

Description:

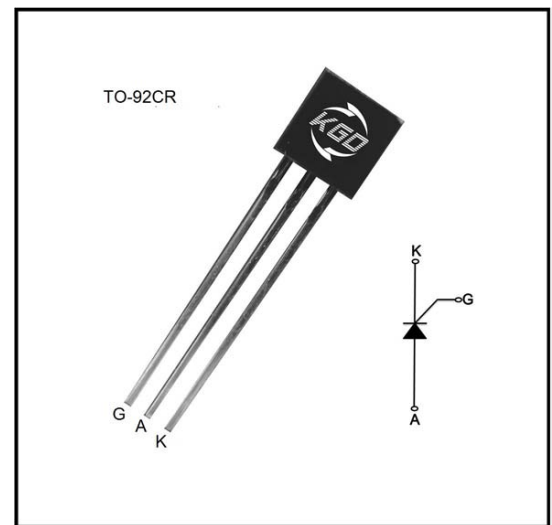
CR03AM series which use the specific design to achieve high Voltage blocking capability, Less-Temp dependent, high reliability and stability performance thus have high tolerance to external severe application environment such as EMC, Temp fluctuation etc are widely used in leakage protection application.

Features:

Blocking voltage to 600/900/1000/1100V

On-state RMS current to 0.47A

Non-repetitive peak on-state current to 19A

Absolute Maximum Ratings


Symbol	Parameter	Conditions	Value	Unit
V_{DRM}	Repetitive peak off-state voltage $T_J=25^\circ\text{C}$	CR03AM-12	600	V
		CR03AM-14	900	
		CR03AM-16	1000	
		CR03AM-18	1100	
V_{DSM}	Non repetitlve Surge Peak Off-state Voltag	$T_J=25^\circ\text{C}$	$V_{DRM}+100$	V
V_{RSM}	Non repetitlve Peak Reverse Voltag	$T_J=25^\circ\text{C}$	$V_{RSM}+100$	V
$I_{T(RMS)}$	RMS on-state current (half sine wave)	$T_c=47^\circ\text{C}$	0.47	A
$I_{T(av)}$	Average on-state current (half sine wave)	$T_c=47^\circ\text{C}$	0.3	A
I_{TSM}	Non-repetitive surge peak On-state current (half sine cycle, $T_J=25^\circ\text{C}$)	$f=50\text{Hz}, t=10\text{ms}$	19	A
		$f=60\text{Hz}, t=8.3\text{ms}$	20	
I^2t	I^2t Value for fusing	$t_p=10\text{ms}$	1.6	A^2S
I_{GM}	Peak gate current	$t_p=20\mu\text{s}, T_J=110^\circ\text{C}$	0.3	A
P_{GM}	Peak gate power		0.5	W
$P_{G(AV)}$	Average gate power dissipation	$T_J=110^\circ\text{C}$	0.1	W
T_{STG}	Storage temperature		-40 150	$^\circ\text{C}$
T_J	Junction temperature		-40 110	$^\circ\text{C}$

● Electrical Characteristics

Symbol	Conditions	Value			Unit	
		MIN	TYP	MAX		
I_{GT}	$V_D=6V, R_L=100\Omega$	10	/	140	μA	
V_{GT}		/	0.6	0.8	V	
V_{GD}	$V_D=V_{DRM}, R_L=3.3K\Omega, R_{GK}=1K\Omega, T_J=110^\circ C$	0.2	/	/	V	
I_L	$I_G=1mA, R_{GK}=1K\Omega$	/	/	5	mA	
I_H	$I_T=50mA, R_{GK}=1K\Omega$	/	/	3	mA	
V_{TM}	$I_T=3A, tp=380\mu s, T_J=25^\circ C$	/	/	1.7	V	
I_{DRM}	$V_D=V_{DRM}, R_{GK}=1K\Omega$	$T_J=25^\circ C$	/	/	5	μA
		$T_J=110^\circ C$	/	/	0.2	mA
I_{RRM}	$V_R=V_{RRM}, R_{GK}=1K\Omega$	$T_J=25^\circ C$	/	/	5	μA
		$T_J=110^\circ C$	/	/	0.2	mA
dv/dt	$V_{DM}=60\%V_{DRM}, R_{GK}=1K\Omega, T_J=110^\circ C$	50	100	/	V/ μs	

● I_{GT} Class

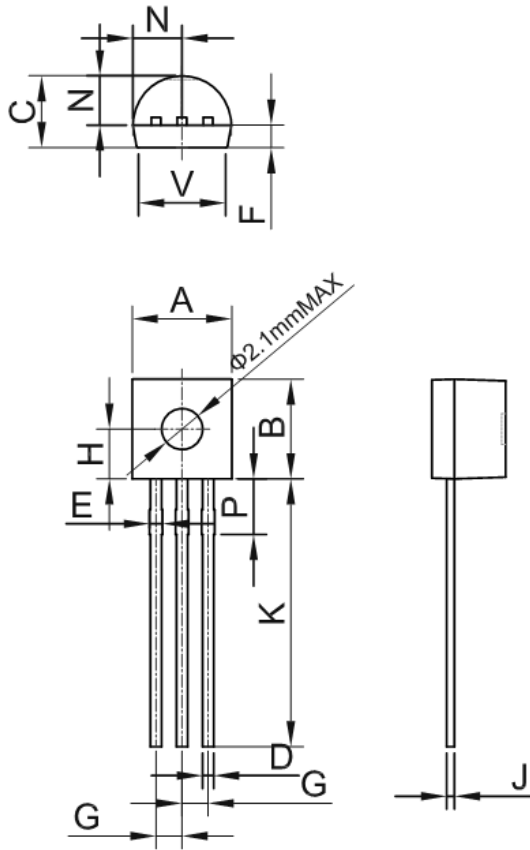
Item	A	B	C	D	E	F
$I_{GT}(\mu A)$	10-30	20-50	40-100	10-50	20-140	30-60

● Thermal Characteristics

Symbol	Parameter		Numerical(MAX)	Unit
$R_{th(j-c)}$	Junction to case	TO-92	70	$^\circ C/W$
$R_{th(j-a)}$	Junction to ambient	TO-92	180	$^\circ C/W$

● Package Outline Dimensions

TO-92CR Package



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.56	-	5.0	0.179	-	0.197
B	4.56	-	5.0	0.179	-	0.197
C	3.3	-	3.6	0.130	-	0.142
D	0.5	-	0.6	0.020	-	0.024
E	0.6	-	0.8	0.024	-	0.032
F	-	1.1	-	-	0.043	-
G	-	1.25	-	-	0.049	-
H	-	2.45	-	-	0.096	-
J	0.38	-	0.5	0.015	-	0.020
K	11.5	13	14.2	0.453	0.512	0.559
N	-	2.4	-	-	0.945	-
P	2.5	-	2.9	0.098	-	0.114
V	-	4.3	-	-	0.169	-

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

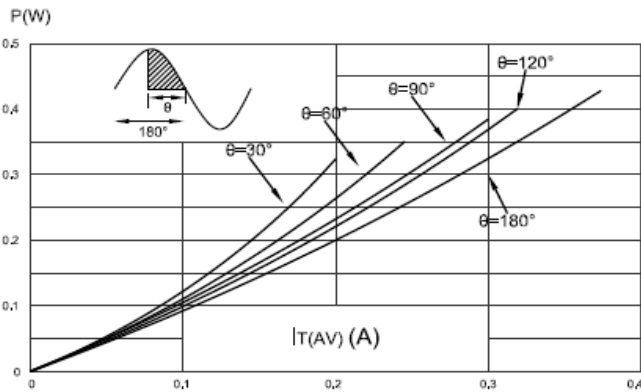


FIG.2: RMS on-state current versus case temperature(full cycle)

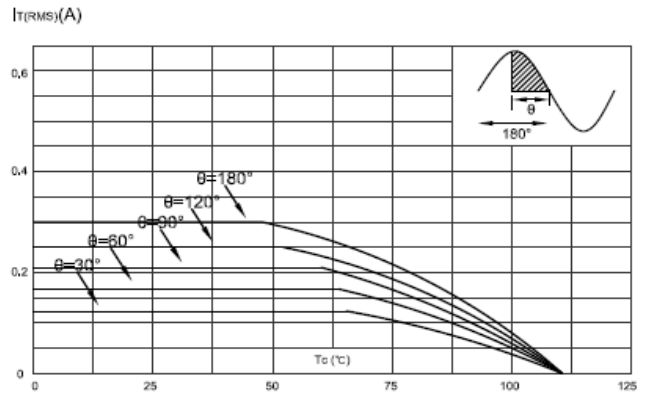


FIG.3: On-state characteristics (maximum values).

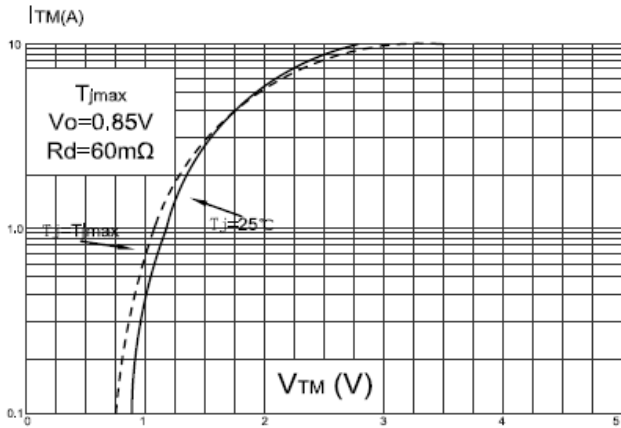


FIG.4: Surge peak on-state current versus number of cycles.

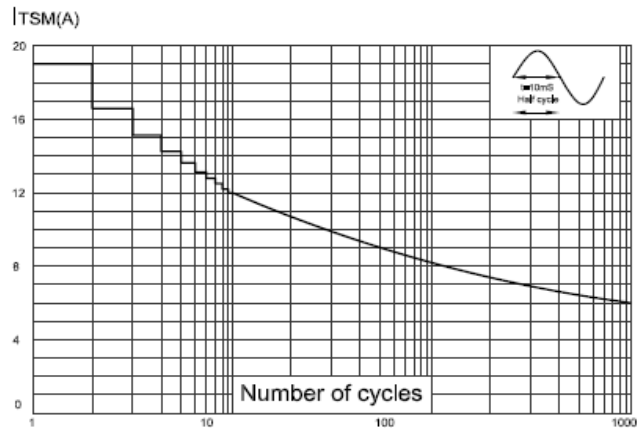


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

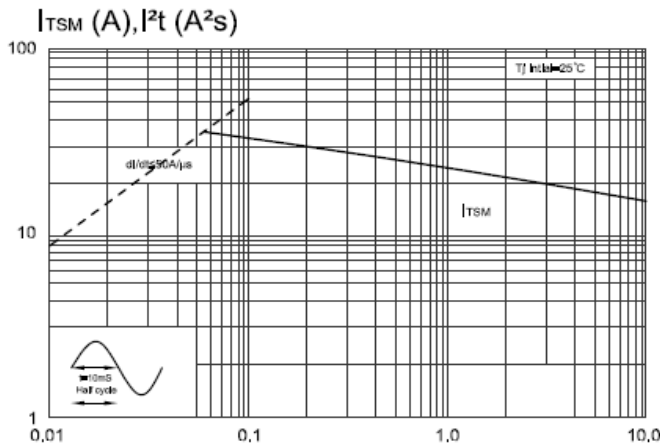


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)

