THYRISTOR MODULE

SBA500AA

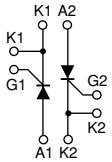
UL;E76102(M)

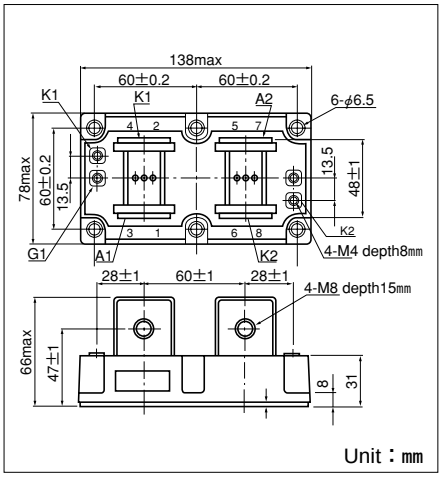
Power Thyristor Module **SBA500AA** series are designed for high power rectifier control applications. Two independent thyristor elements in a electrically isolated package enable you to achieve flexible design, especially for AC switch application, idial terminal location for bus bar connection helps both your mechanical design and mounting procedure be more efficient. SBA series for two thyristors with blocking voltage up to 1600V are available.

Isolated mounting base
- $I_{T(AV)}$ 500A, $I_{T(RMS)}$ 785A
- di/dt 200 A/ μs
- dv/dt 500V/ μs

(Applications)
Various rectifiers
AC/DC motor drives
Heater controls
Light dimmers
Static switches

Internal Configurations





■Maximum Ratings

Symbol	Item	Ratings				Unit
		SBA500AA40	SBA500AA80	SBA500AA120	SBA500AA160	
V_{DRM}	Repetitive Peak Off-State Voltage	400	800	1200	1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	480	960	1350	1700	V
V_{RRM}	Repetitive Peak Reverse Voltage	400	800	1200	1600	V

Symbol	Item		Conditions	Ratings	Unit
$I_{T(AV)}$	Average On-State Current		Single phase, half wave, 180° conduction, Tc : 66℃	500	A
$I_{T(RMS)}$	R.M.S. On-State Current		Single phase, half wave, 180° conduction, Tc : 66℃	785	A
I_{TSM}	Surge On-State Current		½cycle, 50Hz/60Hz, peak Value, non-reqetitive	9.1/10.0	kA
I^2t	I^2t		Value for one cycle of surge current	416	kA^2S
P_{GM}	Peak Gate Power Dissipation			15	W
$P_{G(AV)}$	Average Gate Power Dissipation			5	W
I_{FGM}	Peak Gate Current			5	A
V_{FGM}	Peak Gate Voltage (Forward)			10	V
V_{RGM}	Peak Gate Voltage (Reverse)			5	V
di/dt	Critical Rate of Rise of On-State Current		I_G=200mA, V_D=½V_{DRM}, dI_G/dt=0.2A/μs	200	A/μs
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)		A.C. 1 minute	2500	V
Tj	Operating Junction Temperature			−40 to +125	℃
Tstg	Storage Temperature			−40 to +125	℃
	Mounting Torque	Mounting (M6)	Recommended Value 2.5-3.9	4.7	N・m
			(Recommended Value 25-40)	(48)	(kgf・cm)
		Terminal (M8)	Recommended Value 8.8-10	11.0	N・m
			(Recommended Value 90-105)	(115)	(kgf・cm)
		Terminal (M4)	Recommended Value 1.0-1.4	1.5	N・m
			(Recommended Value 10-14)	(15)	(kgf・cm)
	Mass		Typical Value	1100	g

■Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Repetitive Peak Off-State Current, max.	at V_{DRM}, Single phase, half wave, Tj=125℃	150	mA
I_{RRM}	Repetitive Peak Reverse Current, max.	at V_{DRM}, Single phase, half wave, Tj=125℃	150	mA
V_{TM}	Peak On-State Voltage, max.	I_T=1500A	1.45	V
I_{GT}	Gate Trigger Current, max.	V_D=6V, I_T=1A	200	mA
V_{GT}	Gate Trigger Voltage, max.	V_D=6V, I_T=1A	3	V
V_{GD}	Non-Trigger Gate, Voltage. min.	Tj=125℃, V_D=½V_{DRM}	0.25	V
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	Tj=125℃, V_D=⅔V_{DRM}, exp, waveform	500	V/μs
Rth(j-c)	Thermal Impedance, max.	Junction to case	0.085	℃/W

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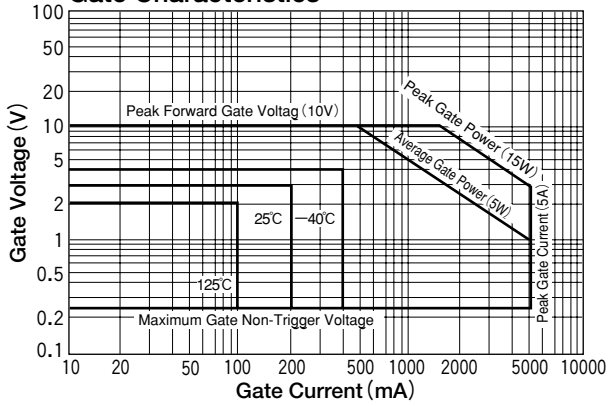
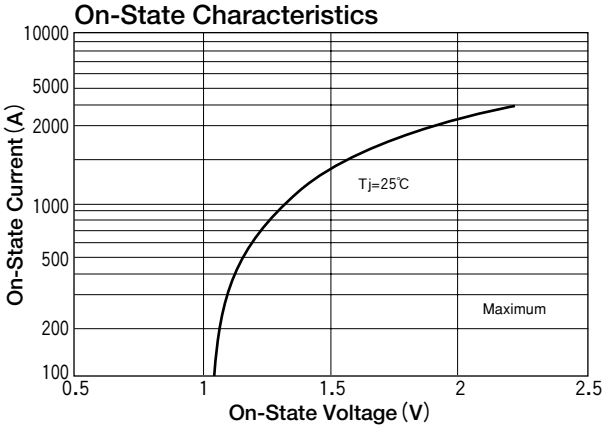
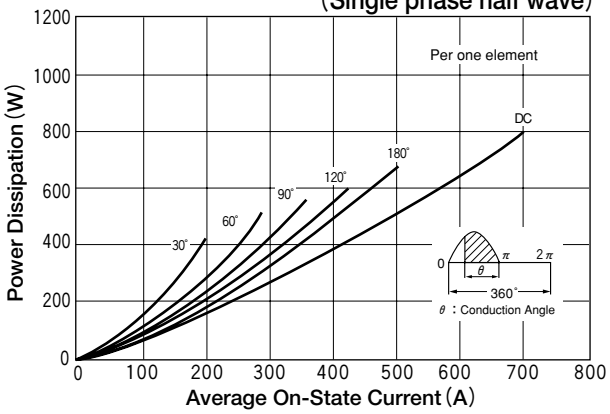
Gate Characteristics



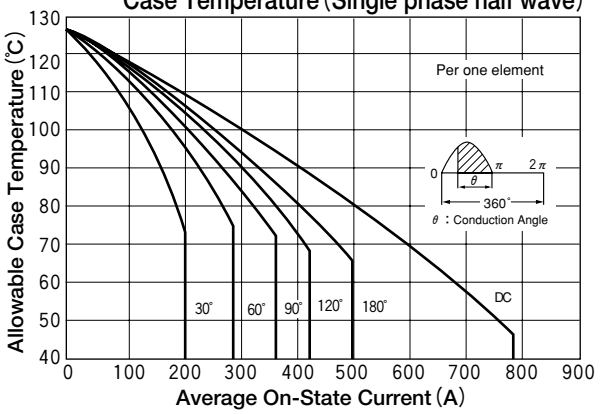
On-State Characteristics



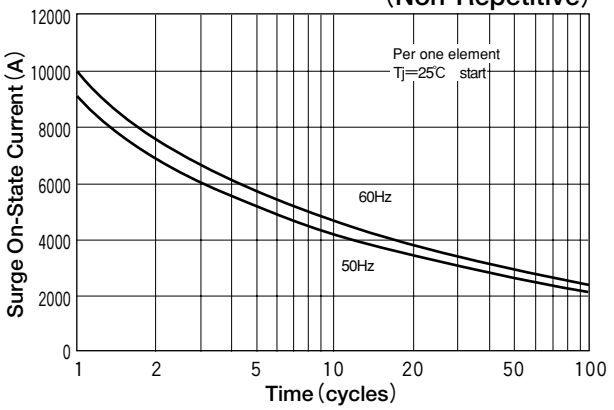
Average On-State Current Vs Power Dissipation (Single phase half wave)



Average On-State Current Vs Maximum Allowable Case Temperature (Single phase half wave)



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance