

Key Parameters

V_{DRM}	1400	V
I_{overload}	1200	A
Topology	Antiparallel	
Cooling Method	Air cooling	
Part No.	KP12X14F/J1	

Applications

- Soft Starters
- AC Switch

Remarks

- Recommendation: The stack is suggested to be installed in cabinet with protection higher than IP54.

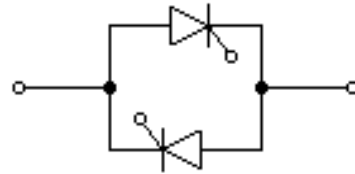
Mechanical Data

Symb.	Parameter	Value	Unit
V	Dimension	123*100*56	mm
m	Weight	1.4	kg

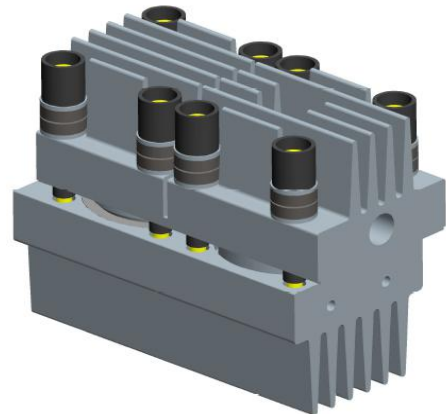
Characteristics

Symb.	Parameter	Condition	Min	Typ.	Max	Unit
I_{overload}	Over load current	Sin180°, 20s, $T_{\text{amb}}=40^{\circ}\text{C}$, $T_{\text{jmax}}=150^{\circ}\text{C}$,	-	-	1200	A
I_{TSM}	Surge (non-repetitive) on-state current	$T_{\text{vj}}=125^{\circ}\text{C}$, ,10ms	-	-	12.5	kA
I^2t	Limiting load integral	$T_{\text{VJM}}\leq 125^{\circ}\text{C}$, DC Voltage	-	-	81.9×10^4	A^2s
V_{RRM}	-	$T_{\text{vj}}=25^{\circ}\text{C}$ 、 125°C , $I_{\text{RRM}}\leq 100\text{mA}$	-	1400	-	V
V_{DRM}	-	$T_{\text{vj}}=25^{\circ}\text{C}$ 、 125°C , $I_{\text{DRM}}\leq 100\text{mA}$	-	1400	-	V
$R_{\text{th(j-s)}}$	-	DC,per thyristor	-	-	0.066	K/W

Topology



Outline



Characteristics

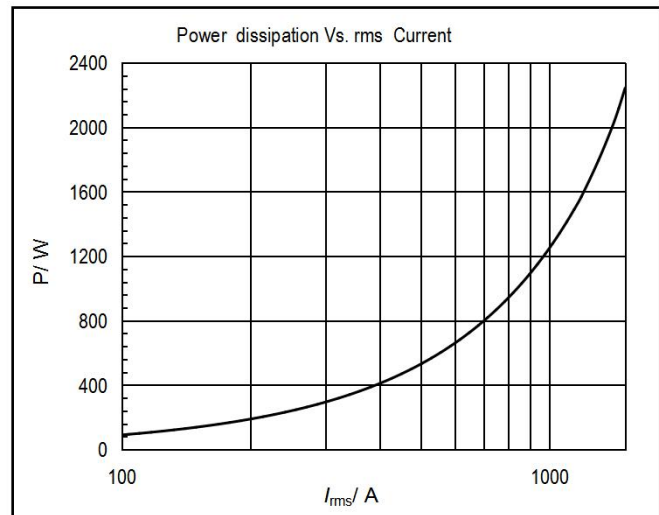
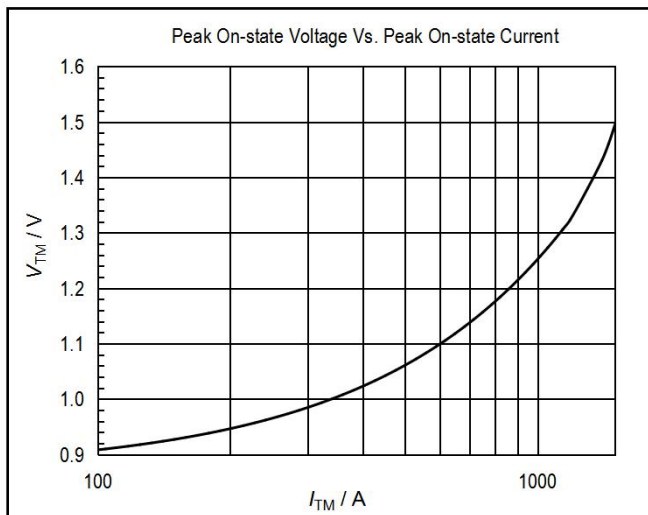
Symb.	Parameter	Condition	Min	Typ.	Max	Unit
V_{TM}	Peak on-state voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$, $I_{TM} = 1500\text{ A}$	-	-	1.5	V
I_{DRM}	Forward leakage current	$T_{vj} = 25\text{ }^{\circ}\text{C}$, $V_{DRM}/V_{RRM} = 1400\text{V}$; per module	-	-	20	mA
I_{RRM}	Reverse leakage current	$T_{vj} = 125\text{ }^{\circ}\text{C}$, $V_{DRM}/V_{RRM} = 1400\text{V}$; per module	-	-	100	mA
V_{TO}	Threshold voltage	$T_{vj} = 125\text{ }^{\circ}\text{C}$	-	-	0.87	V
r_T	Slope resistance	$T_{vj} = 125\text{ }^{\circ}\text{C}$	-	-	0.382	m Ω
I_H	Holding current	$T_{vj} = 25\text{ }^{\circ}\text{C}$	-	-	200	mA
I_L	Latching current	$T_{vj} = 25\text{ }^{\circ}\text{C}$	-	-	1000	mA

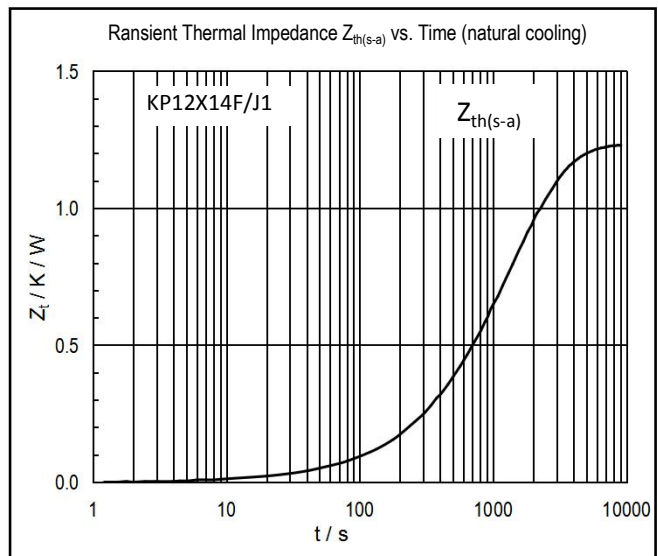
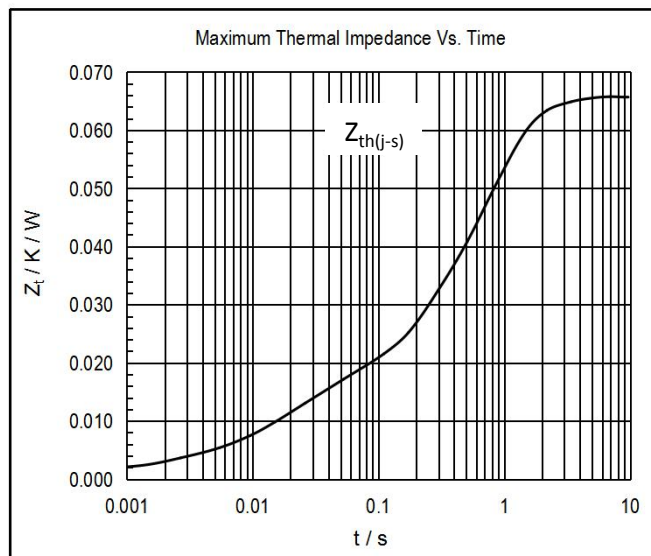
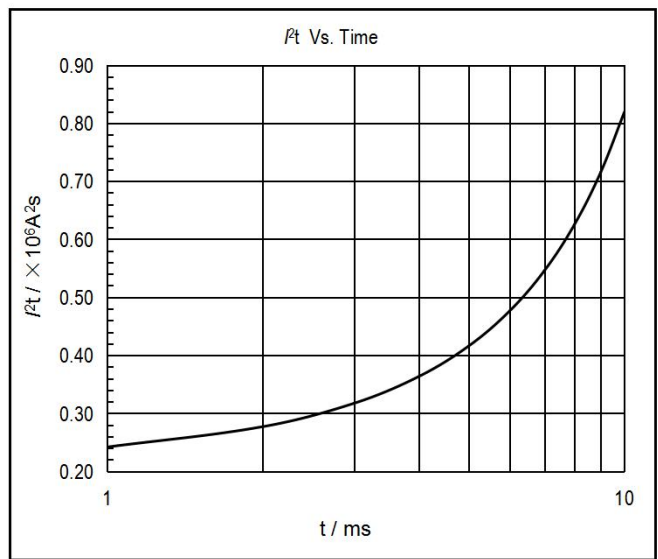
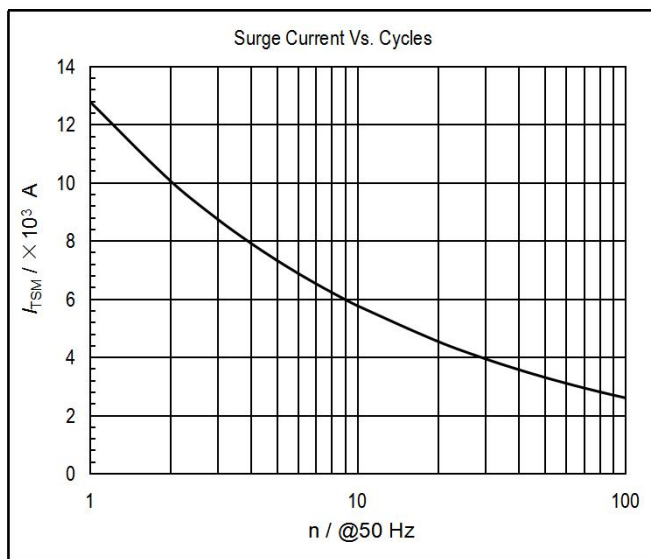
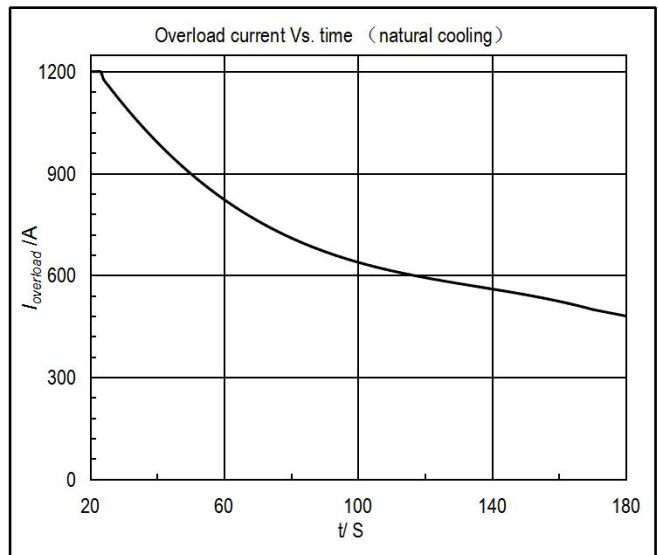
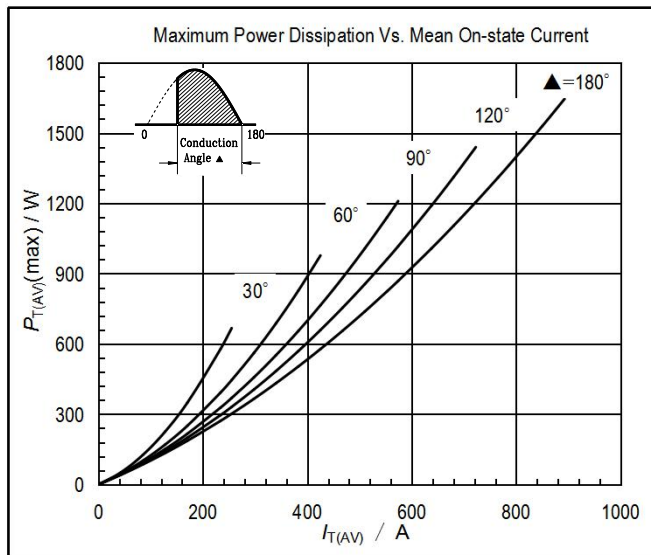
Dynamic Parameters

Symb.	Parameter	Condition	Min	Typ.	Max	Unit
dv/dt	Critical rate of rise of off-state voltage	$T_{vj} = 125\text{ }^{\circ}\text{C}$, $V_{DM} = 0.67 V_{DRM}$, $f = 50\text{Hz}$	1000	-	-	V/ μs
di/dt	Critical rate of rise of on-state current	$T_{vj} = 125\text{ }^{\circ}\text{C}$, $V_{DM} = 0.67 V_{DRM}$, $f = 50\text{ Hz}$ $I_{TM} = 1000\text{ A}$, $I_{FG} = 2\text{ A}$, $tr = 0.5\text{ }\mu\text{s}$	-	-	200	A/ μs
t_q	Turn-off time	$T_{vj} = 125\text{ }^{\circ}\text{C}$, $V_{DM} = 0.67 V_{DRM}$, $I_T = 1000\text{ A}$ $dv/dt = 20\text{ V}/\mu\text{s}$, $V_R = 200\text{ V}$, $-di/dt = 10\text{ A}/\mu\text{s}$	-	150	-	μs
Q_{rr}	Reverse recovery charge	$T_{vj} = 125\text{ }^{\circ}\text{C}$, $-di/dt = 10\text{ A}/\mu\text{s}$, $I_T = 1000\text{ A}$, $V_R = 200\text{ V}$	-	1500	-	μC

Gate Parameters

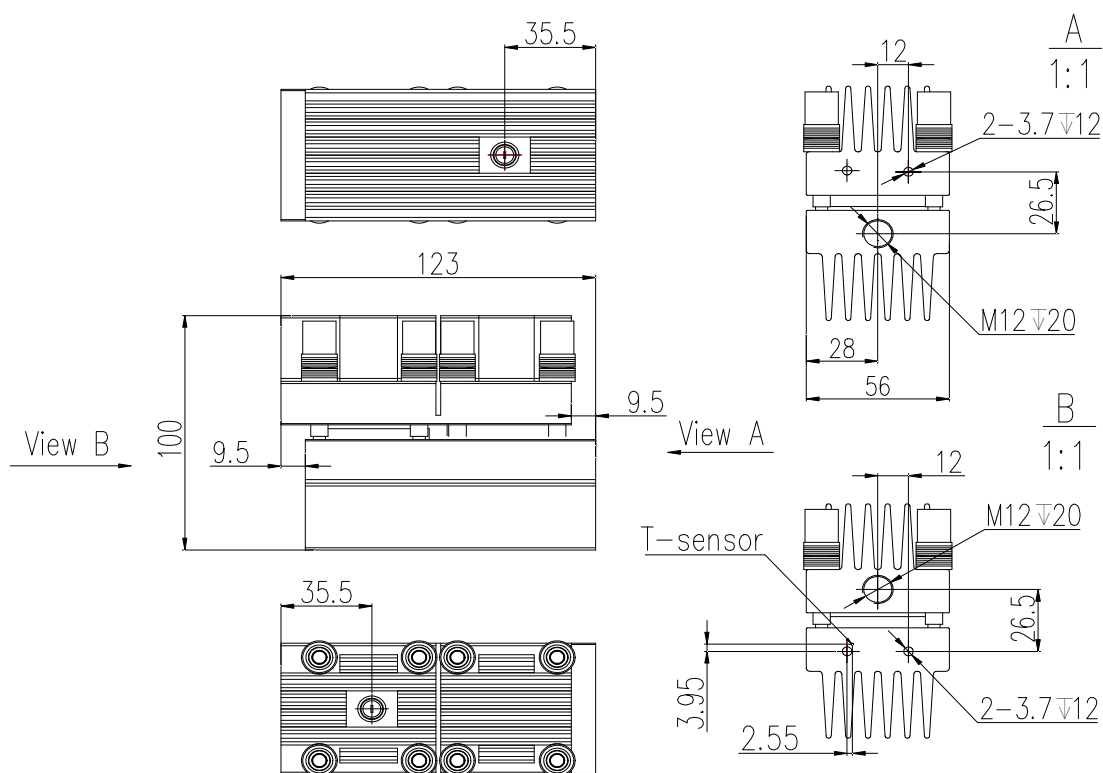
Symb.	Parameter	Condition	Min	Typ.	Max	Unit
I_{GT}	Gate trigger gate	$T_{vj} = 25\text{ }^{\circ}\text{C}$	-	-	200	mA
V_{GT}	Gate trigger voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$	-	-	3	V
V_{GD}	Gate non-trigger voltage	$T_{vj} = 125\text{ }^{\circ}\text{C}$, $V_D = 0.4 V_{DRM}$	0.3	-	-	V
V_{FGM}	Peak forward gate voltage		-	-	12	V
V_{RGM}	Peak reverse gate voltage		-	-	5	V
I_{FGM}	Peak forward gate current		-	-	4	A
P_{GM}	Gate power losses		-	-	20	W
$P_{G(AV)}$	Gate power losses (mean)		-	-	4	W





Environmental parameter

Storage temperature	-40	25	140	°C
Operating temperature	-20	25	80	°C
Humidity	0	-	80	%
Class of pollution	-	II	-	-

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