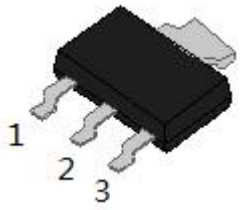
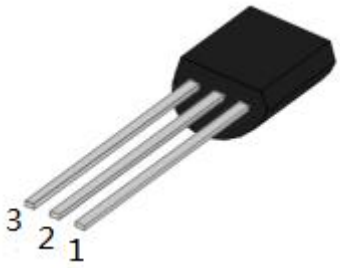
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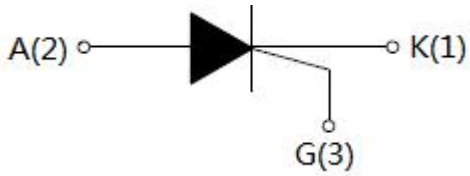
RoHS

SX014 Series Sensitive gate SCRs

Description

The SX014 SCR series provide high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc.

SX014V	SX014CR
	
SOT-223	TO-92



Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	T_{stg}	-	-40-150	℃
Operating junction temperature range	T_j	-	-40-110	℃
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	-	900	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	-	900	V
RMS on-state current	$I_{(TRMS)}$	TO-92CR(T_C=50℃) SOT-223(T_C=75℃)	1.25	A
Non repetitive surge peak on-state current (tp=10ms)	I_{TSM}	-	20	A
I^2t value for fusing (tp=10ms)	I^2t	-	2	A^2s
Critical rate of rise of on-state current	dI/dt	-	50	A/μs
Peak gate current (tp=20μs, T_j=110℃)	I_{GM}	-	0.2	A
Peak gate power (tp=20μs, T_j=110℃)	P_{GM}	-	0.5	W
Average gate power dissipation(T_j=110℃)	$P_{G(AV)}$	-	0.1	W

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RoHS

Electrical Characteristics(Tj=25℃ unless otherwise specified)

Symbol	Condition	Min.	Typ.	Max.	Units
I_{GT}	V_D=12V R_L=33Ω	20	50	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	V_D=V_{DRM} T_j=110℃	0.2	-	-	V
I_L	I_G=1.2 I_{GT}	-	-	5	mA
I_H	I_T=0.05A	-	-	4	mA
dV/dt	V_D=537V T_j=110℃ R_{GK}=1KΩ	200	-	-	V/μs

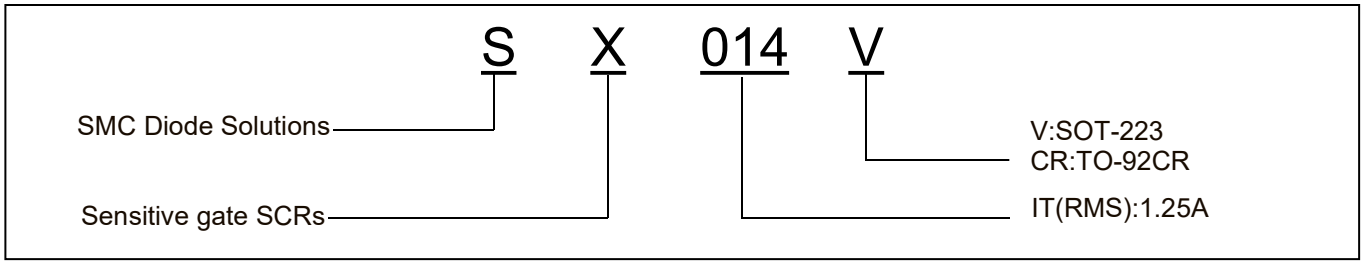
Static Characteristics

Symbol	Condition	Max.	Units
V_{TM}	I_T=4A tp=380μs,Tj=25℃	1.5	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}, Tj=25℃	5	μA
I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}, Tj=110℃	100	μA

Thermal Resistances

Symbol	Condition		Value	Units
Rth(j-c)	Junction to case	TO-92CR	57	℃/W
		SOT-223	20	

Ordering Information



Device	Package	Shipping
SX014V	SOT-223	8000pcs/ reel
SX014VTR	SOT-223	8000pcs/ reel
SX014CR	TO-92CR	2000pcs/ reel
SX014CRTR	TO-92CR	2000pcs/ reel

Ratings and Characteristics Curves

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

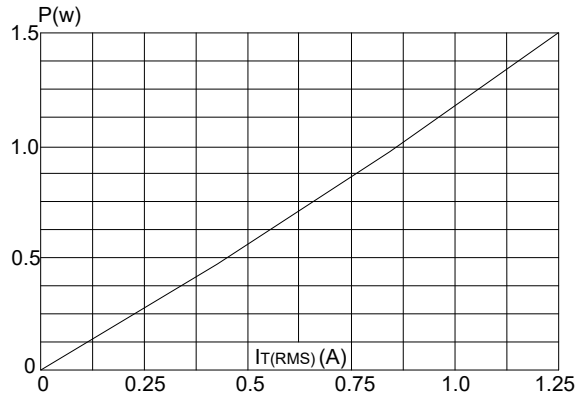


FIG.2: RMS on-state current versus case temperature

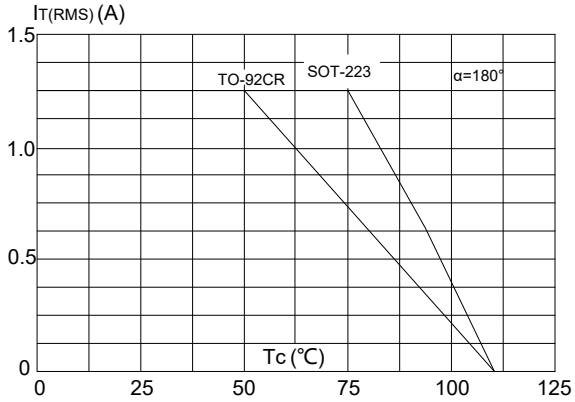


FIG.3: Surge peak on-state current versus number of cycles

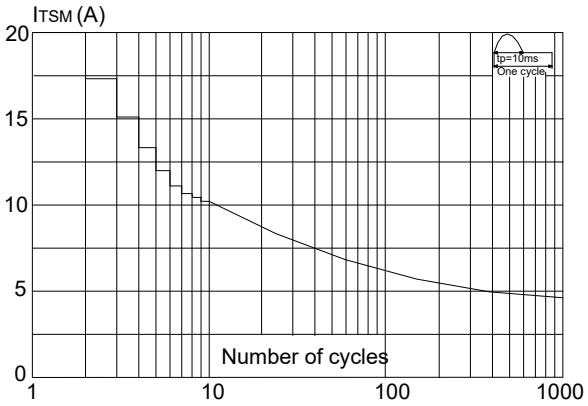


FIG.4: On-state characteristics (maximum values)

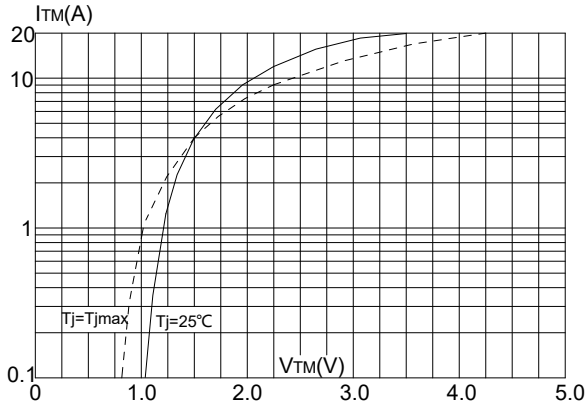


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 50A/μs)

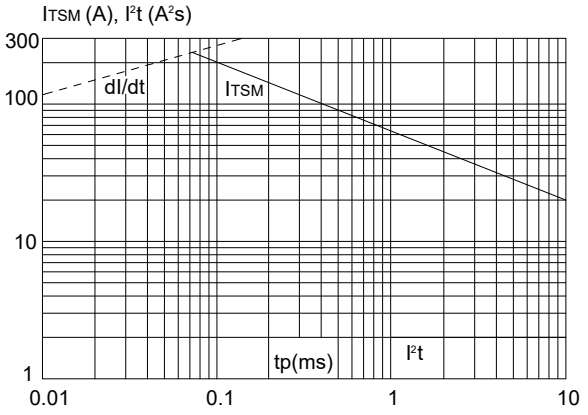
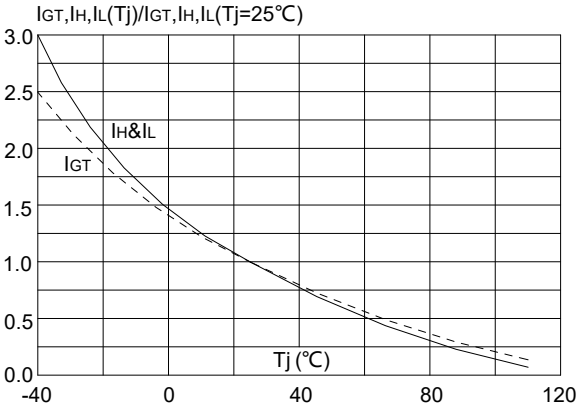


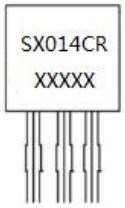
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



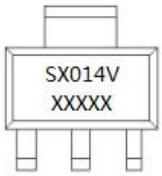
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SX014CR

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Marking Diagram



SX014CR

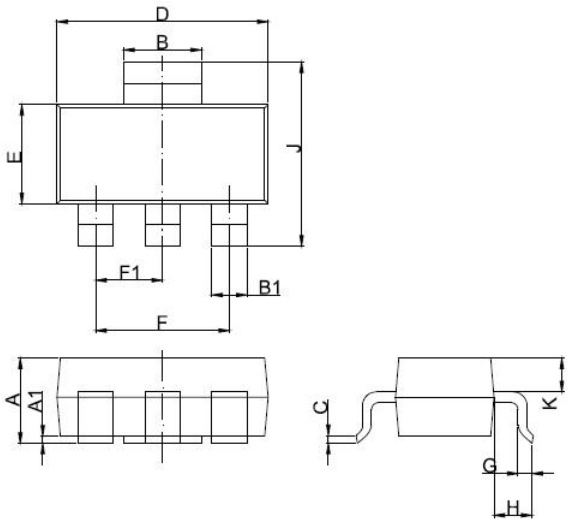


SX014V

Where XXXXX is YYWWL

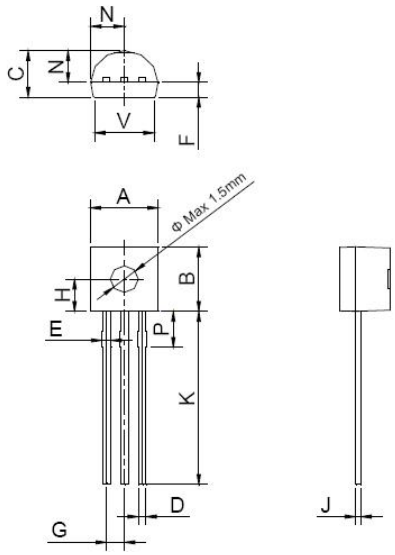
S	= SMC
X	= Sensitive gate SCRs
014	= Forward Current (1A)
V/CR	= Package type
YY	= Year
WW	= Week
L	= Lot Number

Mechanical Dimensions SOT-223



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.50	1.5	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039

Mechanical Dimensions TO-92CR



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.56	-	5.00	0.179	-	0.197
B	4.56	-	5.00	0.179	-	0.197
C	3.30	-	3.60	0.130	-	0.142
D	0.50	-	0.60	0.020	-	0.024
E	0.60	-	0.80	0.024	-	0.032
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.43	-	-	0.096	-
J	0.36	-	0.50	0.014	-	0.020
K	11.50	13.00	14.20	0.453	0.512	0.559
N	2.04	-	2.66	0.080	-	0.105
P	2.50	-	2.90	0.098	-	0.114
V	-	-	4.30	-	-	0.169

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