

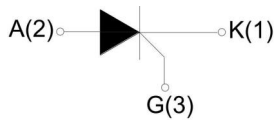
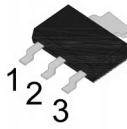

S0102 1A SCRs

FEATURES

- Sensitive gate
- Direct triggering from low power drivers and logic ICs
- Surface mountable package

APPLICATIONS

- Ground Fault Circuit Interrupters (GFCI)
- General purpose switching and phase control
- Ignition circuits, CDI
- Motor control - e.g. small kitchen appliances

Parameters Summary	
VD/VR:800V IT(RMS):1A IGT :200μA	
	 SOT-223  TO-92



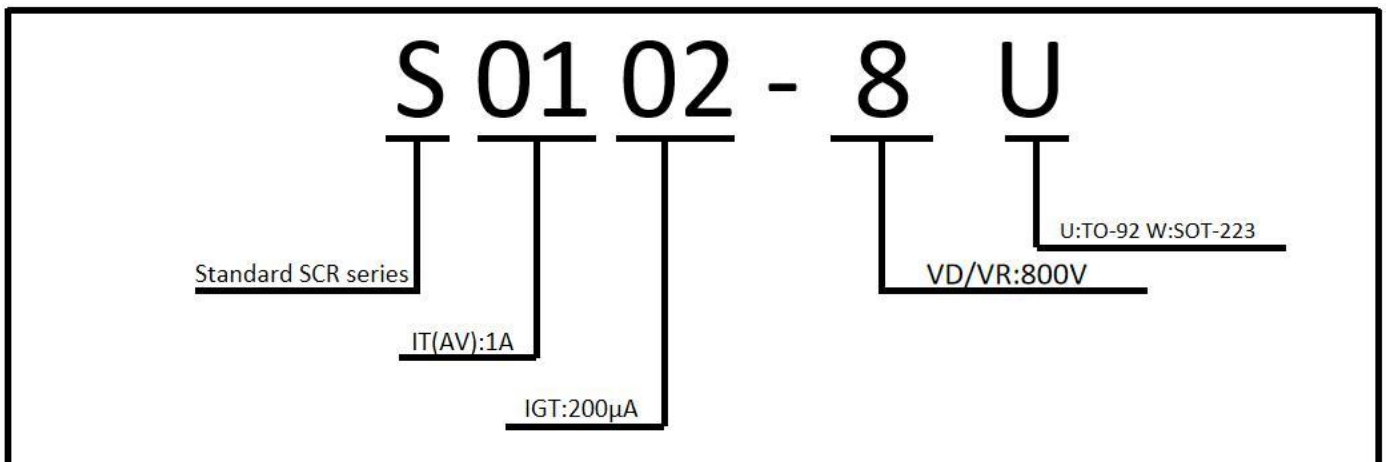
ABSOLUTE MAXIMUM RATINGS			
Parameter	Symbol	Value	Unit
Storage junction temperature range	T _{stg}	-40 ~150	°C
Operating junction temperature range	T _j	-40~125	°C
repetitive surge peak Off-state voltage	V _{DRM}	800	V
repetitive peak reverse voltage	V _{RRM}	800	V
RMS on-state current (TC=75°C)	I _{T(RMS)}	1.0	A
Non repetitive surge peak on-state current (180° conduction angle, F=50Hz, t=10ms/60Hz, 8. 3ms)	I _{TSM}	12	A
I ² t value for fusing (tp=10ms)	I ² t	0.72	A ² S
Critical rate of rise of on-state current (I =2×IGT, tr ≤ 100 ns)	di/dt	50	A/μS
Peak gate current	I _{GM}	0.5	A
Average gate power dissipation	P _{G(AV)}	0.1	W
Maximum device temperature for solderingPurposes (for 10 seconds maximum)	T _L	260	°C
ESD level	HBM	Class 3 (4000-16000V)	
Humidity sensitive level	MSL	Three-level (30°C, 60%RH, 168h)	

Thermal Resistances			
Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case (DC)	TO-92	70
		SOT-223	25
			°C/W

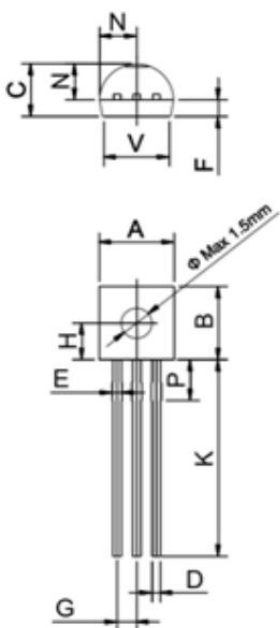
ELECTRICAL CHARACTERISTICS (T=25°C unless otherwise specified)					
Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V = 12V R = 140\Omega$	20	40	120	μA
V_{GT}		-	-	1.0	V
V_{GD}	$V_D = V_{DRM} T_j = 125^\circ C R = 1K\Omega$	0.2	-	-	V
I_L	$I_G = 1.2I_{GT}$	-	-	6	mA
I_H	$I_T = 50mA$	-	-	5	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$	50	-	-	V/ μs

STATIC CHARACTERISTICS				
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM} = 2.0A t_p = 380\mu s$	$T_j = 25^\circ C$	1.7	V
I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_j = 25^\circ C$	10	μA
I_{RRM}		$T_j = 125^\circ C$	0.5	mA

Ordering Information Scheme

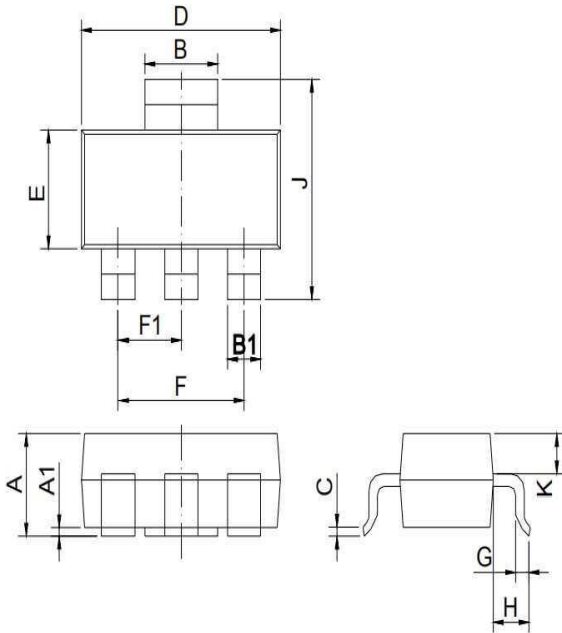


TO-92 Package Mechanical Data



Ref.	Dimensions					
	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	0.254		0.506	0.016		0.021
E	0.30		0.70	0.024		0.031
F	.	1.30	.	.	0.051	-
G	.	1.27	.	.	0.050	-
H	.	2.30	.	.	0.091	-
J	0.30		0.50	0.011		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	.		4.50	.		0.169

SOT-223 Package Mechanical Data



Ref.	Dimensions					
	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	1.5	1.75	2	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K		0.9			0.035	

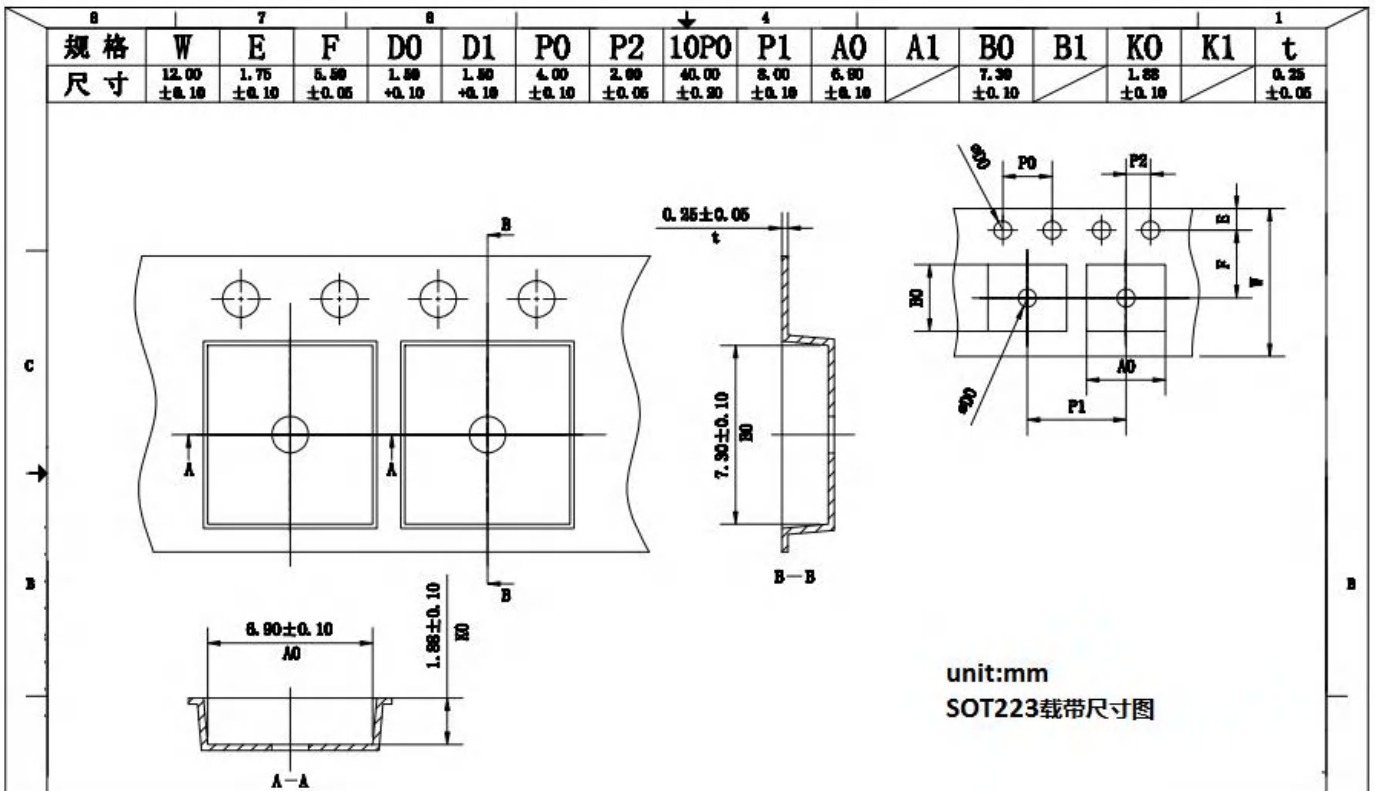


FIG.1 Maximum power dissipation versus Average on-state current

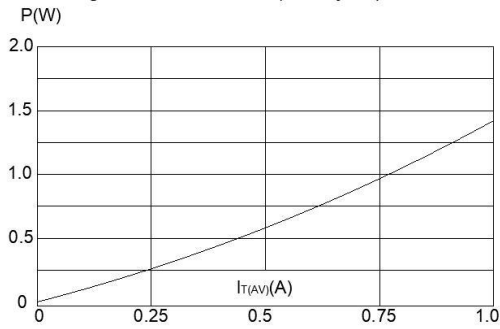


FIG.2: on-state current versus case temperature

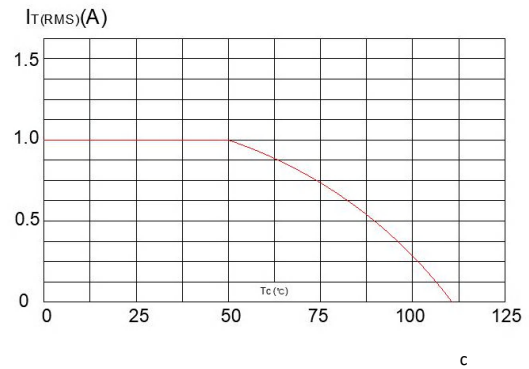


FIG.3: Surge peak on-state current versus number of cycles

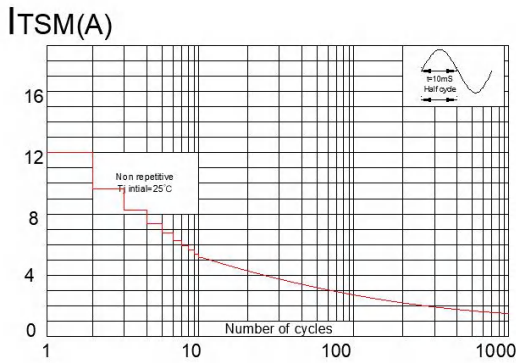


FIG.4: On-state characteristics (maximum values)

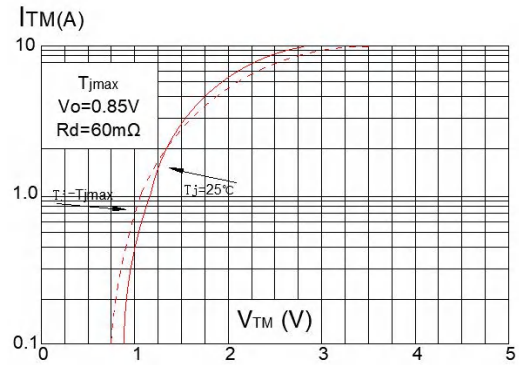


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

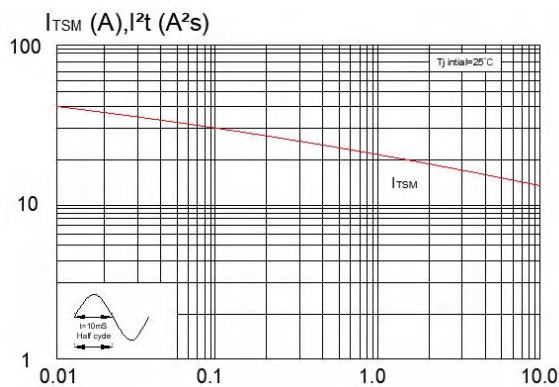
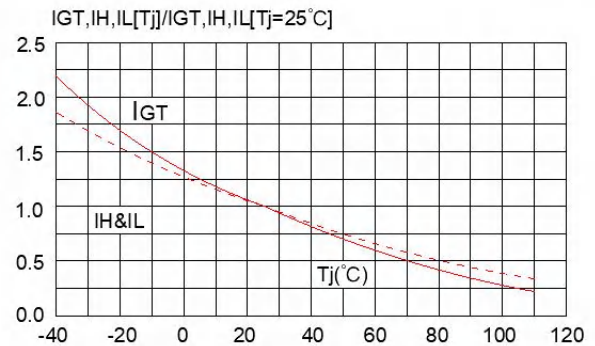


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



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