25\text{A}$
 $I_{GT} \leq 50\text{mA}$
Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
YR1225	YR1225	T0-220CE	-	-	-

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{DRM}	Repetitive peak off-state voltage T _j =25°C	1200	V
V _{RRM}	Repetitive peak Reverse voltage T _j =25°C	1200	V
I _{T(RMS)}	RMS on-state current (half sine wave) T _C =83°C	25	A
I _{T(AV)}	Average on-state current (half sine wave) T _C =83°C	16	A
I _{TSM}	Non repetitive surge peak On-state current (half sine Cycle T _j =25°C) f=50Hz t=10ms	300	A
I _{GM}	Peak gate current t _p =20us T _j =125°C	4	A
P _{GM}	Peak gate power t _p =20us T _j =125°C	5	W
P _{G(AV)}	Average gate power dissipation T _j =125°C	1	W
I _{2t}	I _{2t} Value for for fusing	450	A ² s
T _{stg}	Storage junction temperature range	-50 To 150	°C
T _J	Operating Junction Temperature Range	-55 To 175	°C

Thermal Resistances

Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case(DC)	2.0	°C/W
Rth(j-a)	Junction-to-Ambient(DC)	60	°C/W

Electrical Characteristics (TA=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
IGT	Gate trigger current	VD=12V RL=33Ω		25		mA
VGT	Gate trigger Voltage	VD=12V RL=33Ω		0.85	1	V
VGD		VD=VDRM RL=3.3KΩ TJ=125°C			0.2	V
IL	Latching current	IG=1.2IGT		45	90	mA
IH	Holding current	I _t =500mA		25	50	mA
Dv/dt	Critical rate of rise of off-state voltage	VD=67%VDRM gate 0pen TJ=125°C	1500			V/us

Static Characteristics

VTM	On-state Voltage	ITM=50A TP=380us TJ=25°C			1.6	V
IDRM	Off-state leakage current	VD=VDRM TJ=25°C			5	uA
IDRM	Off-state leakage current	VD=VDRM TJ=125°C			4	mA
IRRM	Off-state leakage current	VR=VRRM TJ=25°C			5	uA
IRRM	Off-state leakage current	VR=VRRM TJ=125°C			4	mA

Characteristics Curve:

FIG.1: Maximum power dissipation versus average on-state current(half cycle)

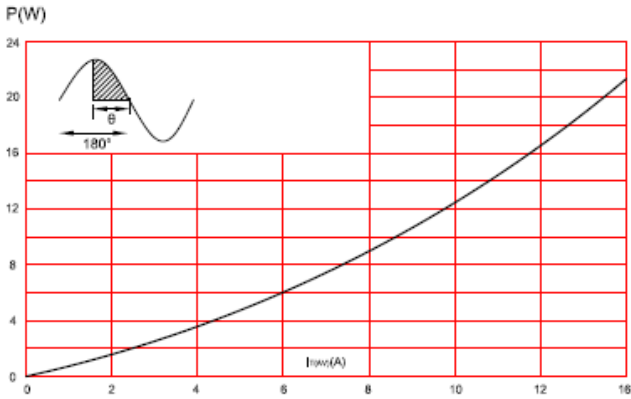


FIG.2: RMS on-state current versus case temperature(full cycle)

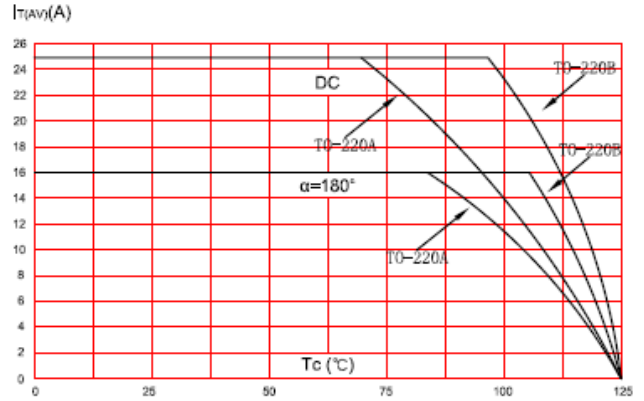


FIG.3: On-state characteristics (maximum values).

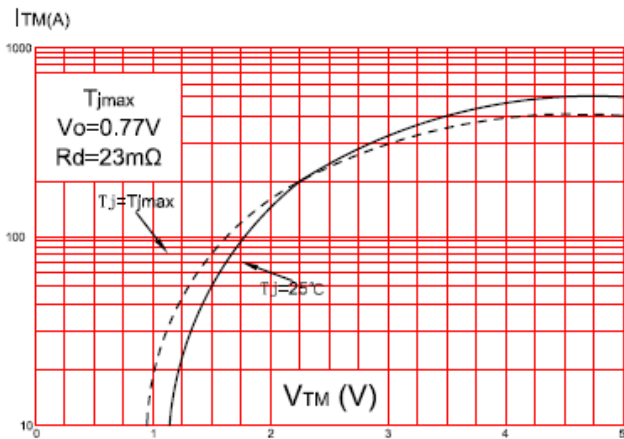


FIG.4: Surge peak on-state current versus number of cycles.

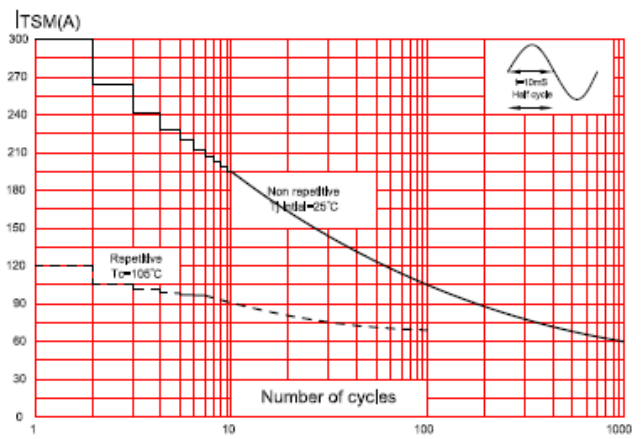


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I²t.

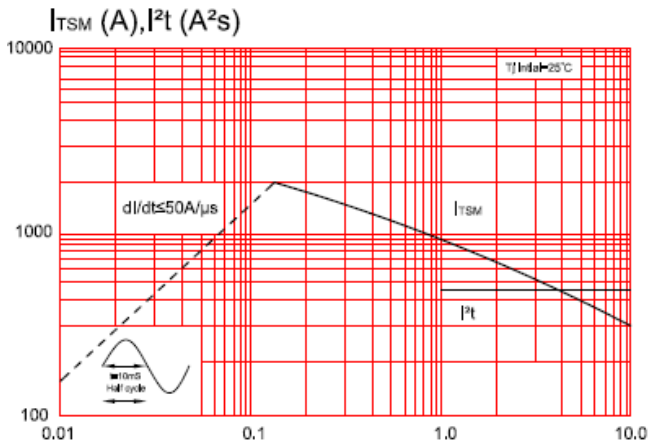


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature(typical values)

