

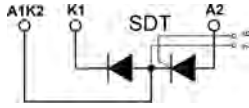
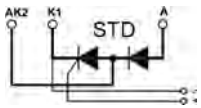
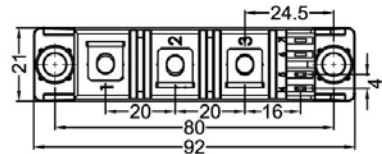
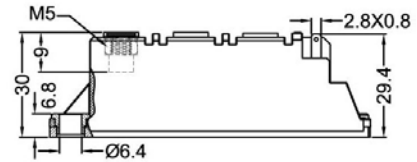
ST8 116GKXXB

Thyristor-8 JcXY Modules



Type	V _{RSM} V _{DSM} V	V _{RRM} V _{DRM} V
ST8 116GK08B	900	800
ST8 116GK12B	1300	1200
ST8 116GK14B	1500	1400
ST8 116GK16B	1700	1600
ST8 116GK18B	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°C; 180° sine	180 116	A	
I _{TSM} , I _{FSM}	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	2250 2400	A	
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	2000 2150		
∫i ² dt	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	25300 23900	A ² s	
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	20000 19100		
(di/dt) _{cr}	T _{VJ} =T _{VJM} f=50Hz, t _p =200us V _D =2/3V _{DRM} I _G =0.45A di _G /dt=0.45A/us	repetitive, I _T =250A non repetitive, I _T =I _{TAVM}	150 500	A/us
	T _{VJ} =T _{VJM} ; R _{GK} =∞; method 1 (linear voltage rise)	V _{DR} =2/3V _{DRM}	1000	
P _{GM}	T _{VJ} =T _{VJM} I _T =I _{TAVM}	t _p =30us t _p =300us	10 5	W
P _{GAV}			0.5	W
V _{RGM}			10	V
T _{VJ} T _{VJM} T _{stg}			-40...+125 125 -40...+125	°C
V _{ISOL}	50/60Hz, RMS I _{ISOL} ≤1mA	t=1min t=1s	3000 3600	V~
M _d	Mounting torque (M5) Terminal connection torque (M5)		2.5-4.0/22-35 2.5-4.0/22-35	Nm/lb.in.
Weight	Typical		110	g



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Symbol	Test Conditions	Characteristic Values	Unit
I_{RRM}, I_{DRM}	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	5	mA
V_{TM}	$I_{TM}=330A; T_{VJ}=25^{\circ}C$	1.50	V
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}C$)	0.8	V
r_T		2.4	$m\Omega$
V_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	2.5 2.6	V
I_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	150 200	mA
V_{GD}	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.2	V
I_{GD}		10	mA
I_L	$T_{VJ}=25^{\circ}C; t_p=10\mu s; V_D=6V$ $I_G=0.45A; di_G/dt=0.45A/\mu s$	450	mA
I_H	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	200	mA
t_{gd}	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=0.45A; di_G/dt=0.45A/\mu s$	2	μs
t_q	$T_{VJ}=T_{VJM}; I_T=150A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=20V/\mu s; V_D=2/3V_{DRM}$	185	μs
Q_s	$T_{VJ}=T_{VJM}; I_T, I_F=50A; -di/dt=6A/\mu s$	170	μC
I_{RM}		45	A
R_{thJC}	per thyristor/diode; DC current per module	0.270 0.135	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.470 0.235	K/W
d_s	Creeping distance on surface	12.7	mm
d_A	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s^2

FEATURES

- * International standard package
- * Copper base plate
- * Glass passivated chips
- * Isolation voltage 3600 V~
- * UL file NO.E310749
- * RoHS compliant

APPLICATIONS

- * DC motor control
- * Softstart AC motor controller
- * Light, heat and temperature control

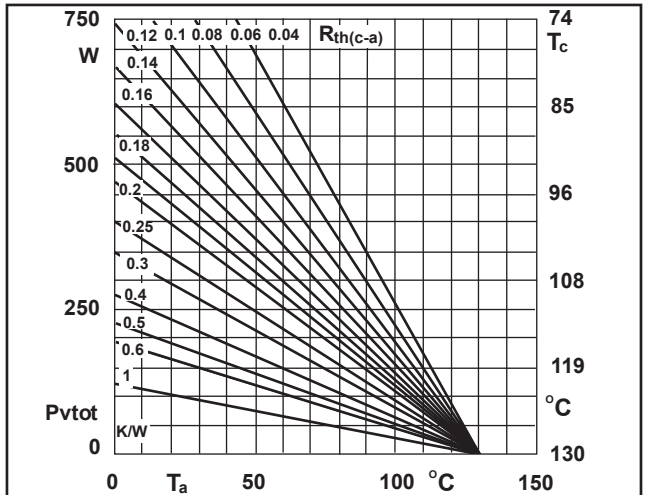
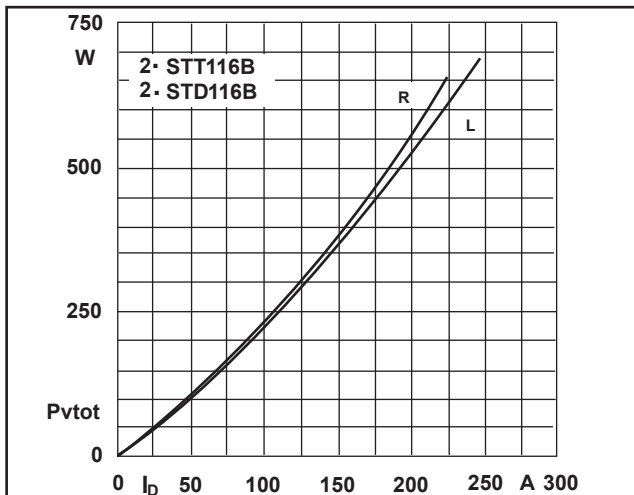
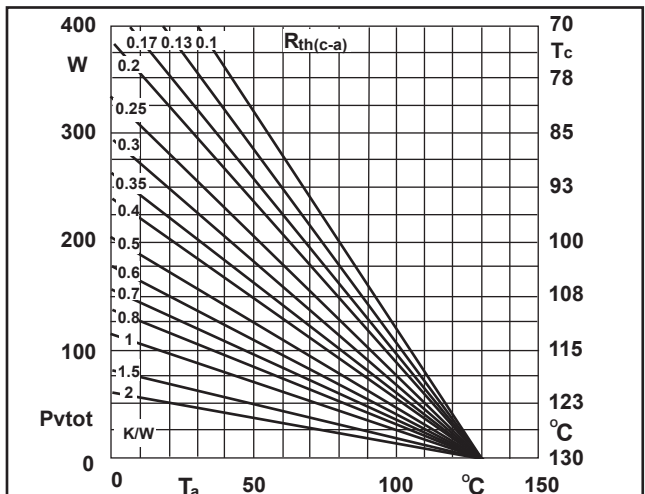
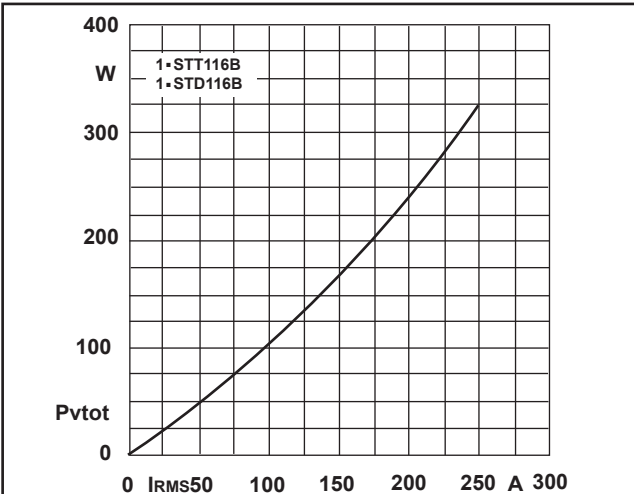
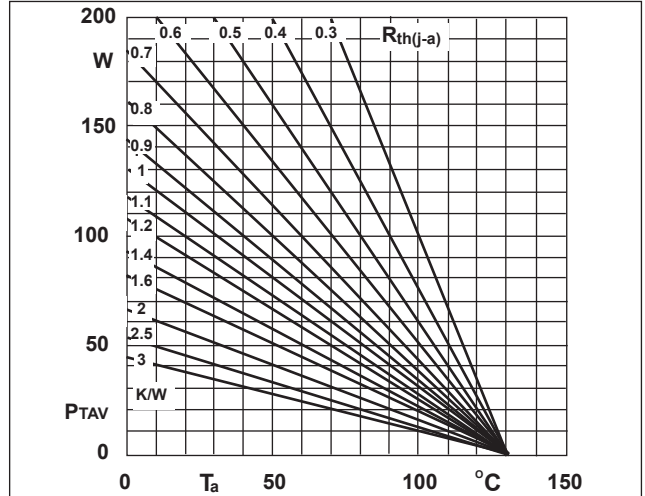
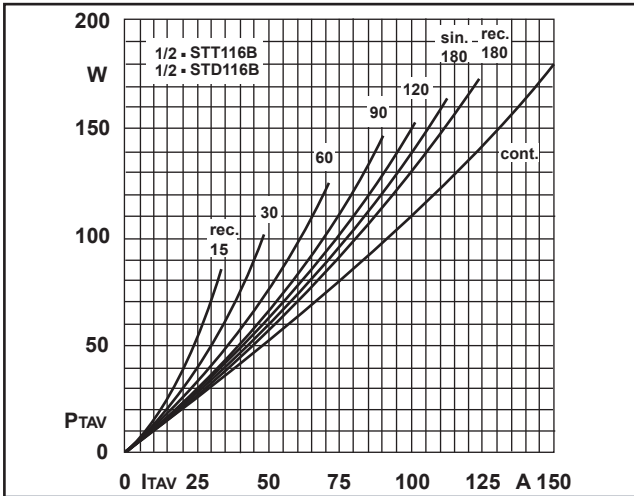
ADVANTAGES

- * Space and weight savings
- * Simple mounting with two screws
- * Improved temperature and power cycling
- * Reduced protection circuits



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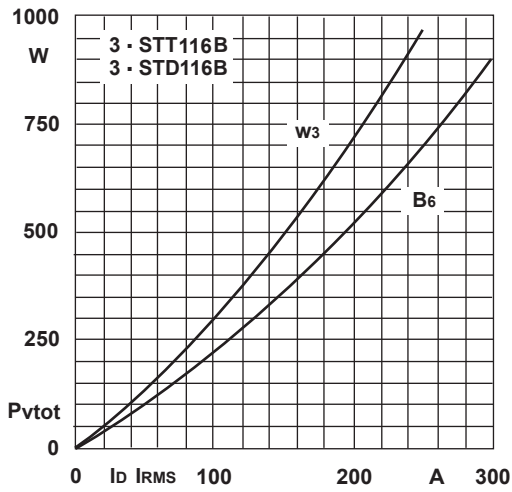


Fig.4L Power dissipation of three modules vs. direct and rms current

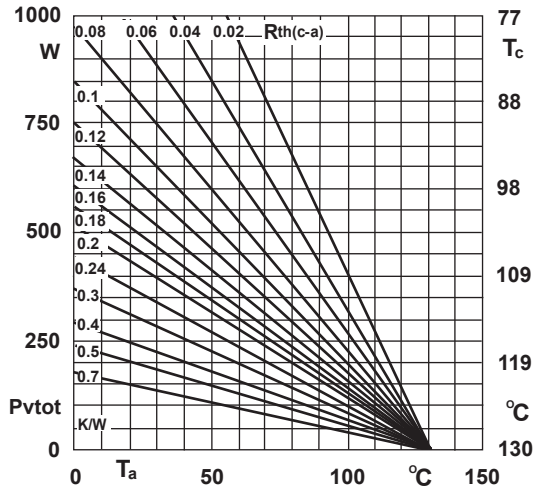


Fig.4R Power dissipation of three modules vs. case temp

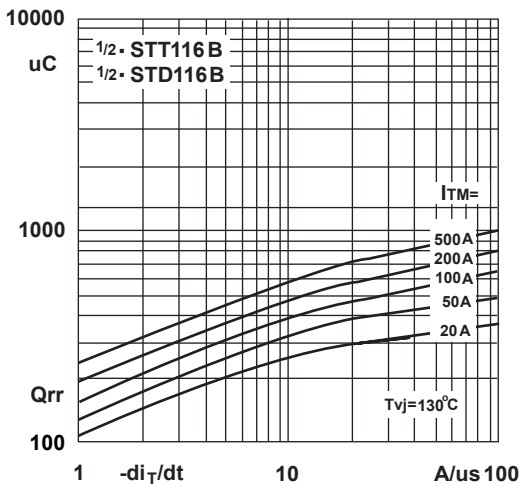


Fig.5 Recovered charge vs. current decrease

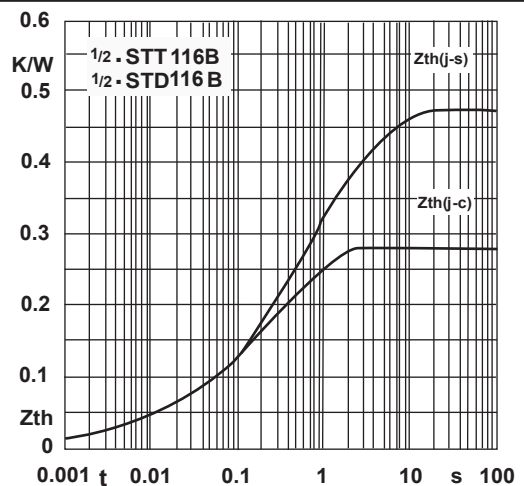


Fig.6 Transient thermal impedance vs. time

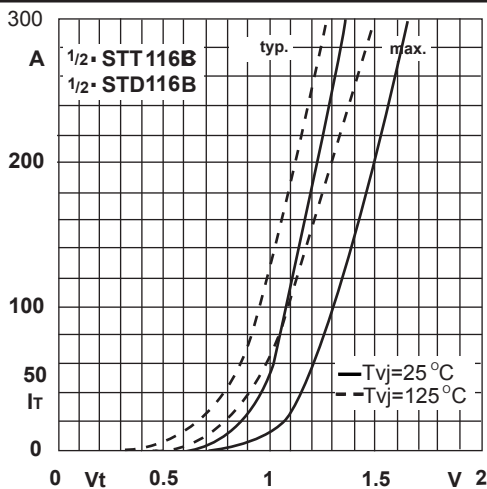


Fig.7 On-state characteristics

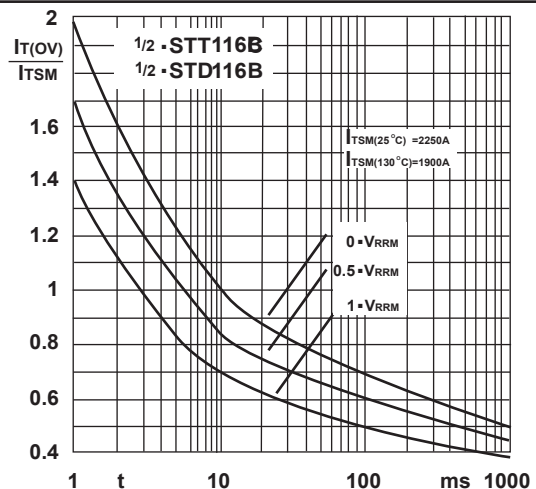


Fig.8 Surge overload current vs. time

