



CR03AM-16 1.25A Sensitive SCR

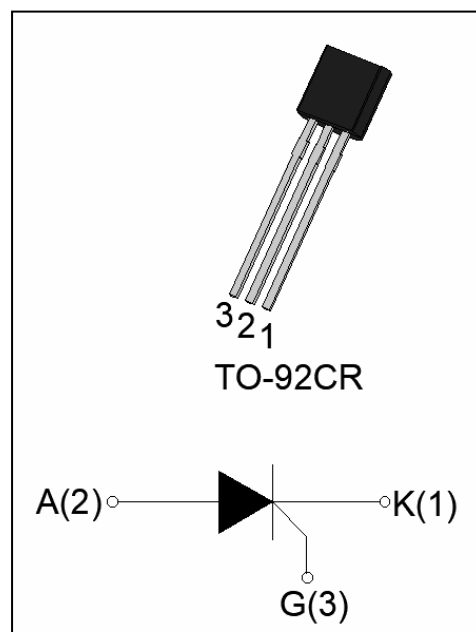
Rev.A.2.2

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The CR03AM-16 SCR provides high dV/dt rate with strong resistance to electromagnetic interface. It is especially recommended for use on residual current circuit breaker, straight hair, igniter etc. Package TO-92CR is RoHS compliant.

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Symbol	Value	Unit
$I_{T(RMS)}$	1.25	A
V_{DRM} / V_{RRM}	1250	V
I_{GT}	≤ 200	μA



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Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-110	
Repetitive peak off-state voltage ($T_j=25^\circ C$)	V_{DRM}	1250	V
Repetitive peak reverse voltage ($T_j=25^\circ C$)	V_{RRM}	1250	V
Average on-state current ($T_c 042^\circ C$)	$I_{T(AV)}$	0.8	A
RMS on-state current ($T_c 042^\circ C$)	$I_{T(RMS)}$	1.25	A
Non repetitive surge peak on-state current ($t_p=10ms, T_j=25^\circ C$)	I_{TSM}	25	A
Non repetitive surge peak on-state current ($t_p=8.3ms, T_j=25^\circ C$)		28	
I^2t value for fusing ($t_p=10ms, T_j=25^\circ C$)	I^2t	3.1	A^2s
Critical rate of rise of on-state current ($I_G=2 I_{GT}, f=100Hz, T_j=110^\circ C$)	di/dt	100	$A/\mu s$
Peak gate current ($t_p=20\mu s, T_j=110^\circ C$)	I_{GM}	1.2	A
Average gate power dissipation ($T_j=110^\circ C$)	$P_{G(AV)}$	0.2	W

Peak gate power	P_{GM}	2	W
Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive,off-state;FIG.7)	V_{pp}	1	kV

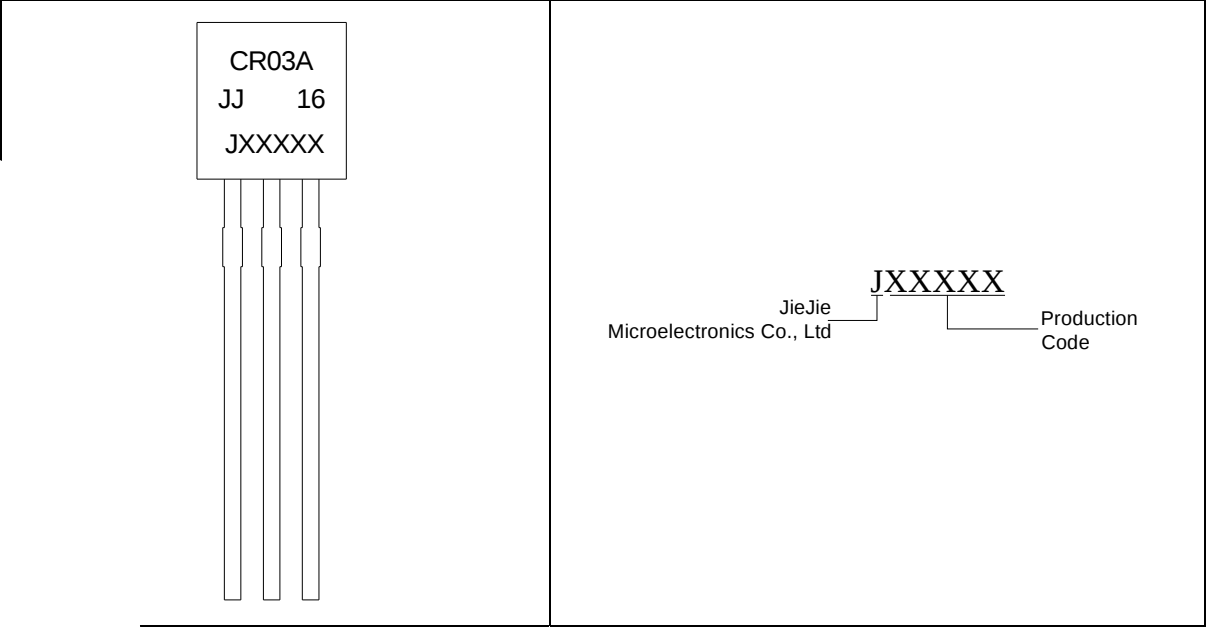
$\geq 25^{\circ}\text{C}$, Z_{th} (unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	-	50	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	$V_D=V_{DRM}$ $T_j=110^{\circ}\text{C}$	0.2	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	5	mA
I_H	$I_T=0.05\text{A}$	-	-	4	mA
dV/dt	$V_D=800\text{V}$ $T_j=110^{\circ}\text{C}$ $R_{GK}=1\text{k}\Omega$	200	-	-	$\text{V}/\mu\text{s}$
	$V_D=800\text{V}$ $T_j=110^{\circ}\text{C}$ $R_{GK}=220\Omega$	1000	-	-	
t_{on}	$I_G=10\text{mA}$ $I_A=20\text{mA}$ $I_R=2\text{mA}$ $T_j=25^{\circ}\text{C}$	-	2	-	μs
t_{off}		-	50	-	μs

$\geq 25^{\circ}\text{C}$, Z_{th} (unless otherwise specified)

Symbol	Parameter	Value(MAX.)	Unit
V_{TM}	$I_T=2\text{A}$ $t_p=380\mu\text{s}$ $T_j=25^{\circ}\text{C}$, $\Delta T=0^{\circ}\text{C}$ @ $v_{DS}=10\text{V}$ $f_{sw}=1\text{kHz}$ $S_{th}=1.3^{\circ}\text{C}/\text{W}$	1.3	V

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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 ($di/dt < 100\text{A}/\mu\text{s}$)

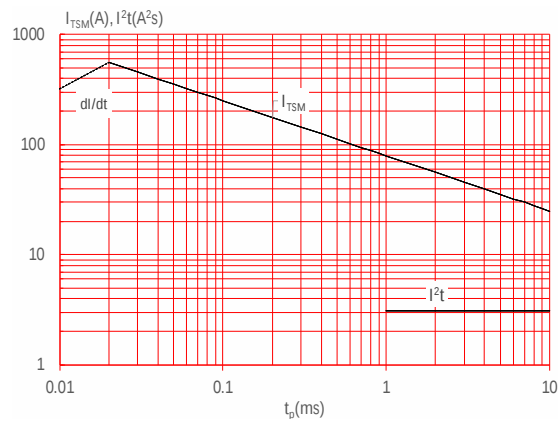


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

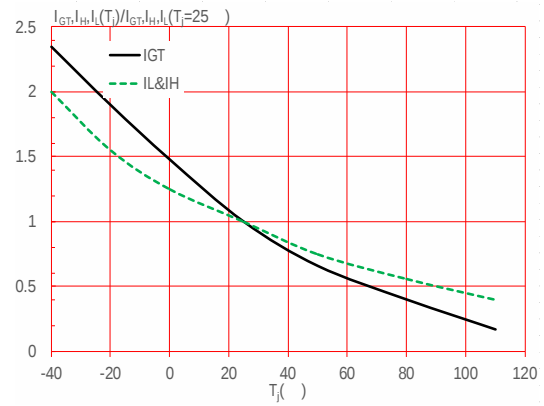
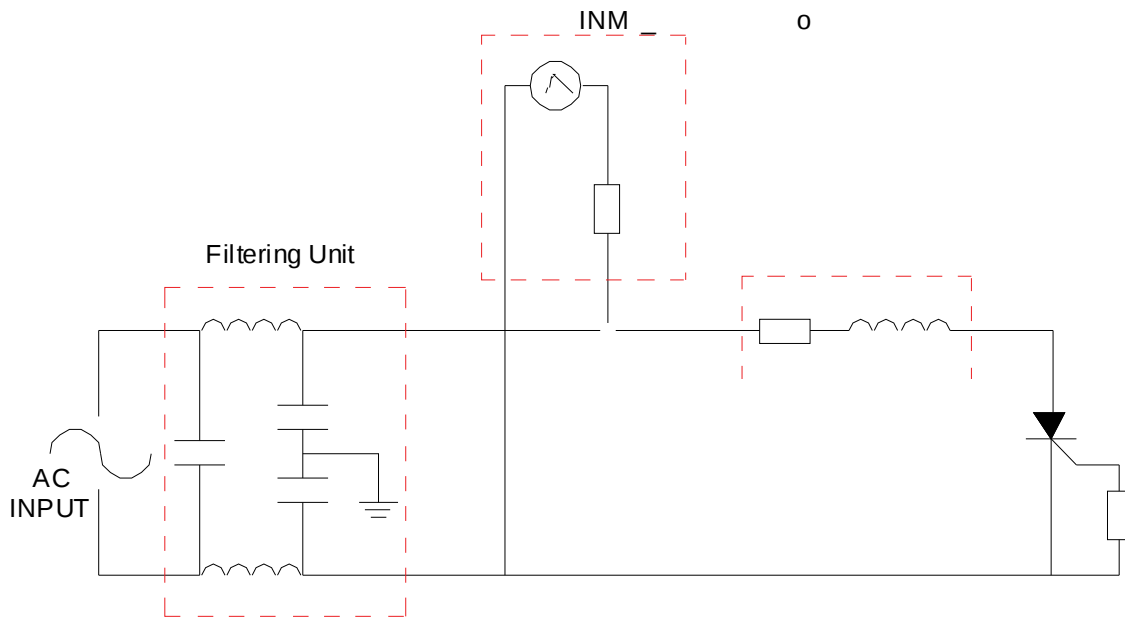


FIG.7 ÖTest circuit for inductive and resistive loads to IEC-61000-4-5 standards.

IEC61000-4-5 Standards
Surge Generator



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Order code	Voltage V _{DRM} /V _{RRM} (V)	IGT(μA)	Package	Base qty. (pcs)	Delivery mode
CR03AM-16	1250	≤200	TO-92CR	1,000	Bulk Pack
CR03AM-16-TR				2,000	Tape & Reel

CR03AM-16

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