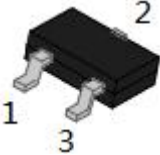
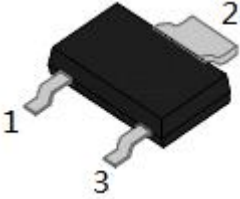
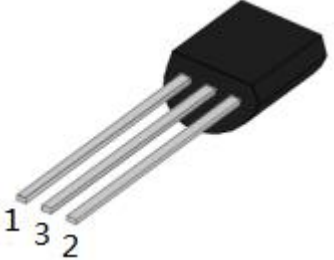
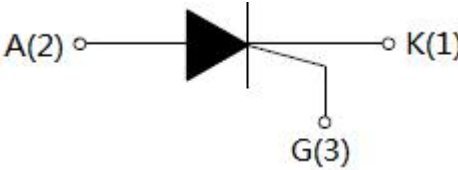


SX008 Series 0.8A Sensitive SCRs

Description

The SX008 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.

SX008L 	SX008N2 	SX008U 
SOT-23-3L	SOT-89-2L	TO-92
		

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	T_J	-	-40 to +110	°C
Operating junction temperature range	T_{stg}	-	-40 to +150	°C
Repetitive peak off-state voltage	V_{DRM}	-	600	V
Repetitive peak reverse voltage	V_{RRM}	-	600	V
RMS on-state current	$I_{(TRMS)}$	TO-92/ SOT-23-3L(TC=65°C)	0.8	A
		SOT-89-2L(TC=70°C)		
Non repetitive surge peak on-state current(tp=10ms)	I_{TSM}	-	8	A
I ² t value for fusing (tp=10ms)	I^2t	-	0.32	A ² S
Critical rate of rise of on-state current	di/dt	-	50	A/us
Peak gate current (tp=20 μs, T _J =110°C)	I_{GM}	-	0.2	A
Peak gate power (tp=20 μs, T _J =110°C)	P_{GM}	-	0.5	W
Average gate power dissipation(T _J =110°C)	$P_{G(AV)}$	-	0.1	W

Electrical Characteristics (Tj=25°C 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} Tj=110°C	0.2	-	-	V
I _L	I _G =1.2 I _{GT}	-	-	6	mA
I _H	I _T =0.05A	-	-	5	mA
dv/dt	V _D =2/3V _{DRM} Tj=110°C R _{GK} =1KΩ	100	-	-	V/μs

* Pulse width < 300 μs, duty cycle < 2%

Static Characteristics

Symbol	Condition	Max.	Units
V _{TM}	I _T =1.1A t _p =380μs, Tj=25°C	1.5	V
I _{DRM}	V _D =V _{DRM} V _R =V _{RRM} , Tj=25°C	5	uA
I _{RRM}	V _D =V _{DRM} V _R =V _{RRM} , Tj=110°C	100	uA

Thermal Resistances

Symbol	Condition	Value	Units
R _{th(j-c)}	Junction to case	TO-92/ SOT-23-3L	75
		SOT-89-2L	38

Ordering Information

SMC Diode Solutions	<u>S</u>	<u>X</u>	<u>008</u>	<u>U</u>	N2:SOT-89-2L U:TO-92 L:SOT-23-3L
Sensitive gate SCRs					IT(RMS):0.8A

Device	Package	Shipping
SX008L	SOT-23-3L	30000pcs/ reel
SX008LTR	SOT-23-3L	30000pcs/ reel
SX008N2	SOT-89-2L	8000pcs/ reel
SX008N2TR	SOT-89-2L	8000pcs/ reel
SX008U	TO-92	2000pcs/ reel
SX008UTR	TO-92	2000pcs/ reel

Ratings and Characteristics Curves

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

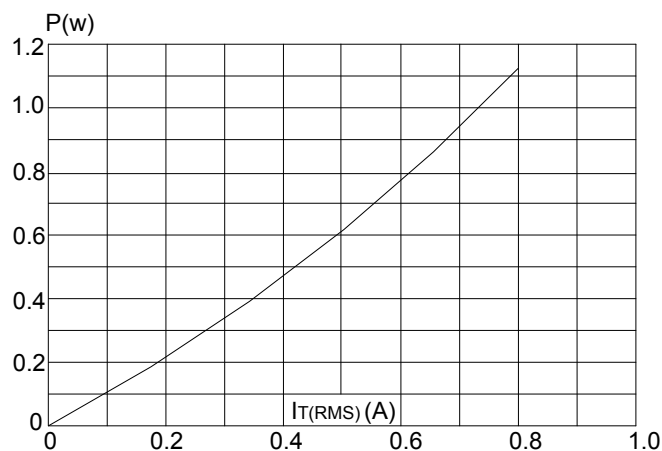


FIG.2: RMS on-state current versus case temperature

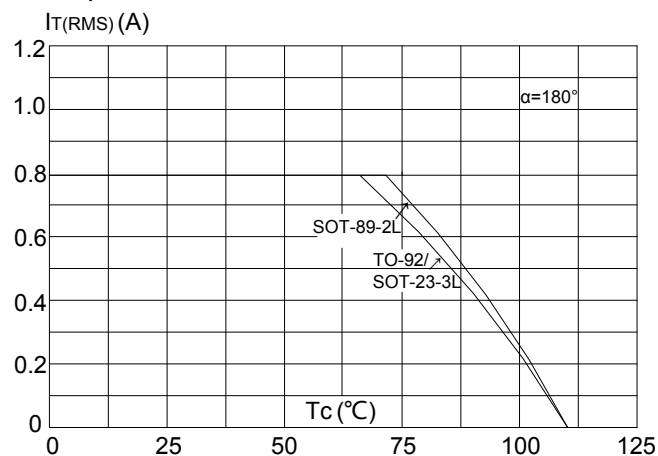


FIG.3: Surge peak on-state current versus number of cycles

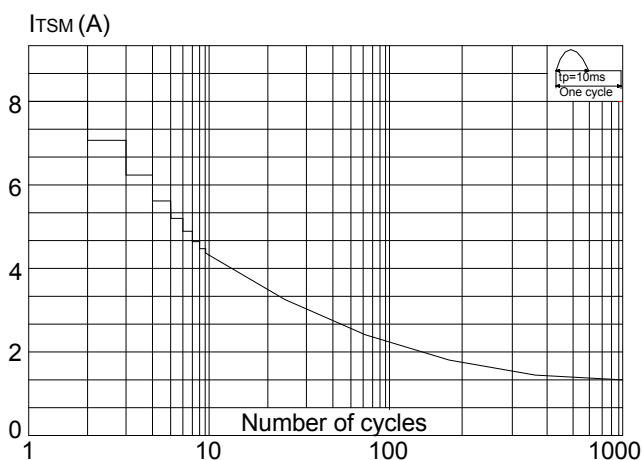
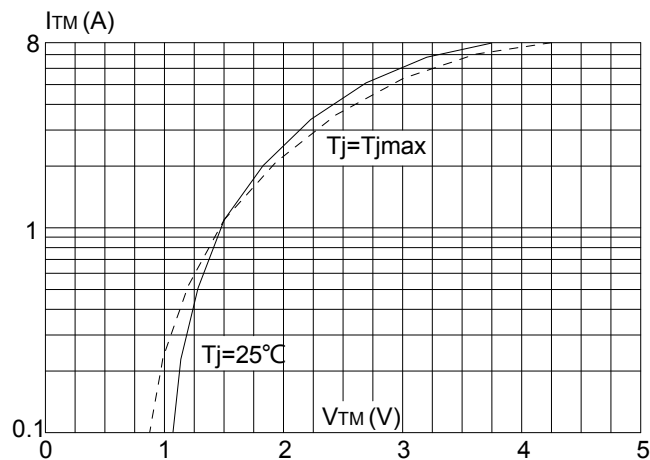


FIG.4: On-state characteristics (maximum values)



Technical Data
Data Sheet N2027, Rev.-



FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $\int i^2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

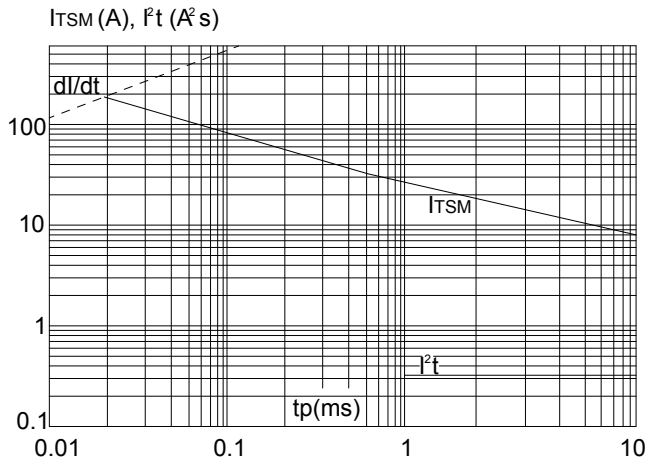
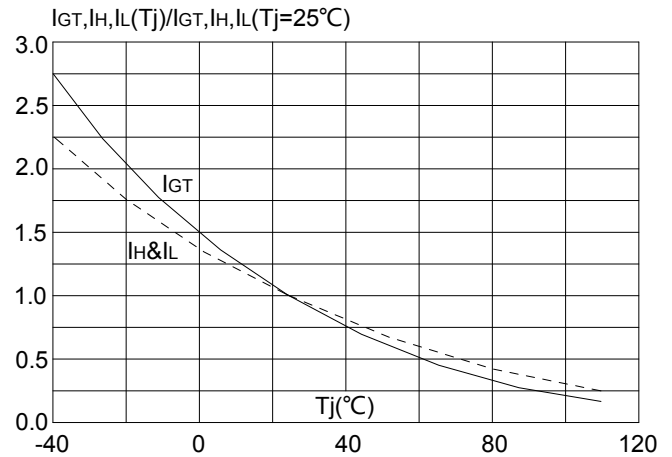
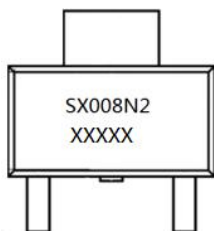


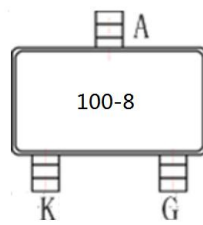
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



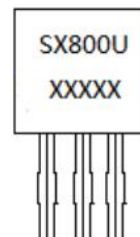
Marking Diagram



SX008N2



SX008L

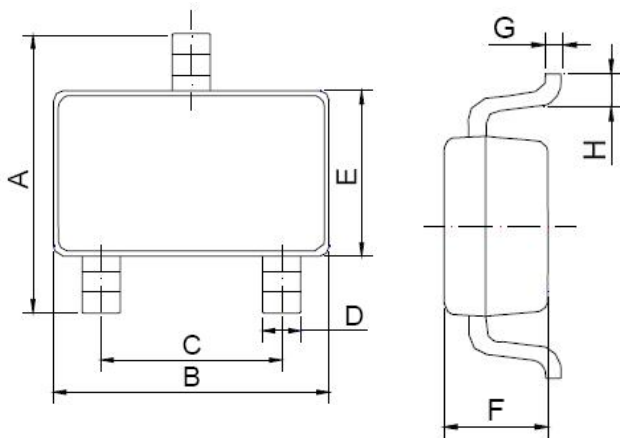


SX008U

Where XXXXX is YYWWL

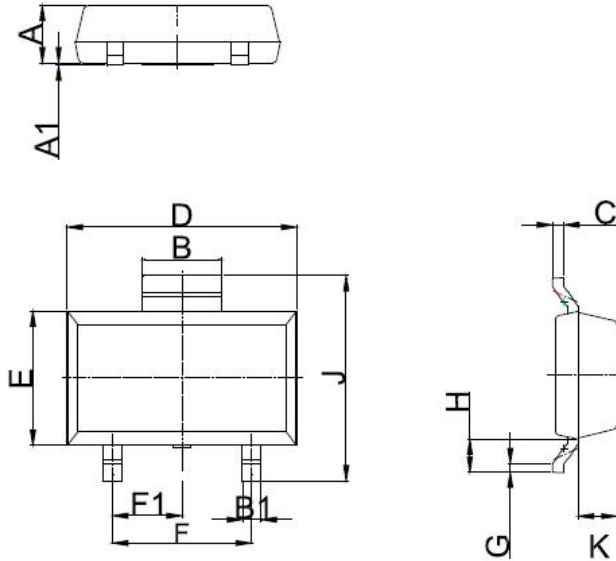
S = SMC
X = Sensitive gate SCRs
008 = Forward Current (0.8A)
N2/U = Package type
YY = Year
WW = Week
L = Lot Number

Mechanical Dimensions SOT-23-3L



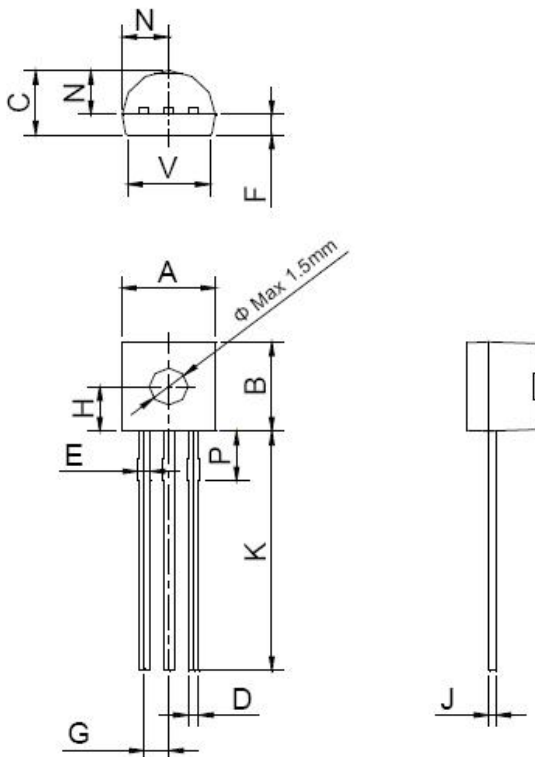
SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.65	2.80	2.95	0.104	0.110	0.116
B	2.82	2.92	3.02	0.111	0.115	0.119
C	1.80	1.90	2.00	0.071	0.075	0.079
D	0.30	0.35	0.50	0.012	0.014	0.020
E	1.50	1.60	1.70	0.059	0.063	0.067
F	1.07	1.17	1.27	0.042	0.046	0.050
G	0.05	0.15	0.25	0.002	0.006	0.010
H	0.25	0.40	0.55	0.010	0.016	0.022

Mechanical Dimensions SOT-89-2L



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.3	1.4	1.5	0.051	0.055	0.059
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	1.6	1.7	1.8	0.063	0.067	0.071
B1	0.3	0.4	0.5	0.012	0.016	0.020
C	0.22	0.254	0.32	0.009	0.010	0.013
D	4.75	4.95	5.15	0.187	0.195	0.203
E	2.75	2.95	3.15	0.108	0.116	0.124
F		3.0			0.118	
F1		1.5			0.059	
G	0.2	0.3	0.4	0.008	0.012	0.016
H	0.58	0.78	0.98	0.023	0.031	0.039
J	4.3	4.5	4.7	0.169	0.177	0.185
K		0.88			0.035	

Mechanical Dimensions TO-92



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45	-	5.20	0.175	-	0.205
B	4.32	-	5.33	0.170	-	0.210
C	3.18	-	4.19	0.125	-	0.165
D	0.407	-	0.533	0.016	-	0.021
E	0.60	-	0.80	0.024	-	0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36	-	0.50	0.014	-	0.020
K	12.70	-	15.0	0.500	-	0.591
N	2.04	-	2.66	0.080	-	0.105
P	1.86	-	2.06	0.073	-	0.081
V	-	-	4.3	-	-	0.169

Technical Data
Data Sheet N2027, Rev.-



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