

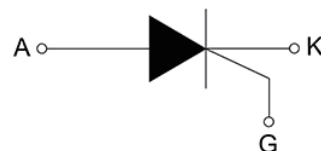
DESCRIPTION:

With high ability to withstand the shock loading of large current, chip series of silicon controlled rectifiers provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motor-cycle, power charger, T-tools etc.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	20	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	≤ 15	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-125	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	600	V
Average on-state current ($T_c \leq 96^{\circ}C$)	$I_{T(AV)}$	13	A
RMS on-state current ($T_c \leq 96^{\circ}C$)	$I_{T(RMS)}$	20	A
Non repetitive surge peak on-state current ($t_p=10ms$, $T_j=25^{\circ}C$)	I_{TSM}	250	A
Non repetitive surge peak on-state current ($t_p=8.3ms$, $T_j=25^{\circ}C$)		275	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	312.5	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=125^{\circ}C$)	di/dt	150	$A/\mu s$
Peak gate current ($t_p=20\mu s$, $T_j=125^{\circ}C$)	I_{GM}	5	A
Average gate power dissipation ($T_j=125^{\circ}C$)	$P_{G(AV)}$	1	W

Peak gate power	P_{GM}	20	W
Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG)	V_{pp}	0.5	kV

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	-	-	15	mA
V_{GT}		-	-	1	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	$I_G=1.2I_{GT}$	-	-	60	mA
I_H	$I_T=500\text{mA}$	-	-	50	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$	500	-	-	V/ μs
t_{on}	$I_G=40\text{mA}$ $I_A=400\text{mA}$ $I_R=40\text{mA}$ $T_j=25^{\circ}\text{C}$	-	5	-	μs
t_{off}		-	70	-	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=40\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.55	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.74	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	20	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.3	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	1.1	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	junction to ambient (DC)	55	$^{\circ}\text{C/W}$

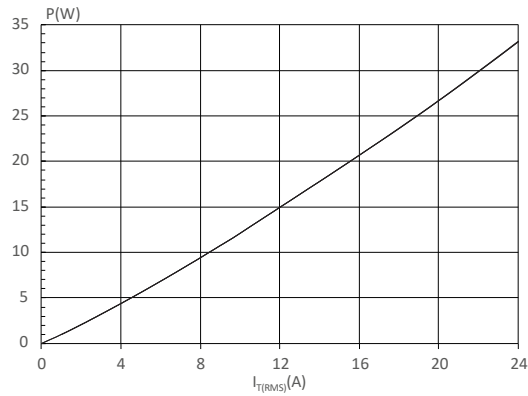
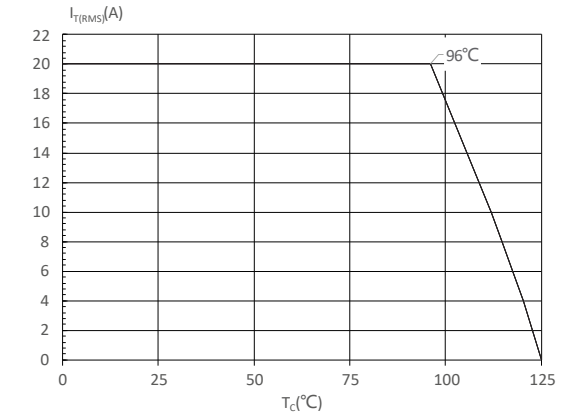
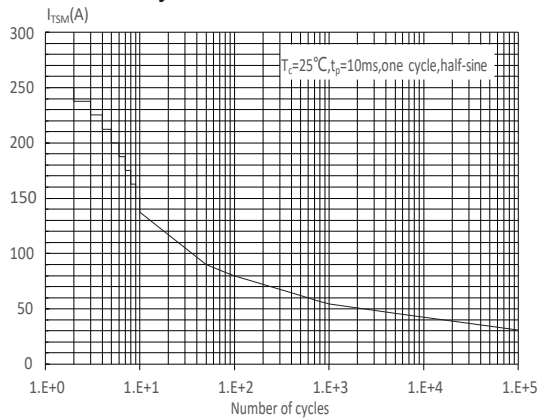
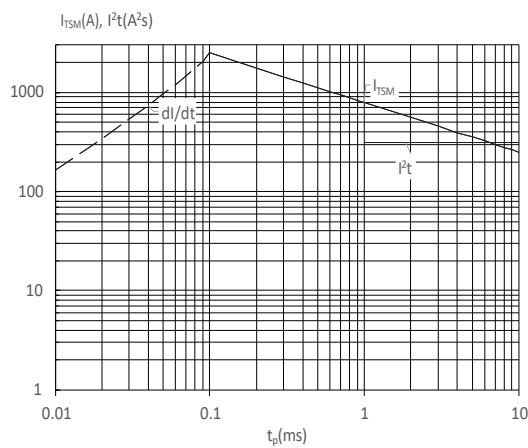
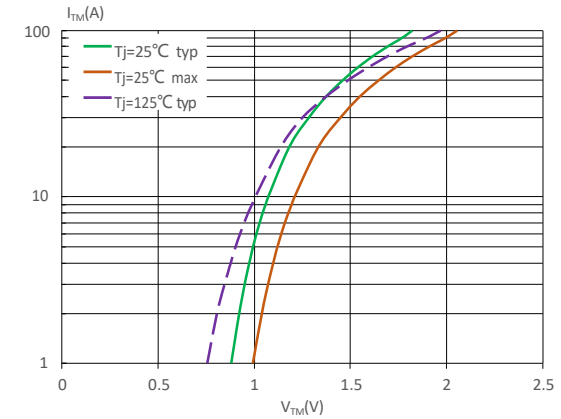
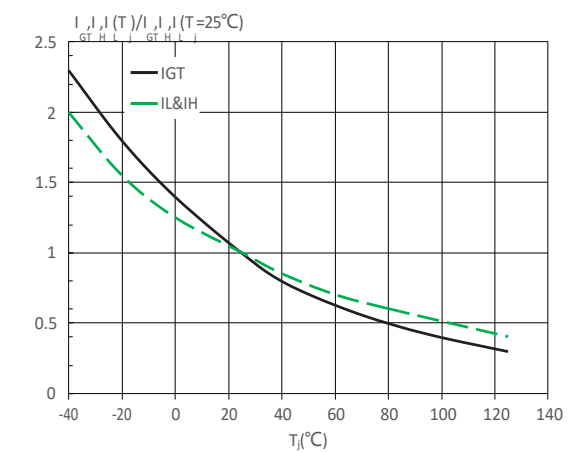
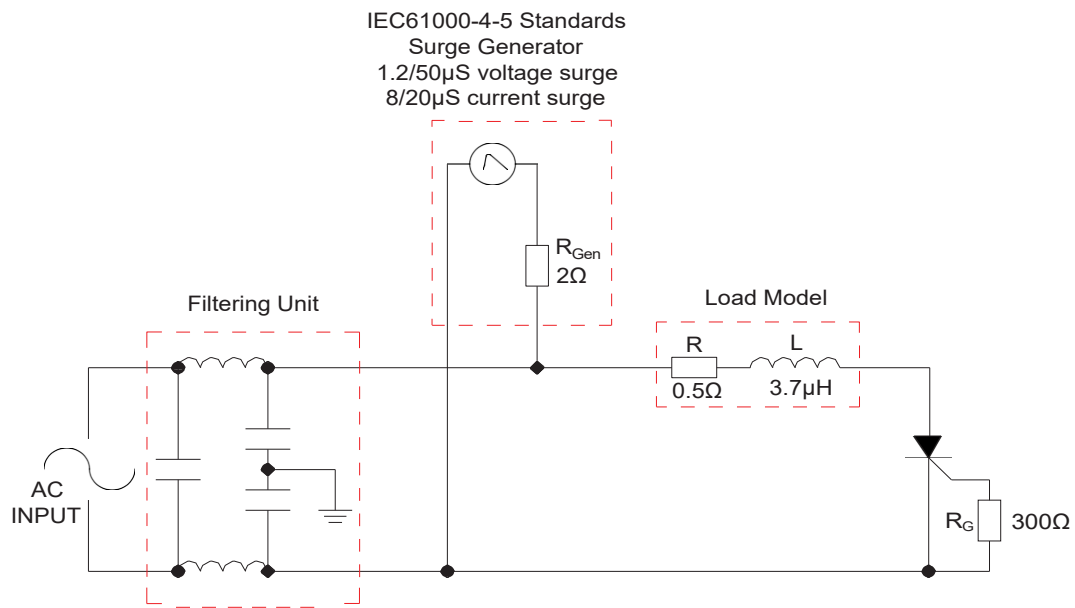
FIG : Maximum power dissipation versus RMS on-state current

FIG : RMS on-state current versus case temperature

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

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

FIG : On-state characteristics

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


FIG : Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics