RS04xx Series 4A TRIACS

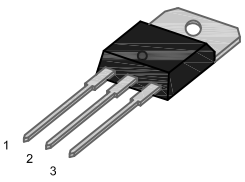
DESCRIPTION:

High current density due to double mesa technology, SIPOS and Glass Passivation.

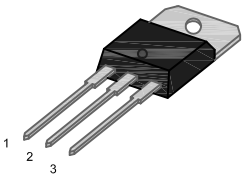
RS04xxA/B series triacs is suitable for general purpose AC switching,They can be used as an ON/OFF function in applications such as static relays,heating regulation, induction motor stating circuits...or for phase contol operation, light dimmers,motor speed controllers.

RS04xxA/B-TW -SW -CW are 3 quadrants triacs,They are specially recommended for use on inductive loads.

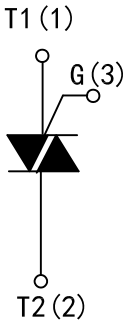
RS04xxA are isolated in internal, they provide a 2500V RMS isolation voltage from all three terminals to extemal heat sink.



RS04xxB (TO-220AB non-insulated)



RS04xxA (TO-220AB insulated)



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600 and 800	V
V_{TM}	1.55	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	˚C
Operrating junction temperature range		Tj	-40 to +125	˚C
Repetitive Peak Off-state Voltage	Tj=25˚C	V_{DRM}	600and800	V
Repetitive Peak Reverse Voltage	Tj=25˚C	V_{RRM}	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25˚C	V_{DSM}	700and900	V
Non repetitive Peak Reverse Voltage		V_{RSM}	700and900	
RMS on-state current (full sine wave)	TO-220AB Tc=95˚C	$I_{T(RMS)}$	4	A
	TO-220AB insulated Tc=90˚C			
Non repetitive surge peak on-state current (full cycle,Tj=25˚C)	f = 60 Hz t=16.7ms	I_{TSM}	42	A
	f = 50 Hz t=20ms		40	
I^2t Value for fusing	tp=10ms	I^2t	8	A^2s
Critical rate of rise of on-state current $I_G=2\times I_{GT}$, tr≤100 ns, f=120Hz, Tj=125˚C		dI /dt	50	A/μs
Peak gate current	tp=20us,Tj=125˚C	I_{GM}	4	A
Average gate power dissipation	Tj=125˚C	$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

● 3 Quadrants

Symbol	Test Condition	Quadrant		RS04xx				Unit
				TW	SW	CW	BW	
I_{GT}	V_D=12V R_L=33Ω	I-II-III	MAX.	5	10	35	50	mA
V_{GT}		I-II-III	MAX.	1.5				V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =125℃	I-II-III	MIN.	0.2				V
I_L	I_G=1.2I_{GT}	I-III	MAX.	15	20	50	70	mA
		II	MAX.	25	35	60	80	mA
I_H	I_T =100mA		MAX.	10	15	40	60	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	20	40	400	1000	V/μs
(dV/dt)c	(dI/dt)c=1.7A/ms Tj=125℃		MIN.	0.5	1	10	25	V/μs

● 4 Quadrants

Symbol	Test Condition	Quadrant		RS04xx				Unit
				T	D	S	A	
I_{GT}	V_D=12V R_L=33Ω	I-II-III IV	MAX.	5 5	5 10	10 10	10 25	mA
V_{GT}		ALL	MAX.	1.5				V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =125℃	ALL	MIN.	0.2				V
I_L	I_G=1.2I_{GT}	I-III-IV	MAX.	20	20	30	30	mA
		II	MAX.	35	35	45	45	mA
I_H	I_T =100mA		MAX.	15	15	25	25	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	5	5	10	10	V/μs
(dV/dt)c	(dI/dt)c=1.7A/ms Tj=125℃		MIN.	0.1	0.1	0.5	0.5	V/μs

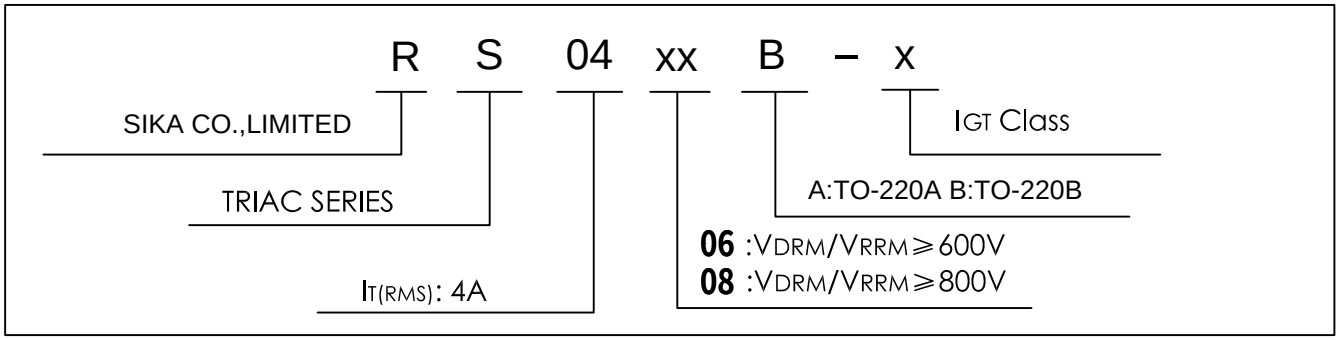
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=5.5A,tp=380μs	Tj=25℃	1.55	V
I_{DRM} I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	5	μA
		Tj=125℃	1	mA

THERMAL RESISTANCES

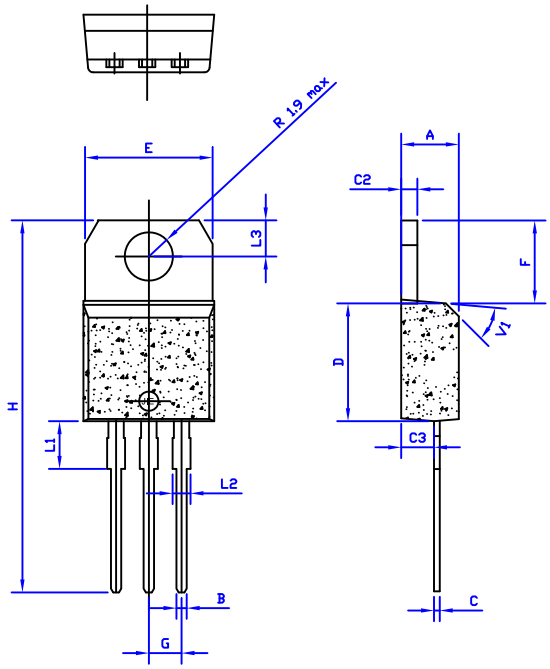
Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	TO-220AB	2.4	℃/W
		TO-220AB insulated	3.3	

ORDERING INFORMATION



PACKAGE MECHANICAL DATA

TO-220AB and TO-220AB insulated



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.46		0.70	0.018		0.027
C2	1.23		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	9.8		10.4	0.386		0.409
F	6.2		6.6	0.244		0.259
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.75			0.147	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		40°			40°	

FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

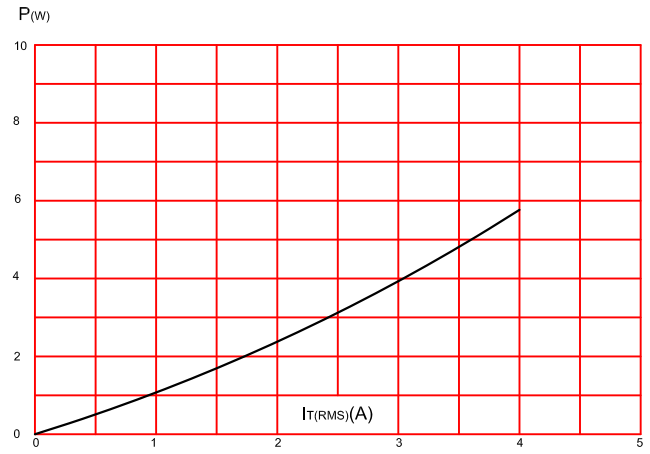


FIG.2:RMS on-state current versus case temperature(full cycle)

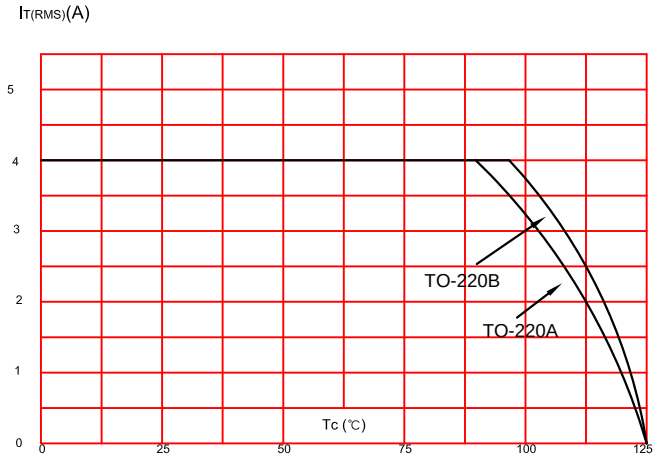


FIG.3:On-state characteristics (maximum values).

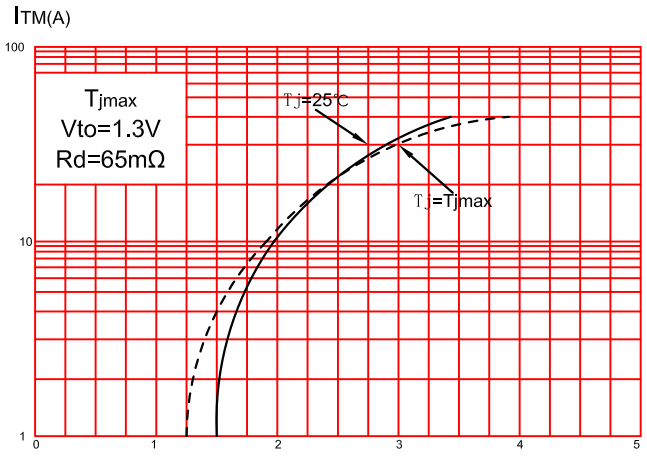


FIG.4:Surge peak on-state current versus number of cycles.

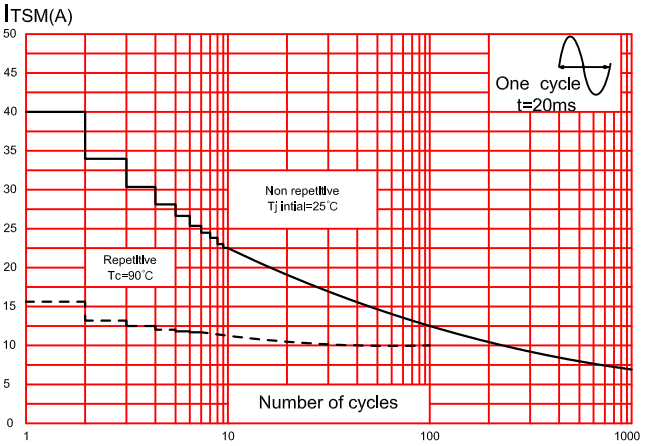


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

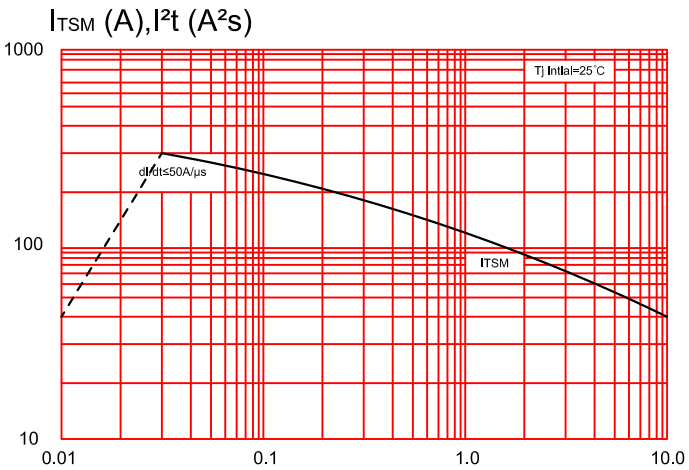
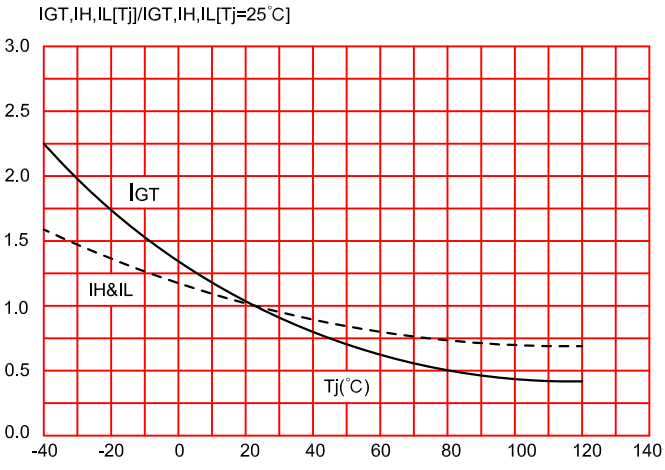


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)



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