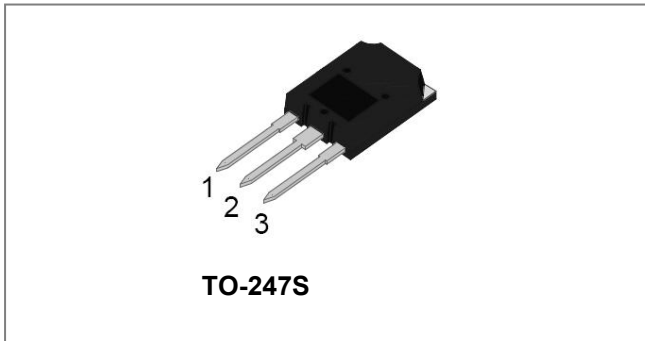
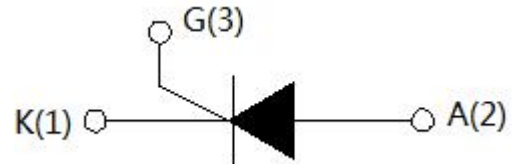


**SCT1275CS 75A SCRs**



**Circuit Diagram**



**Description**

With high ability to withstand the shock loading of large current, SCT1275CS provide high dv/dt rate with high frequency noise immunity. Products are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

From all three terminals to external heatsink.

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	$T_{stg}$	-	-40-150	°C
Operating junction temperature range	$T_j$	-	-40-125	°C
Repetitive peak off-state voltage( $T_j=25^{\circ}C$ )	$V_{DRM}$	-	1200	V
Repetitive peak reverse voltage( $T_j=25^{\circ}C$ )	$V_{RRM}$	-	1200	V
Non repetitive surge peak Off-state voltage	$V_{DSM}$	-	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage	$V_{RSM}$	-	$V_{RRM} + 100$	V
RMS on-state current	$I_{(TRMS)}$	TO-247S( $T_c=90^{\circ}C$ )	75	A
Non repetitive surge peak on-state current (tp=10ms)	$I_{TSM}$	-	800	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	-	3200	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	dI/dt	-	150	A/ $\mu$ s
Peak gate current	$I_{GM}$	-	4	A
Average gate power dissipation	$P_{G(AV)}$	-	1	W
Peak gate power	$P_{GM}$	-	5	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	-	-	70	mA
$V_{GT}$		-	-	1.3	V
$V_{GD}$	$V_D=V_{DRM} T_j=125^\circ\text{C } R_L=3.3\text{K}\Omega$	0.2	-	-	V
$I_L$	$I_G=1.2I_{GT}$	-	-	150	mA
$I_H$	$I_T=1\text{A}$	-	-	120	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$	700	-	-	V/ $\mu\text{s}$

**Static Characteristics**

Symbol	Condition	Max.	Units
$V_{TM}$	$I_{TM}=100\text{A } t_p=380\mu\text{s}, T_j=25^\circ\text{C}$	1.5	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}, T_j=25^\circ\text{C}$	50	$\mu\text{A}$
$I_{RRM}$	$V_D=V_{DRM} V_R=V_{RRM}, T_j=125^\circ\text{C}$	10	mA

**Thermal Resistances**

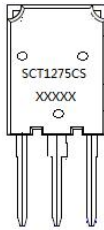
Symbol	Condition		Value	Units
$R_{th(j-c)}$	Junction to case(AC)	TO-247S	0.52	$^\circ\text{C/W}$

**Ordering Information**

<p><b>S CT 12 75 CS</b></p> <p>SMC Diode Solutions _____</p> <p>SCRs _____</p> <p>12:<math>V_{DRM}/V_{RRM} \geq 1200\text{V}</math> _____</p>	<p>_____ CS:TO-247S</p> <p>_____ <math>I_{T(RMS)}:75\text{A}</math></p>
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Device	Package	Shipping
SCT1275CS	TO-247S	30pcs/ Tube

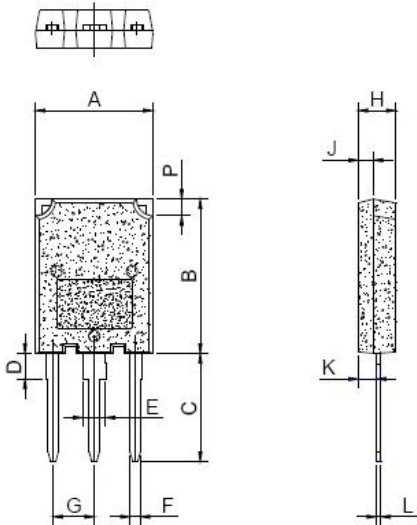
## Marking Diagram



Where XXXXX is YYWWL

SCT1275CS = Part name  
YY = Year  
WW = Week  
L = Lot Number

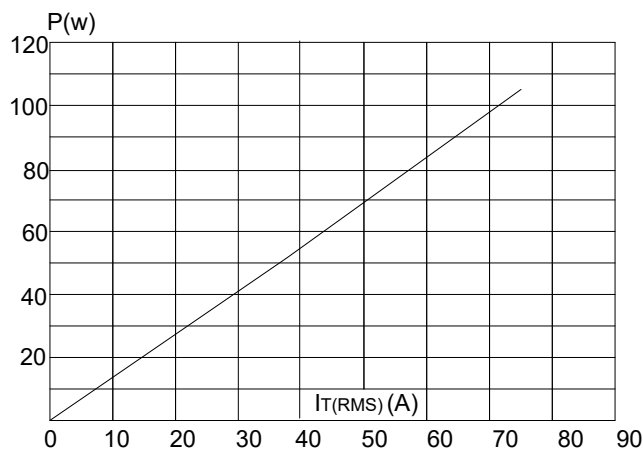
## Mechanical Dimensions TO-247CS



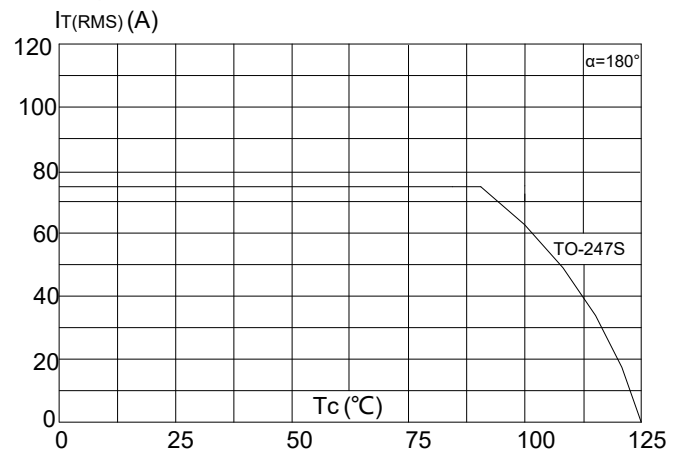
SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.1		16.1	0.594		0.634
B	19.8		20.8	0.78		0.819
C	13.8		14.8	0.543		0.583
D	3.00		4.00	0.118		0.157
E	2.75		3.35	0.108		0.132
F	1.30		1.50	0.051		0.059
G	5.10		5.80	0.201		0.228
H	4.50		5.50	0.177		0.217
J	1.45		2.15	0.057		0.085
K	1.90		2.80	0.075		0.110
L	0.55		0.80	0.022		0.031
P	2.00		2.40	0.079		0.094

## Ratings and Characteristics Curves

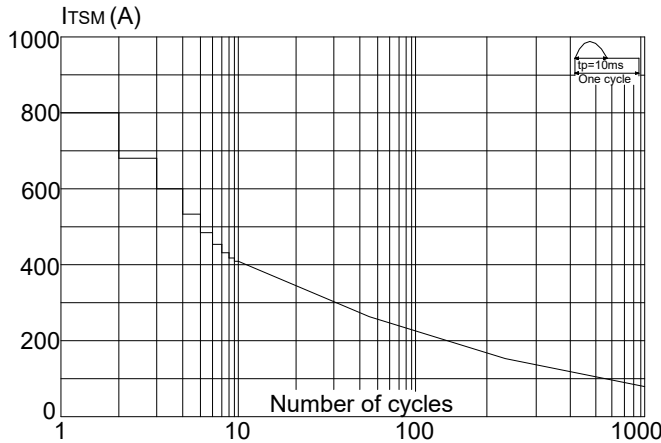
**FIG.1:** Maximum power dissipation versus RMS on-state current



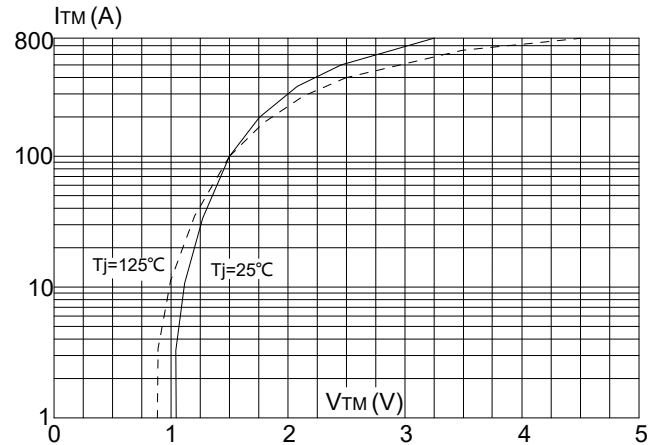
**FIG.2:** RMS on-state current versus case temperature



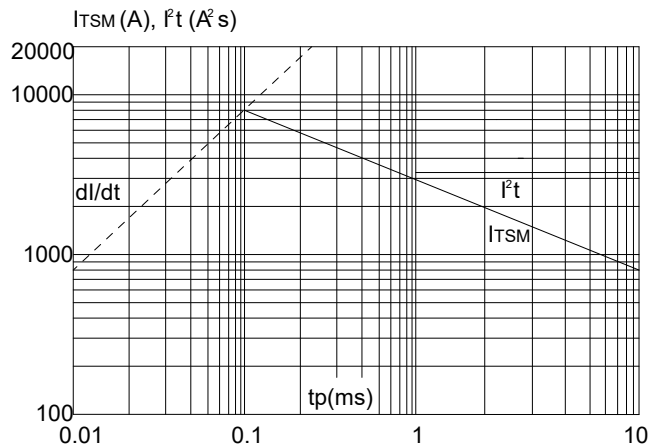
**FIG.3:** Surge peak on-state current versus number of cycles



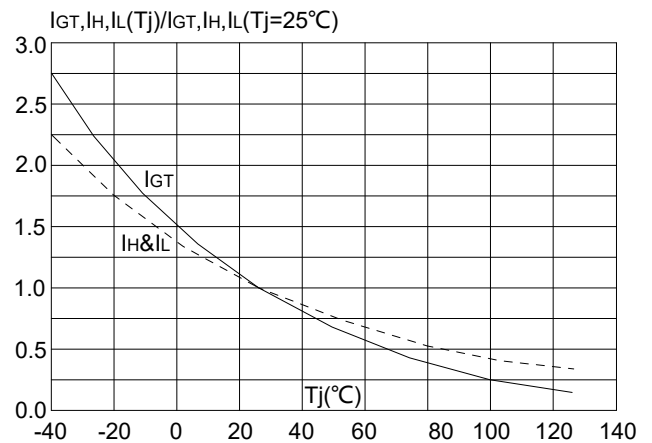
**FIG.4:** On-state characteristics (maximum values)



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$ , and corresponding value of  $I^2 t$  ( $di/dt < 150A/\mu s$ )



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



**Technical Data**  
**Data Sheet N2046, Rev.-**



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