

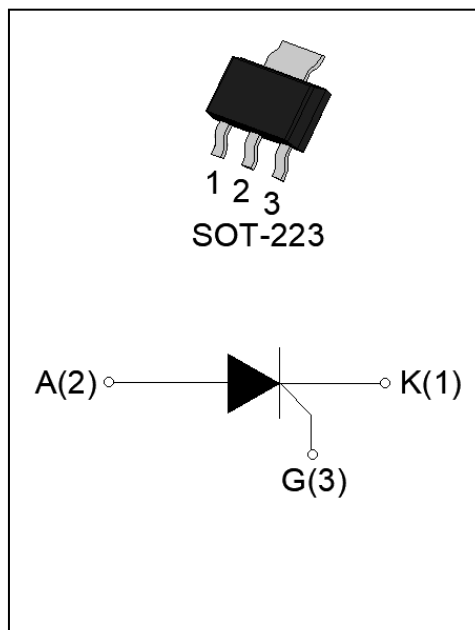


## CR03AM-16 1.25A Sensitive SCR

Rev.A.1.0

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 SOT-223 is RoHS compliant.

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



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 ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	1250	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	1250	V
Average on-state current ( $T_c = 80^\circ\text{C}$ )	$I_{T(AV)}$	0.8	A
RMS on-state current ( $T_c = 80^\circ\text{C}$ )	$I_{T(RMS)}$	1.25	A
Non repetitive surge peak on-state current ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	25	A
Non repetitive surge peak on-state current ( $t_p=8.3\text{ms}$ , $T_j=25^\circ\text{C}$ )		28	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	3.1	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 I_{GT}$ , $f=100\text{Hz}$ , $T_j=110^\circ\text{C}$ )	$di/dt$	100	$\text{A/s}$
Peak gate current ( $t_p=20\text{ }\mu\text{s}$ , $T_j=110^\circ\text{C}$ )	$I_{GM}$	1.2	A
Average gate power dissipation ( $T_j=110^\circ\text{C}$ )	$P_{G(AV)}$	0.2	W

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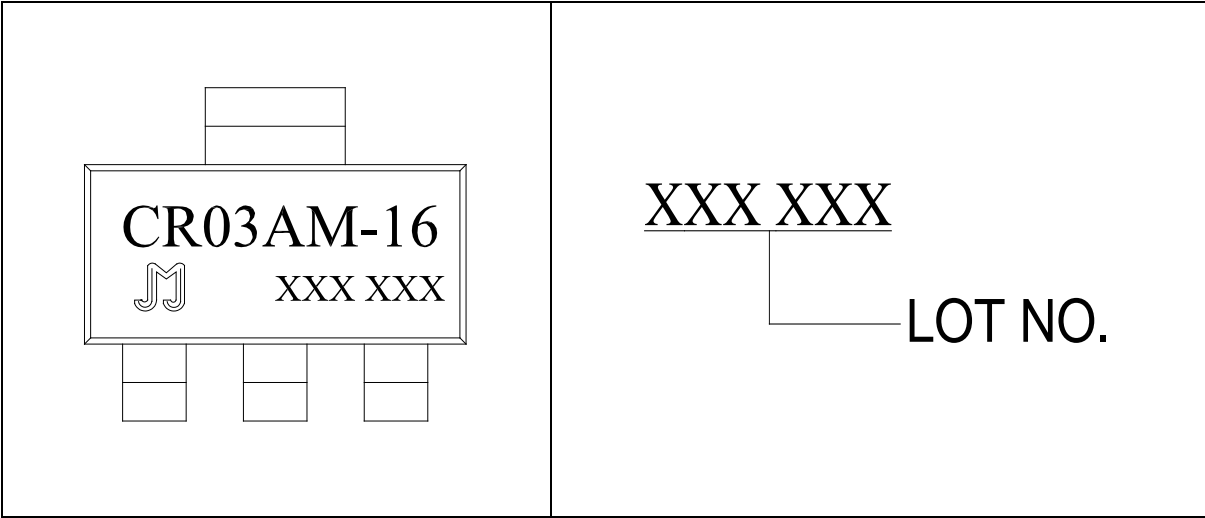
**CR03AM-16**

Peak gate power	$P_{GM}$	2	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive,off-state;FIG.8)	$V_{pp}$	1	kV

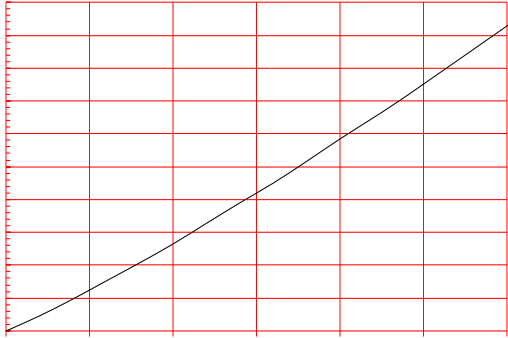
unless otherwise specified

Symbol	Test Condition	Value		Unit
		MIN.	TYP.	

**P.pp**



**FIG.1** Maximum power dissipation versus RMS on-state current



**FIG.2:** RMS on-state current versus case temperature



**FIG.3:** R

FIG.5: On-state characteristics

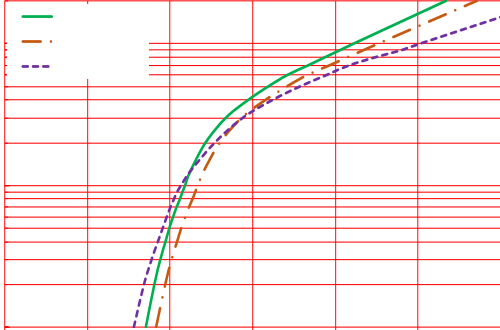


FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $dI/dt < 10$ )

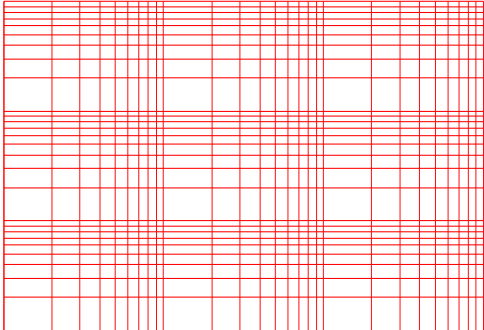
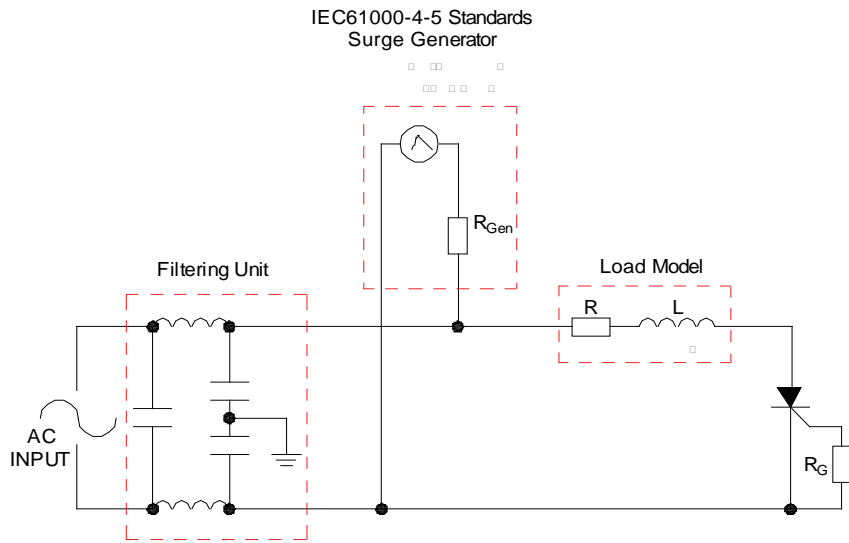
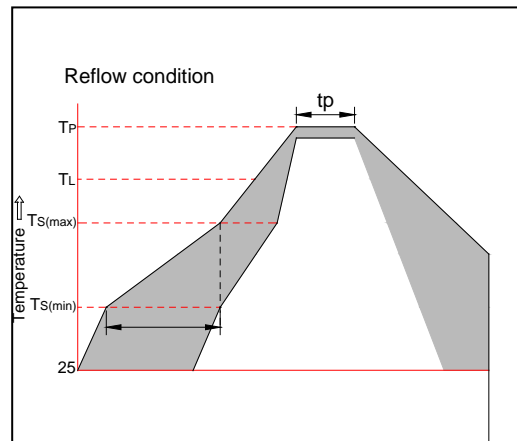


FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150
	-Temperature Max ( $T_{s(max)}$ )	+200
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3 /sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3 /sec. Max
Reflow	-Temperature( $T_L$ ) (Liquidus)	+217
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)
Time within 5° of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6 /sec. Max
Time 25° to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260

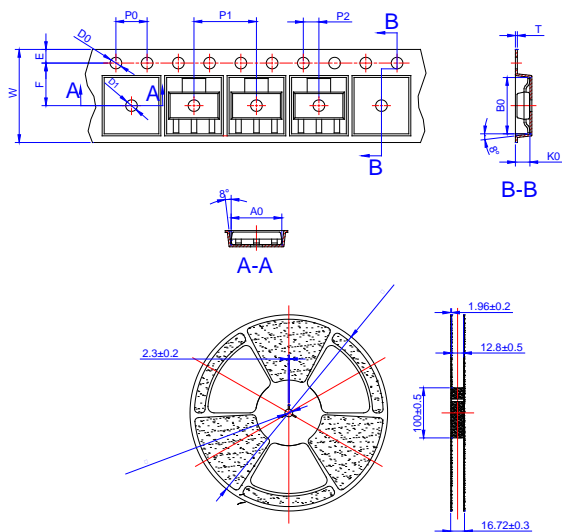


Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT )	Package	Base qty. (pcs)	Delivery mode
CR03AM-16	1250	200	SOT-223	4,000	Tape & Reel

#### Document Revision History

Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059		0.071
A1	0.01	0.06	0.10		0.002	
B	2.9	3.0	3.1	0.114		0.122
B1	0.6	0.7	0.8	0.024		0.031
C	0.22	0.26	0.32	0.009		0.013
D	6.3	6.5	6.7	0.248		0.264
E	3.3	3.5	3.7	0.130		0.146
F	4.4					
F1	2.2Min.3.7		0.130	0.1460.D2		
G						
H	1.5		2.0	0.059		0.079
J	6.7		7.3	0.264		0.287
K						




Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	-	-	12.30	-	-	0.482
E	1.65	1.75	1.85	0.065	0.069	0.073
F	5.45	5.50	5.55	0.215	0.217	0.219
D0	1.50	1.55	1.60	0.059	0.061	0.063
D1	1.50	-	-	0.059	-	-
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.95	2.00	2.05	0.077	0.079	0.081
10P0	39.80	40.00	40.20	1.567	1.575	1.583
A0	6.85	6.95	7.05	0.269	0.273	0.276
B0	7.15	7.25	7.35	0.280	0.284	0.288
K0	1.95	2.05	2.15	0.076	0.080	0.084
T	0.20	0.25	0.30	0.008	0.010	0.012

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
SOT-223	TAPING	4,000	40,000	13 inch



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