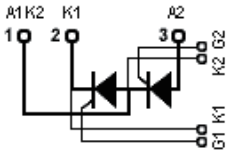


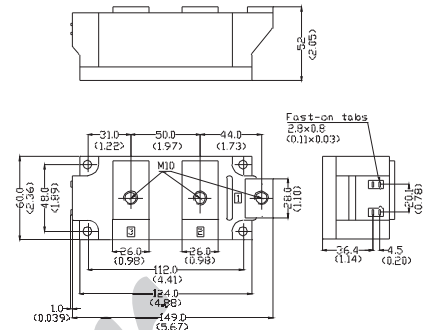
# STT500GKxxBT

## Thyristor-Thyristor Modules



Type	$V_{RSM}$	$V_{RRM}$
	$V_{DSM}$	$V_{DRM}$
	V	V
STT500GK08BT	900	800
STT500GK12BT	1300	1200
STT500GK14BT	1500	1400
STT500GK16BT	1700	1600
STT500GK18BT	1900	1800

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit
$I_{TRMS}$ , $I_{FRMS}$ $I_{TAVM}$ , $I_{FAVM}$	$T_{VJ}=T_{VJM}$ $T_C=85^{\circ}C$ ; 180° sine	785 500	A
$I_{TSM}$ , $I_{FSM}$	$T_{VJ}=45^{\circ}C$ $V_R=0$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	16000 18000	A
	$T_{VJ}=T_{VJM}$ $V_R=0$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	13000 14400	
$\int i^2 dt$	$T_{VJ}=45^{\circ}C$ $V_R=0$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1125000 1062000	A <sup>2</sup> s
	$T_{VJ}=T_{VJM}$ $V_R=0$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	845000 813000	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ f=50Hz, $t_p=200\mu s$ $V_D=2/3V_{DRM}$ $I_G=1A$ dig/dt=1A/ $\mu s$	repetitive, $I_T=960A$ 100	A/ $\mu s$
		non repetitive, $I_T=I_{TAVM}$ 500	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$ ; $R_{GK}=\infty$ ; method 1 (linear voltage rise)	$V_{DR}=2/3V_{DRM}$ 1000	V/ $\mu s$
$P_{GM}$	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$	$t_p=30\mu s$ 120	W
		$t_p=500\mu s$ 60	
$P_{GAV}$		20	W
$V_{RGM}$		10	V
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-40...+140	°C
		140	
		-40...+125	
$V_{ISOL}$	50/60Hz, RMS $I_{ISOL}\leq 1mA$	t=1min 3000	V~
		t=1s 3600	
$M_d$	Mounting torque (M6)	4.5-7/40-60	Nm/lb.in.
	Terminal connection torque (M8)	11-13/97-115	
Weight	Typical	1380	g

# STT500GKXXBT

## Thyristor-Thyristor Modules

Symbol	Test Conditions	Characteristic Values	Unit
<b>I<sub>RRM</sub></b>	$T_{VJ}=T_{VJM}; V_R=V_{RRM}$	30	mA
<b>V<sub>TM</sub></b>	$I_{TM}=1500A; T_{VJ}=25^{\circ}C$	1.65	V
<b>V<sub>TO</sub></b>	For power-loss calculations only ( $T_{VJ}=T_{VJM}$ )	0.8	V
<b>r<sub>T</sub></b>		0.38	mΩ
<b>V<sub>GT</sub></b>	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	2 3	V
<b>I<sub>GT</sub></b>	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	300 400	mA
<b>V<sub>GD</sub></b>	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.25	V
<b>I<sub>GD</sub></b>	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	10	mA
<b>I<sub>L</sub></b>	$T_{VJ}=25^{\circ}C; t_p=30\mu s; V_D=6V$ $I_G=1A; di_G/dt=1A/\mu s$	400	mA
<b>I<sub>H</sub></b>	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	300	mA
<b>t<sub>gd</sub></b>	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=1A; di_G/dt=1A/\mu s$	2	us
<b>t<sub>q</sub></b>	$T_{VJ}=T_{VJM}; I_T=500A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=50V/\mu s; V_D=2/3V_{DRM}$ typ.	350	us
<b>R<sub>thJC</sub></b>	DC current	0.072	K/W
<b>R<sub>thJK</sub></b>	DC current	0.096	K/W
<b>ds</b>	Creeping distance on surface	12.7	mm
<b>da</b>	Creepage distance in air	9.6	mm
<b>a</b>	Maximum allowable acceleration	50	m/s <sup>2</sup>

### FEATURES

- \* International standard package
- \* Copper base plate
- \* Pressure Contact Technology
- \* BusBar Terminal
- \* Isolation voltage 3600 V~
- \* UL file NO.310749
- \* RoHS compliantce

### APPLICATIONS

- \* Motor control, softstarter
- \* Power converter
- \* Heat and temperature control for industrial furnaces and chemical processes
- \* Lighting control
- \* Solid state switches

### ADVANTAGES

- \* Simple mounting
- \* Improved temperature and power cycling
- \* Reduced protection circuits



# STT500GKXXBT

## Thyristor-Thyristor Modules

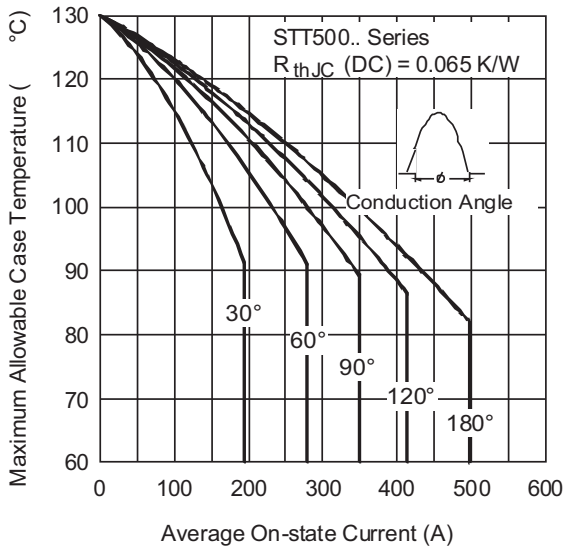


Fig. 1 - Current Ratings Characteristics

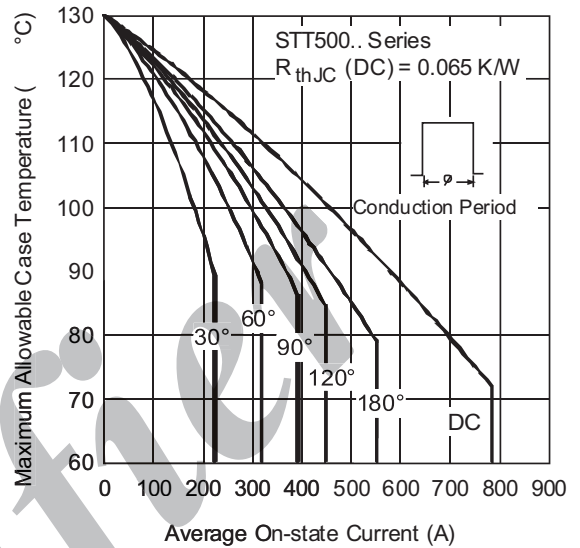


Fig. 2 - Current Ratings Characteristics

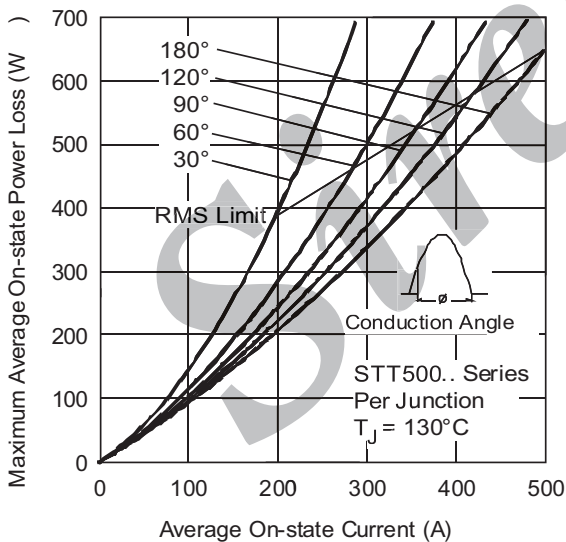


Fig. 3 - On-state Power Loss Characteristics

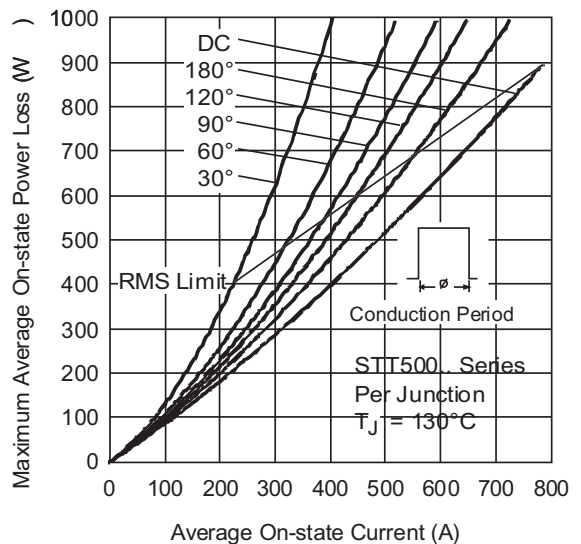


Fig. 4 - On-state Power Loss Characteristics

# STT500GKXXBT

## Thyristor-Thyristor Modules

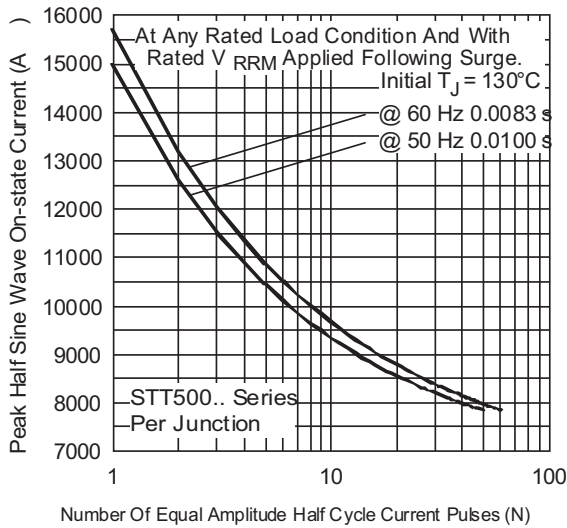


Fig. 5 - Maximum Non-Repetitive Surge Current

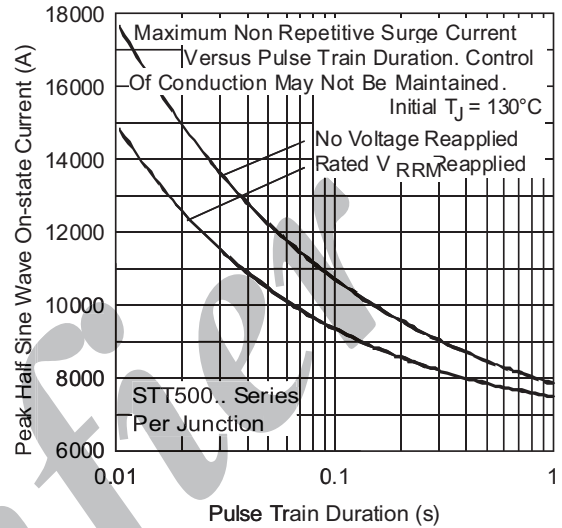


Fig. 6 - Maximum Non-Repetitive Surge Current

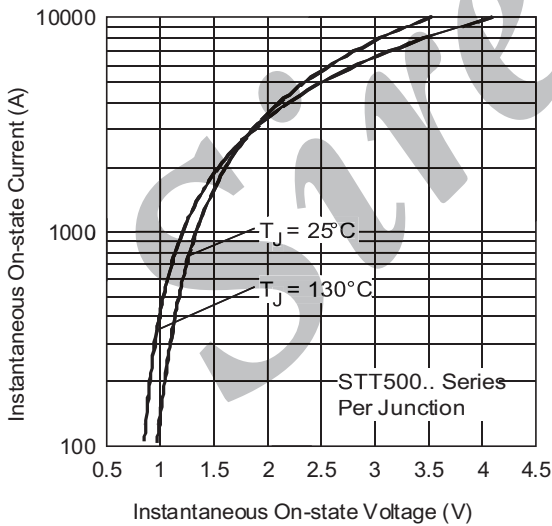


Fig. 7 - On-state Voltage Drop Characteristics

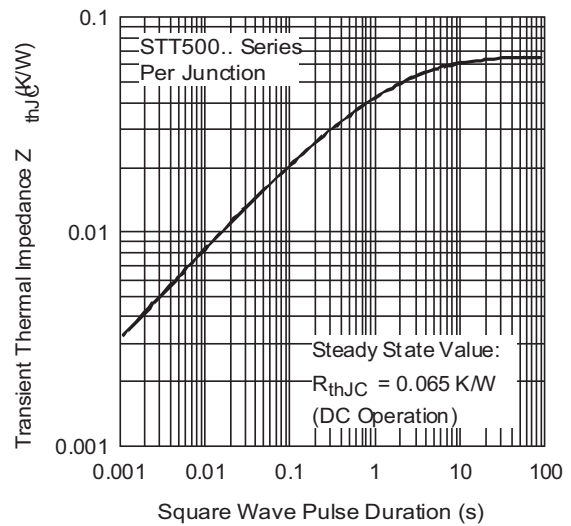


Fig. 8 - Thermal Impedance  $Z_{thJC}$  Characteristics

# STT500GKXXBT

## Thyristor-Thyristor Modules

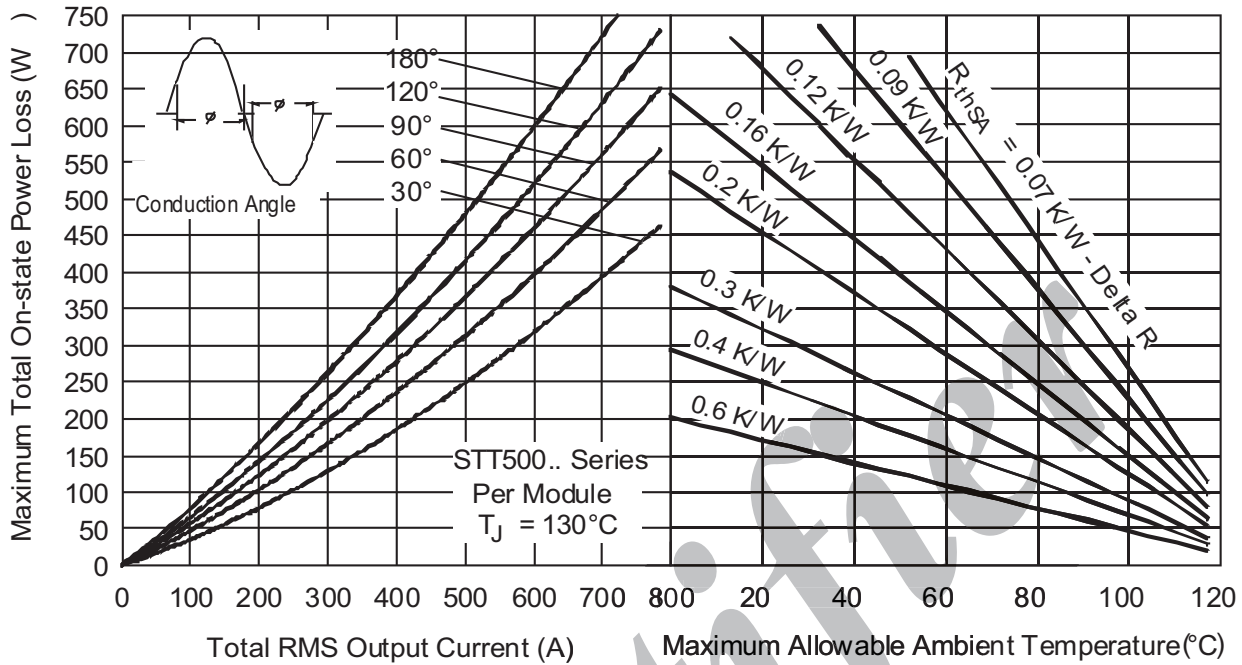


Fig. 9 - On-state Power Loss Characteristics

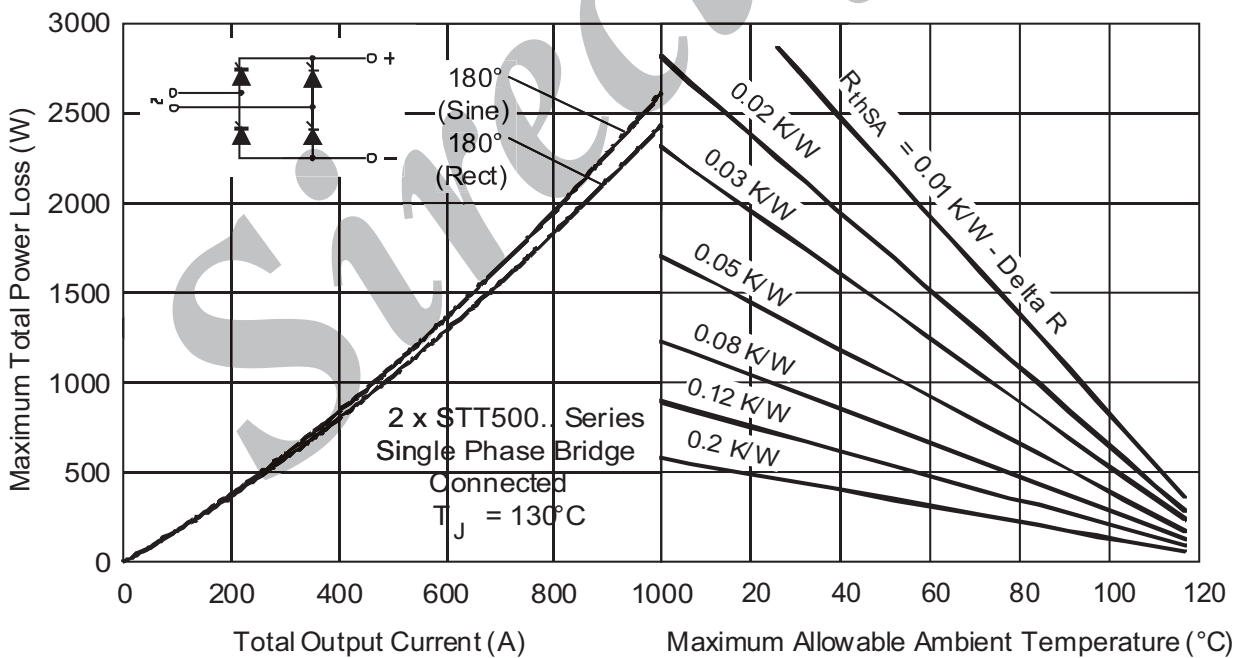


Fig. 10 - On-state Power Loss Characteristics

# STT500GKXXBT

## Thyristor-Thyristor Modules

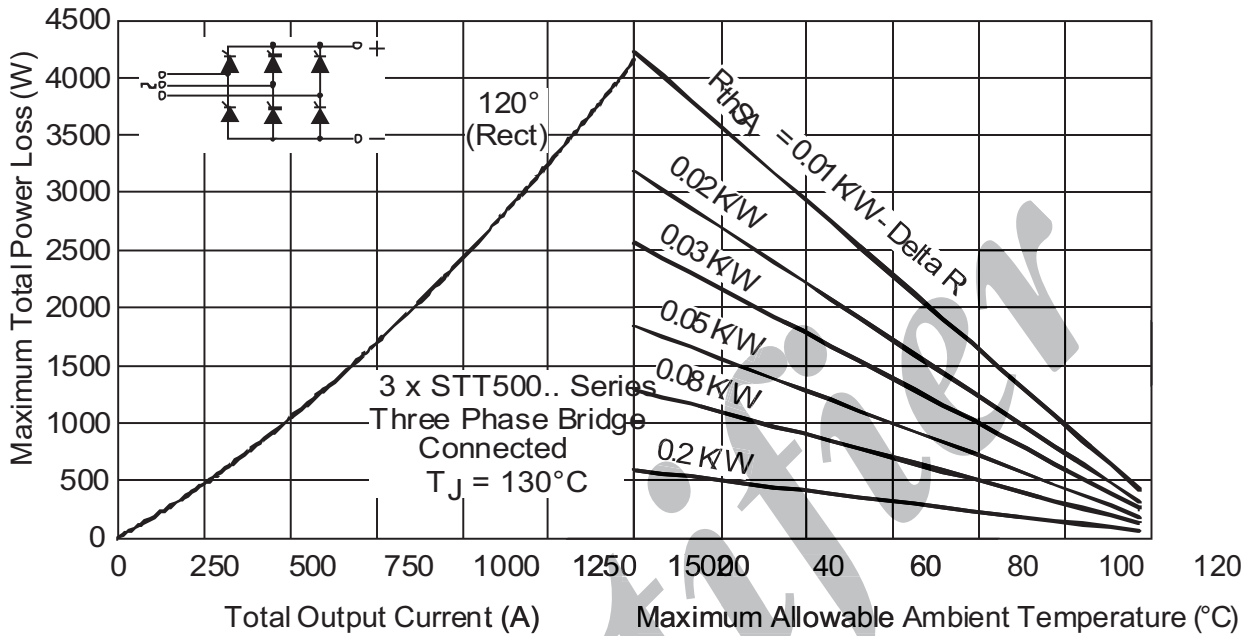


Fig. 11 - On-state Power Loss Characteristics

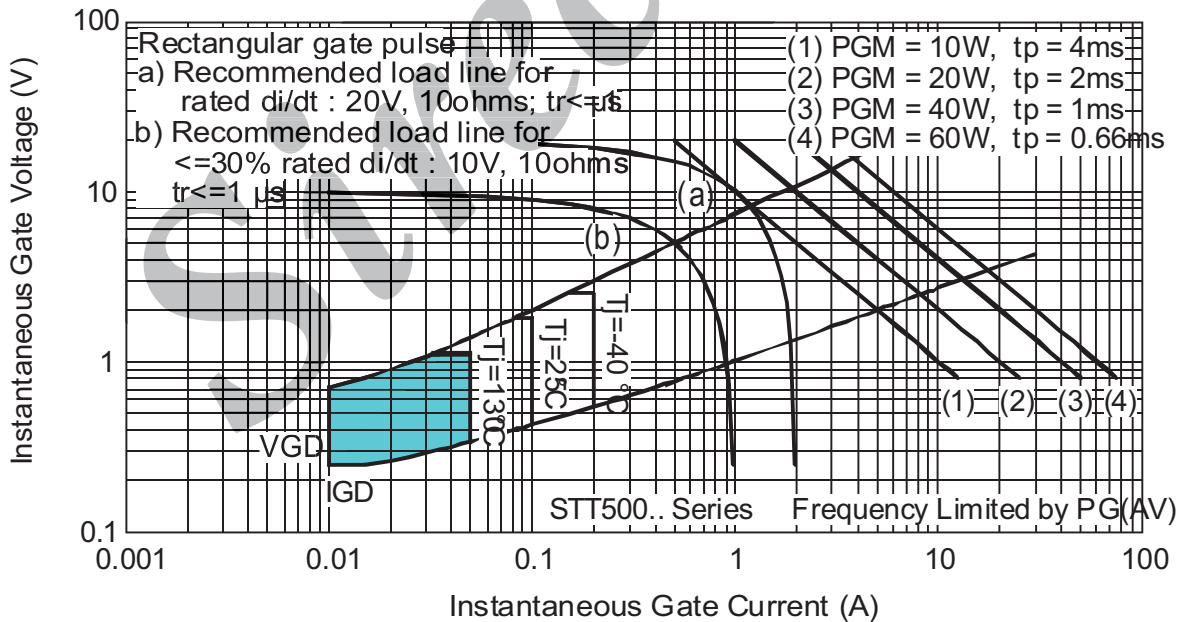


Fig. 12 - Gate Characteristics