JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

TO-126K Plastic-Encapsulate Thyristors

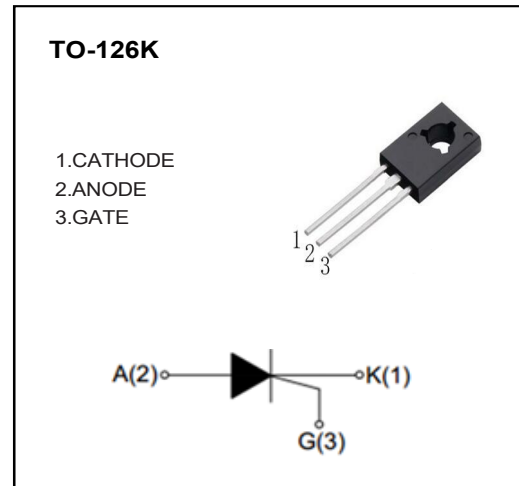## CS030E Sensitive Gate SCRs

MAIN CHARACTERISTICS

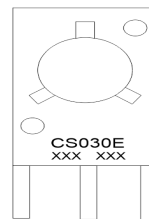|	
$I_{T(AV)}$	2A
V_{DRM}/V_{RRM}	600V
I_{GT}	200μA

FEATURES

- PNPN 4-layer Structure SCRs
- Mesa Glass Passivated Technology
- Multi Layers Metal Electrodes
- Sensitive gate trigger

TO-126K

1.CATHODE
2.ANODE
3.GATE

APPLICATIONS

- Pulse Igniter
- LED Controller
- Coffee Machine

MARKING

CS030E:Part Number

XXX:Internal Code

ABSOLUTE RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Test condition	Value	Unit
V_{DRM}/V_{RRM}	Repetitive peak off-state voltage	T_j=25℃	600	V
$I_{T(AV)}$	Average on-state current	TO-126K(T_C≤80℃)	2	A
$I_{T(RMS)}$	RMS on-state current	TO-126K(T_C≤80℃),Fig. 1,2	3	A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave，T_j(init)=25℃, tp=20ms; Fig. 3,5	20	A
I^2t	I^2t value	tp=10ms	2	A^2s
dI_T/dt	Critical rate of rise of on-state current	I_G=2*I_{GT}, tr≤10ns, F=120H$_Z$, T_j=110℃	50	A/μs
I_{GM}	Peak gate current	tp=20μs, T_j=110℃	0.2	A
$P_{G(AV)}$	Average gate power	T_j=110℃	0.1	W
T_{STG}	Storage temperature		-40~+150	℃
T_j	Operating junction temperature		-40~+110	

ELECTRICAL CHARACTERISTICS (T$_a$=25℃ unless otherwise specified)

Symbol	Parameter	Test condition	Value			Unit
			Min	Nom	Max	
I_{GT}	Gate trigger current	V_D=6V, R_L =100Ω, R_{GK} =1kΩ Fig. 6	10	-	200	µA
V_{GT}	Gate trigger voltage	V_D=12V, R_L =100Ω, R_{GK} =1kΩ	-	-	0.8	V
V_{GD}	Non-triggering gate voltage	V_D=1/2V_{DRM}, R_{GK}=1kΩ, T_j=110℃	0.2	-	-	V
I_H	Holding current	V_D=24V, R_{GK}=1kΩ, I_{TM}=4A, T_j=25℃, Fig. 6	-	1	3	mA
I_L	Latching current	I_G=1.2I_{GT}, Fig. 6	-	-	4	mA
dV_D/dt	Critical rate of rise of off-state	V_D=67%V_{DRM}, RGK=1kΩ,Tj=110℃	10	-	-	V/µs
V_{TM}	On-state Voltage	I_{TM}=4A , Fig. 4	-	-	1.5	V
I_{DRM} / I_{RRM}	Repetitive peak off-state current	V_D=V_{DRM}/V_{RRM}, T_j=25℃	-	-	5	µA
		V_D=V_{DRM}/V_{RRM},T_j=110℃	-	-	100	µA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case (AC)	TO-126K	7.2	℃/W
Rth (j-a)	Junction to ambient	TO-126K	100	℃/W

PART NUMBER

CS   030   E

Sensitive Gate SCRs

$I_{T(RMS)}$=3A

Package Type

CHARACTERISTICS CURVES

FIG.1: Maximum power dissipation versus RMS
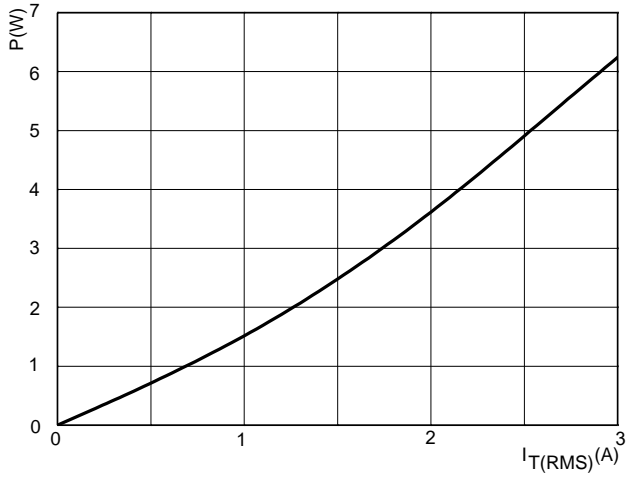on-state current (full cycle)

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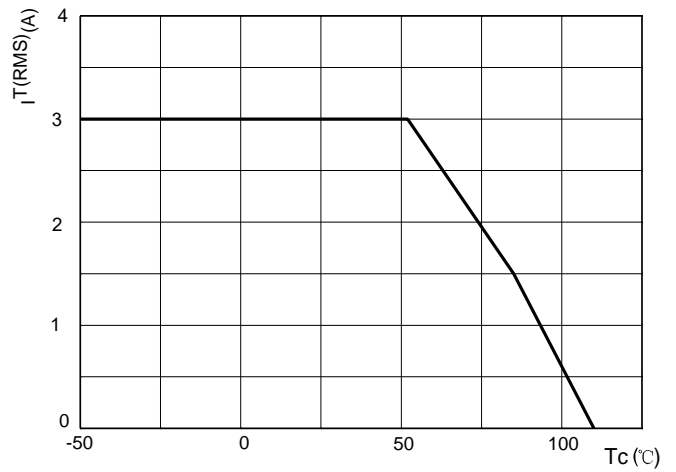(full cycle)

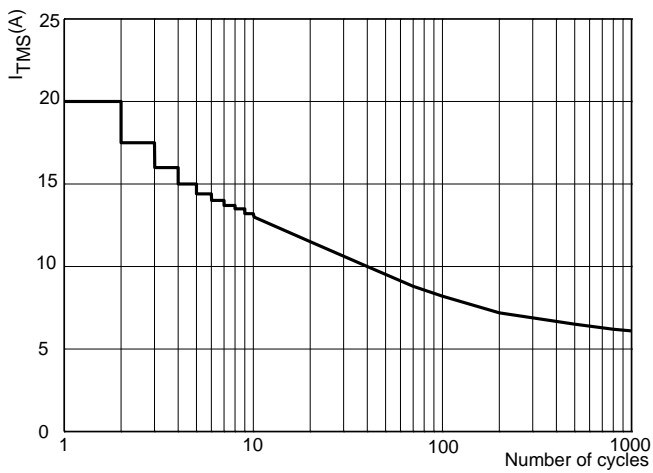FIG.3: Surge peak on-state current versus number of cycles

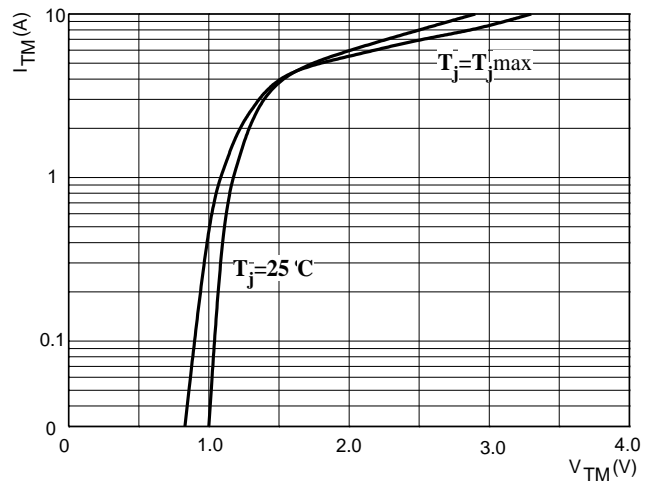FIG.4: On-state characteristics (maximum values)

FIG.5: Non-repetitive surge peak on-state current for
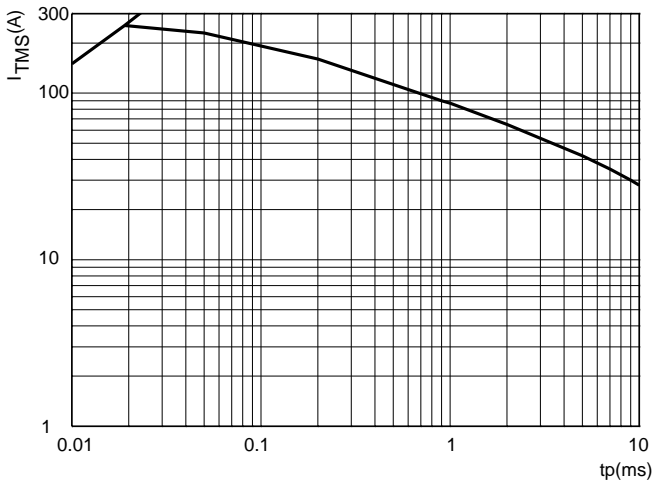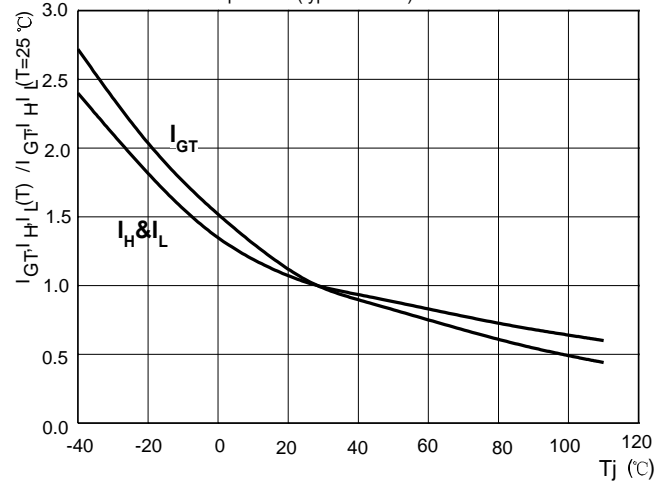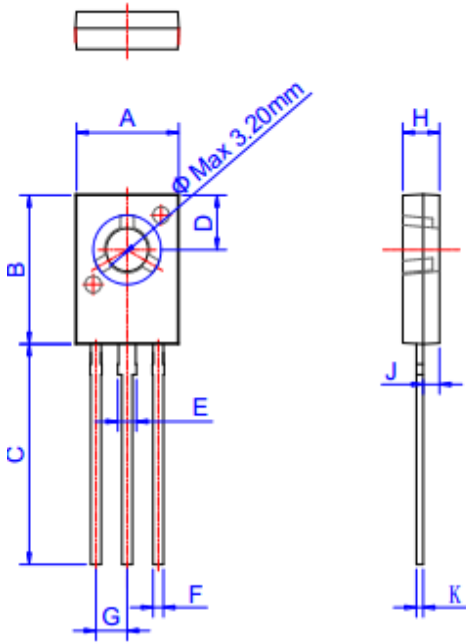a sinusoidal pulse with width tp < 10ms

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

TO-126K PACKAGE OUTLINE DIMENSIONS

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.40		7.80	0.291		0.307
B	10.6		11.2	0.417		0.441
C	15.3		16.3	0.602		0.642
D	3.90		4.10	0.154		0.161
E	1.17		1.47	0.046		0.058
F	0.66		0.86	0.026		0.034
G		2.29			0.090	
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024

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