

YAREN STANDARD 20A SCRs
General Description

Glass passivated thyristors in a plastic envelope ,Intended for use applications requiring high bidirectional blocking voltage capability and high thermal cycling performance. Typical applications include motor control ,industrial and domestic lighting, heating and static switching.

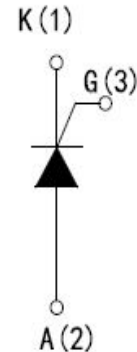
Features

- $I_T(AV)=20A$
- $I_{GT} \leq 25mA$
- $V_{TM} \leq 1.6V$



K A G

To-220 Top View



Schematic Diagram

$$V_{DRM} = 600 V$$

$$I_T(AV) = 20A$$

$$I_{GT} \leq 25mA$$

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
BT153	BT153	T0-220CE	-	-	-

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

Symbol	Parameter/ Condititns	Value	Unit
VDRM/VRRM	Repetitive peak off-state Voltages	600	V
$I_T(AV)$	Average on-state current (half sine wave; $T_{mb} \leq 109^\circ C$)	13	A
$I_T(RMS)$	RMS on-state current (all conduction angles)	20	A
I_{TSM}	Non-repetitive peak on-state current(half sine wave; $T_j=25^\circ C t=10ms$)	210	A
	Non-repetitive peak on-state current(half sine wave; $T_j=25^\circ C t=8.3ms$)	230	A
I^2T	I^2T for fusing ($t=10ms$)	200	A^2S
Dit/dt	Repetitive rate of rise of on-state current after triggering ($I_{TM}=20A; I_G=50mA; DiG/dt=50mA/us$)	200	A/us
IGM	Peak gate current	5	A
VGM	Peak gate voltage	5	V
PGM	Peak gate power	4	W
P G(AV)	Average gate power (over any 20 ms period)	1	W
TJ	Operating junction temperature	-40 To 125	$^\circ C$

Thermal Resistances

Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case(DC)	1.05	°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 IT=0.1V	2		25	mA
VGT	Gate trigger Voltage	VD=12V IT=0.1V		0.7	1.5	V
		V D=VDRM(MAX);IT =0.1A;TJ=125°C	0.20	0.4		V
V T	On-state voltage	V IT =23A		1.4	1.75	V
IL	Latching current	VD=12V IT=0.1V		25	60	mA
IH	Holding current	VD=12V IT=0.1V		15	50	mA
I D/I R	Off-state leakage current	V D=VDRM(MAX);VR=VRRM(MAX);TJ=125°C		0.2	1.0	mA

Dynamic Characteristics

DVD/DT	Critical rate of rise or off-state voltage	VDM=67%VDRM(MAX) ; TJ=125 °C; (Gate open circuit)	200	300		V/us
		RGK=100Ω	200	1000		V/us
TGT	Gate controlled turn-on time	ITM=40A;VD=VDRM(MAX);IG=0.1 A, Dig/dt=5A/us		2		us
TG	Circuit commutated turn-off time	VD=67%VDRM(MAX);TJ=125 °C ITM=20A;VR=25V;Ditm/dt=30A/us dvd/dt=50V/us;Rgk=100 Ω		70		us

Characteristics Curve:
