

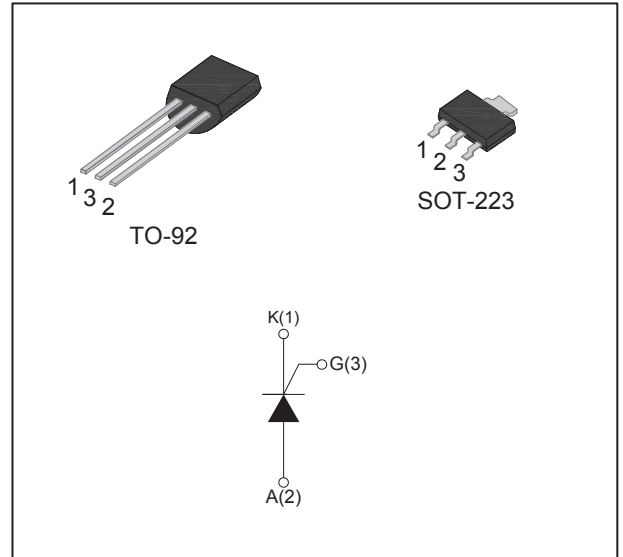
1A Sensitive gate SCRs

Features

- Sensitive gate
- Direct triggering from low power drivers and logic ICs
- Surface mountable package
- Pb-free
- RoHS compliant
- SMD device halogen free

Applications

- Ground Fault Circuit Interrupters (GFCI)
- General purpose switching and phase control
- Ignition circuits, CDI for 2- and 3-wheelers
- Motor control - e.g. small kitchen appliances



Main Features

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM} / V_{RRM}	800	V

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{STG}	-40 to 150	°C
Operating junction temperature range	T_J	-40 to 125	°C
Repetitive peak off-state voltage ($T_J = 25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_J = 25^\circ\text{C}$)	V_{RRM}	800	V
RMS on-state current	TO-92 ($T_C=50^\circ\text{C}$)	1	A
	SOT-223 ($T_C=75^\circ\text{C}$)		
Non repetitive surge peak on-state current (180° conduction angle, F = 50Hz, $t_P = 10\text{ms}$, half full cycle)	I_{TSM}	12	A
I^2t value for fusing ($t_P = 10\text{ms}$)	I^2t	0.72	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ns}$)	dI/dt	50	A/ μs
Peak gate current	I_{GM}	0.5	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition		Value	Unit
I_{GT}	$V_D = 12\text{V}, R_L = 100\Omega$	MAX	120	μA
V_{GT}	$V_D = 12\text{V}, R_L = 100\Omega$	MAX	1	V
V_{GD}	$V_D = V_{DRM}, T_J = 125^\circ\text{C}$	MIN	0.2	V
I_L	$I_G = 1.2 \times I_{GT}$	MAX	6	mA
I_H	$V_{AK} = 12\text{V}, I_{GK} = 100\text{mA}$	MAX	5	mA
dV/dt	$V_D = 67\% V_{DRM}, \text{Gate open}, T_J = 125^\circ\text{C}$	MIN	50	V/ μs

Static Characteristics

Symbol	Test Condition		Value	Unit
V_{TM}	$I_{TM} = 2\text{A}, t_P = 380\mu\text{s}$	$T_J = 25^\circ\text{C}$ MAX	1.7	V
I_{DRM} I_{RRM}	$V_D = V_{DRM}, V_R = V_{RRM}$	$T_J = 25^\circ\text{C}$ MAX	10	μA
		$T_J = 125^\circ\text{C}$ MAX	0.5	mA

Thermal Resistances

Symbol	Parameter		Value	Unit
$R_{\theta JC}$	Junction to case(AC)	TO-92	70	$^\circ\text{C/W}$
		SOT-223	25	

Ordering Information

Ordering Type	Marking	Package	Quantity	Delivery Mode
CS0112-800A	CS0112-800A	TO-92	1,000	Bag
CS0112-800N	S0112-8	SOT-223	4,000	13" diameter reel

Ordering Information Scheme

CS 01 12 - 800 A

SCR series

CS = Sensitive gate SCRs

$I_{T(RMS)}$

01 = 1A

I_{GT} Sensitivity

12 = 120 μ A

V_{DRM} / V_{RRM}

800 = 800V

Package type

A = TO-92

N = SOT-223

Ratings and Characteristics Curves

Fig.1 - RMS on-state current versus case temperature

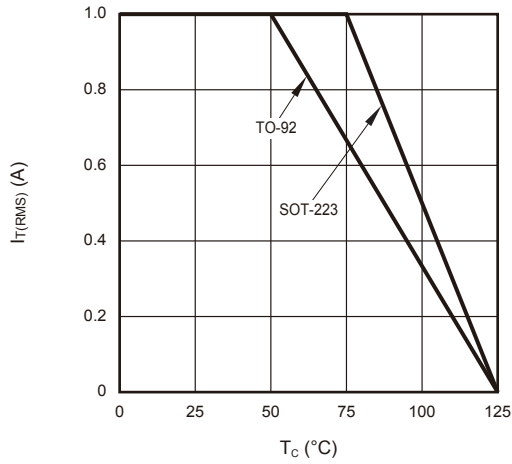


Fig.2 - Surge peak on-state current versus number of cycles

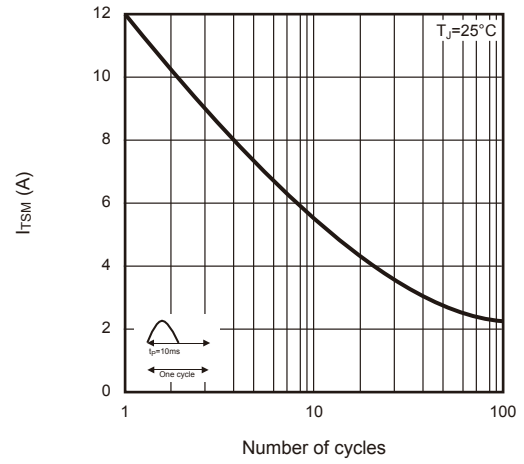


Fig.3 - On-state characteristics (maximum values)

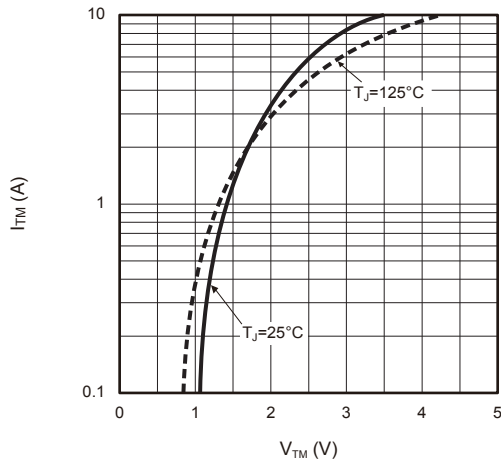


Fig.4 - Maximum power dissipation versus RMS on-state current

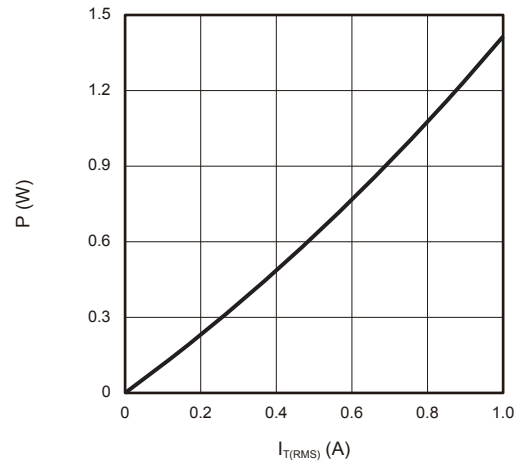
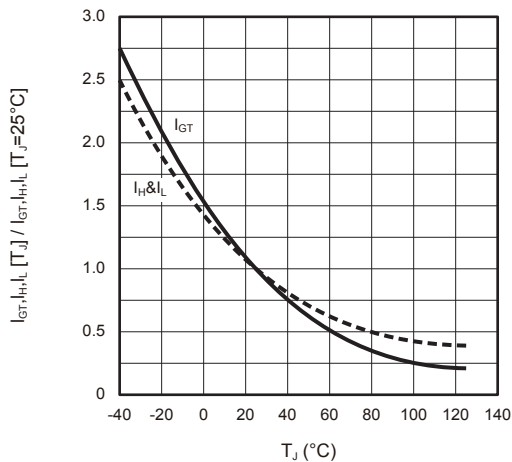
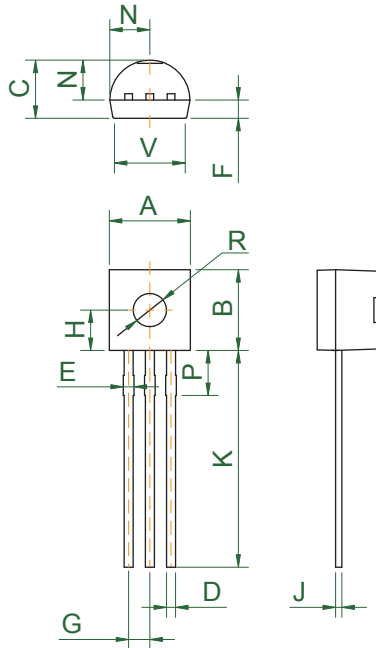


Fig.5 - Relative variations of gate trigger current, holding current and latching current versus junction temperature



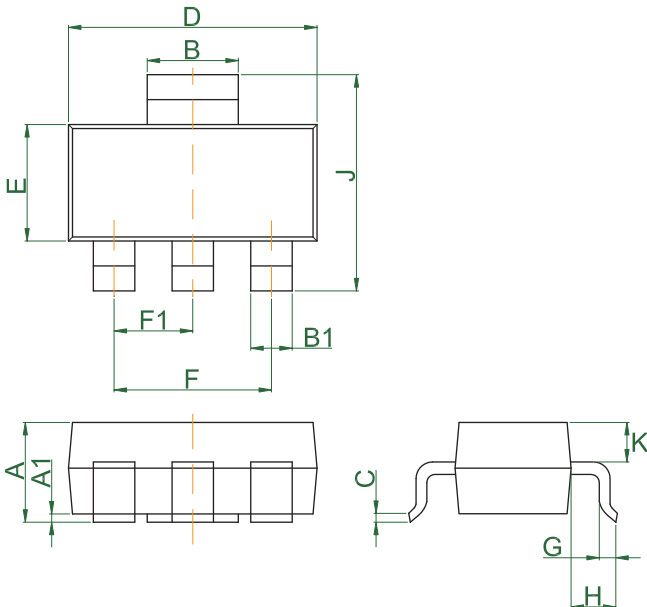
Package Outline Dimensions

TO-92



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.3	-	5.2	.169	-	.205
B	4.3	-	5.33	.169	-	.210
C	3.18	-	4.19	.125	-	.165
D	0.254	-	0.55	.010	-	.022
E	0.3	-	0.8	.012	-	.032
F	1.0	-	1.4	.039	-	.055
G	1.14	-	1.4	.045	-	.055
H	-	2.3	-	-	.091	-
J	0.3	-	0.51	.012	-	.020
K	12.7	-	15.0	.500	-	.591
N	2.04	-	2.66	.080	-	.105
P	1.86	-	2.06	.073	-	.081
R	-	-	1.5	-	-	.059
V	3.43	-	4.5	.135	-	.177

SOT-223



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	-	1.8	.059	-	.071
A1	0	-	0.12	.000	-	.005
B	2.9	-	3.1	.114	-	.122
B1	0.6	-	0.8	.024	-	.032
C	0.22	-	0.32	.009	-	.013
D	6.2	-	6.7	.244	-	.264
E	3.3	-	3.7	.130	-	.146
F	-	4.6	-	-	.181	-
F1	-	2.3	-	-	.091	-
G	0.7	-	1.1	.028	-	.043
H	1.5	-	2.0	.059	-	.079
J	6.7	-	7.3	.264	-	.287
K	0.8	-	1.0	.031	-	.039