- **Description:**

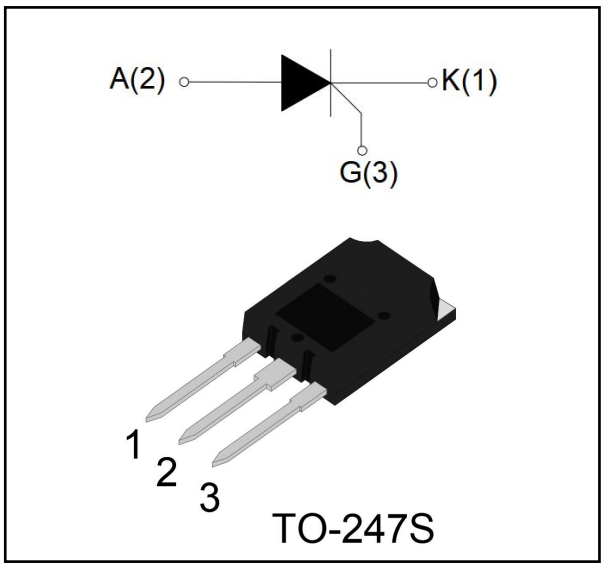
High current density due to double mesa trchnology;

- **Applications:**

WCR75 series of silicon controlled rectifiers are specifically designed for high power switching and phase control applications.

- **Features:**

●WCR75 series are suitable for general purpose applications, a high gate sensitivity is required
●WCR75 series are non-insulated design.
●Blocking voltage to 1200/1600/1800V
●On-state RMS current to 75A
●Non-repetitive peak on-state current to 1000A



- **Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DRM}	Repetitive peak off-state voltage	T_J=25℃	1200	1800	V
V_{RRM}	Repetitive peak Reverse voltage	T_J=25℃	1200	1800	V
$I_{T(RMS)}$	RMSon-statecurrent (all conduction angels)	Lead current limitation	-	75	A
$I_{T(av)}$	Average on-state current (half sine wave)	T_c=80℃	-	70	A
I_{TSM}	Non-repetitive peak On-state current (half sine cycle, T_J=25℃)	F=50Hz, t=10ms	-	1000	A
		F=60Hz, t=8.3ms	-	1150	A
I^2t	I^2t Value for fusing	T_P=10ms	-	5000	A^2S
di/dt	Critical rate of rise of on-state current after triggering	I_{TM}=20A,I_G=50mA	-	150	A/μs
I_{GM}	Peak gate current	T_P=20μs, T_J=125℃	-	2.5	A
P_{GM}	Peak gate power		-	10	W
$P_{G(AV)}$	Average gate power dissipation		-	2.0	W
T_{STG}	Storage temperature		-40	150	℃
T_J	Junction temperature		-40	125	℃

● Electrical Characteristics

Symbol	Conditions	Numerical		Unit
		MIN	MAX	
I_{GT}	V_D=12V,R_L=33Ω	20	100	mA
V_{GT}		1.5		V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ, T_J=125℃	0.2		V
I_L	I_T=1.2I_{GT}	/	200	mA
I_H	I_T=500mA	/	150	mA
dv/dt	V_{DM}=67%V_{DRM},gate open,T_J=125℃	1000	1000	V/μs

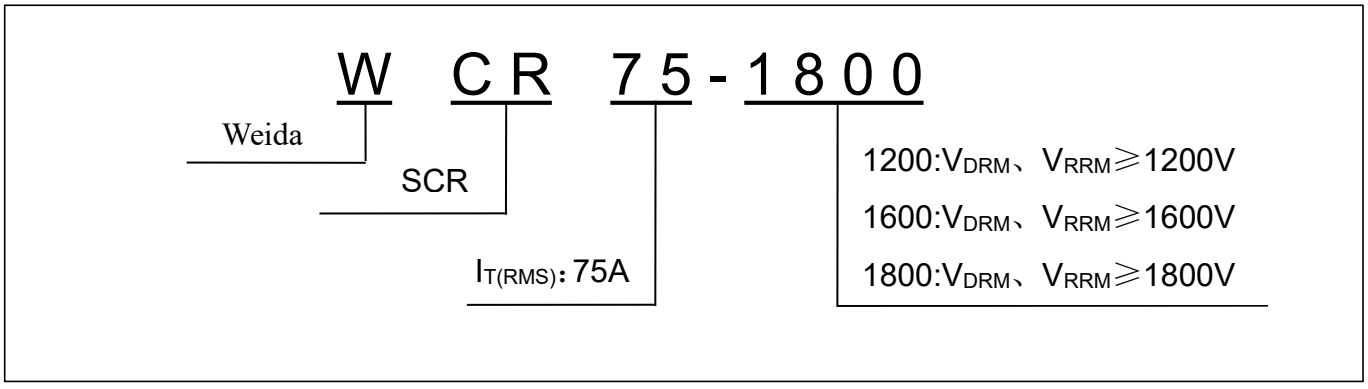
● Electrical Characteristics

Symbol	Parameter		Numerical(MAX)	Unit
V_{TM}	I_T=100A,tp=380μs	T_J=25℃	1.55	V
I_{DRM} I_{RRM}	V_D=V_{DRM},V_R=V_{RRM}	T_J=25℃	50	μA
		T_J=125℃	10	mA

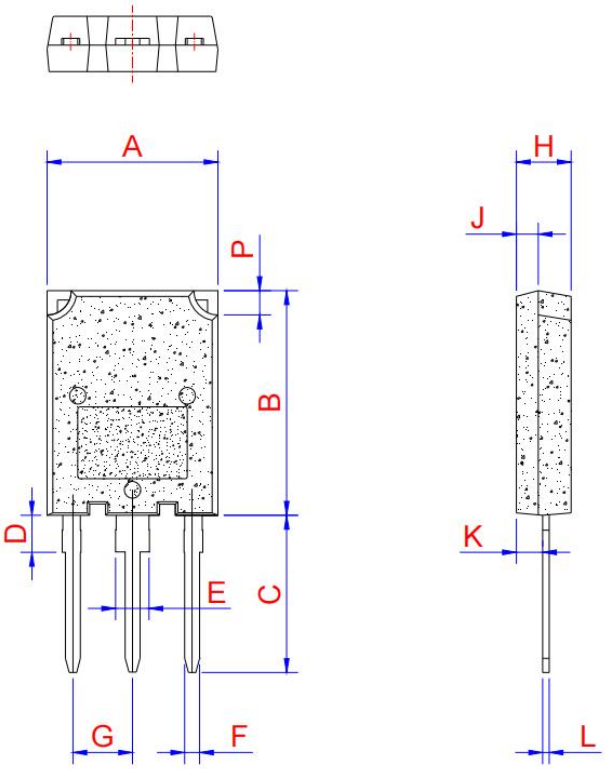
● Thermal Characteristics

Symbol	Parameter	Numerical(MAX)	Unit
$R_{th(j-mb)}$	Thermal resistance from junction to mounting base	0.32	℃/W

● Ordering Information



Package Outline Dimensions



TO-247S

Ref.	Dimensions					
	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

Marking

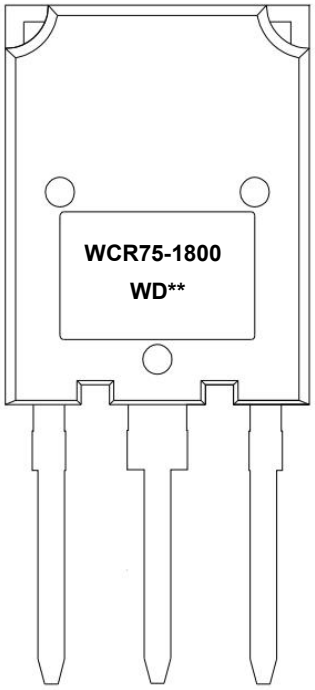


FIG.1: Maximum power dissipation versus RMS on-state current

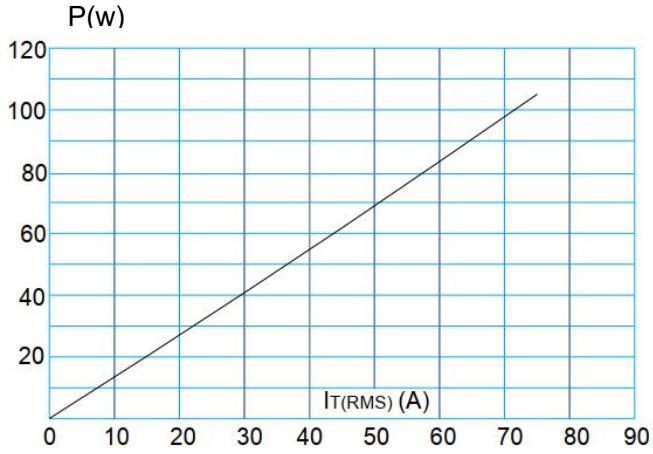


FIG.2: RMS on-state current versus case temperature

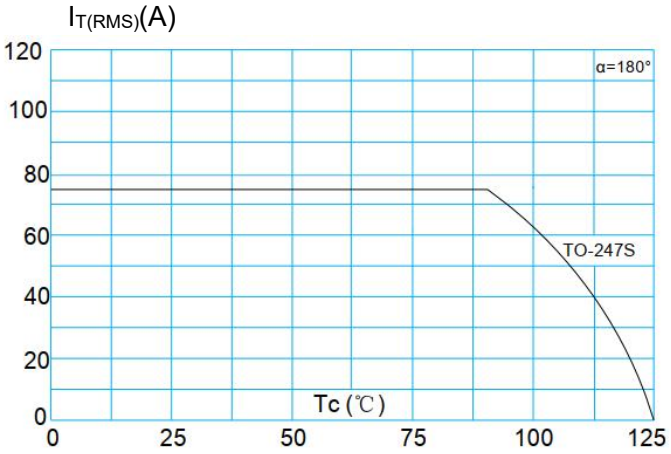


FIG.3: Surge peak on-state current versus number of cycles

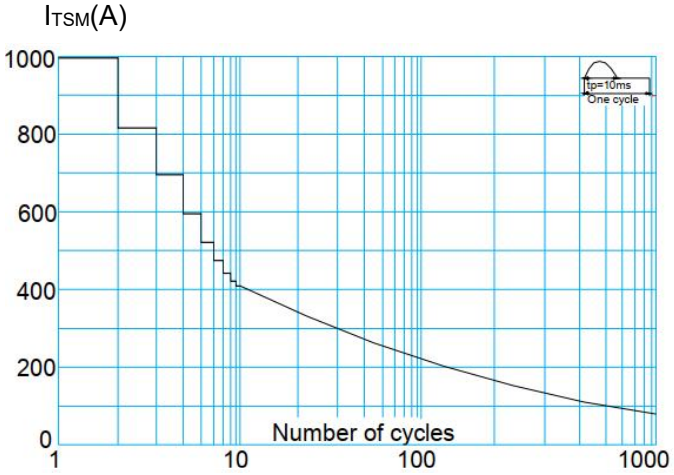


FIG.4: On-state characteristics (maximum values)

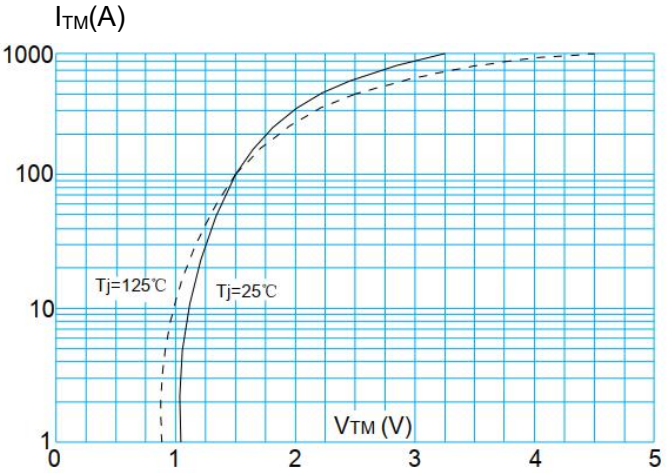


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, andcorresponging value of I^2t (Ⅰ-Ⅱ-Ⅲ:dI/dt < 50A/μs;Ⅳ:dI/dt < 10A/μs)

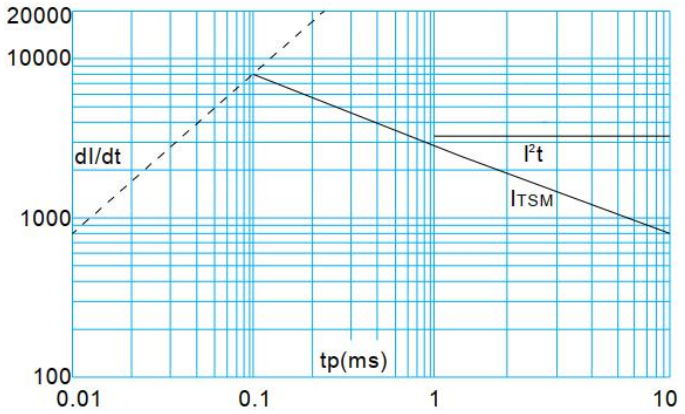
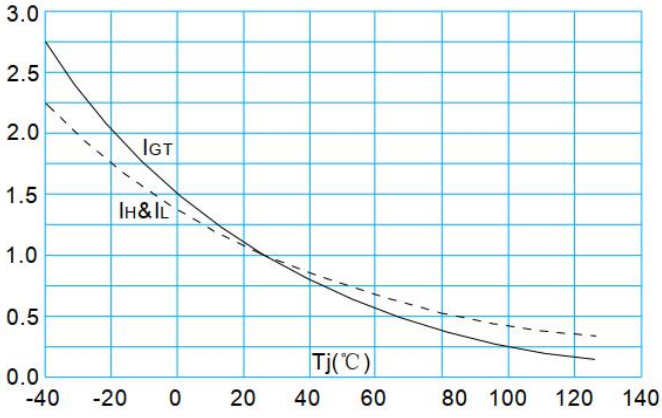


FIG.6: Relative variations of gate trigger current,holding current and latching current versus junction temperature



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