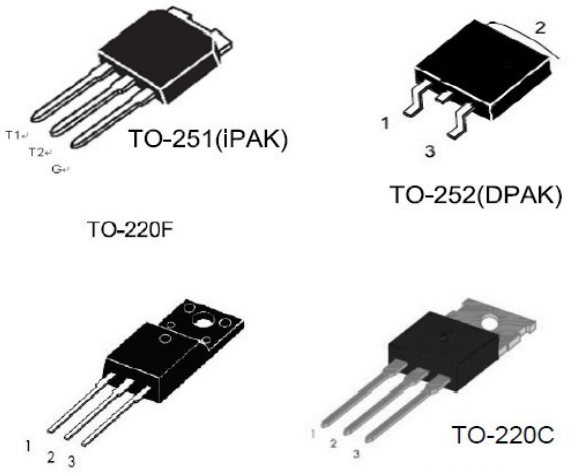
RS04x06 Series 4A TRIACS

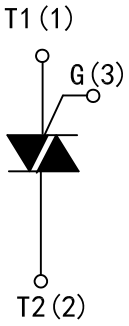
DESCRIPTION:

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

RS04x06 -D -E -F -G 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.





MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600 and 800	V
V_{TM}	1.7	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}	600 and 800	V
Repetitive Peak Reverse Voltage	Tj=25˚C	V_{RRM}	600 and 800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25˚C	V_{DSM}	700 and 900	V
Non repetitive Peak Reverse Voltage		V_{RSM}	700 and 900	
RMS on-state current (full sine wave)	Tc=107˚C	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle,Tj=25˚C)	f = 60 Hz、t=16.7ms	I_{TSM}	27	A
	f = 50 Hz、t=20ms		25	
I^2t Value for fusing	tp=10ms	I^2t	3.1	A^2s
Critical rate of rise of on-state current $I_G=2\times I_{GT}$, tr≤100 ns, f=120Hz, Tj=125˚C	I-II-III IV	dI /dt	50 10	A/μs
Peak gate current tp=20us,Tj=125˚C		I_{GM}	2	A
Peak gate power tp=20us,Tj=125˚C		P_{GM}	5	W
Average gate power dissipation Tj=125˚C		$P_{G(AV)}$	0.5	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		RS04x06				Unit
				D	E	F	G	
I_{GT}	V_D=12V R_L=33Ω	I-II-III IV	MAX.	5 10	10 25	25 70	50 100	mA
V_{GT}		ALL	MAX.	1.3				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.	15	30	40	60	mA
		II	MAX.	20	40	60	90	mA
I_H	I_T =100mA		MAX.	10	25	30	60	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	5	10	50	200	V/μs
(dV/dt)c	(dI/dt)c=1.8A/ms Tj=125℃		MIN.	1	2	5	10	V/μs

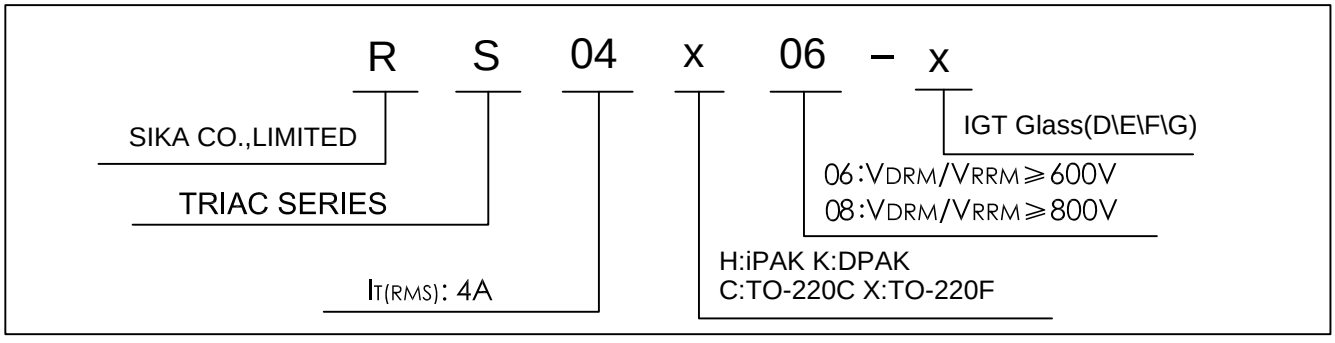
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=5A,tp=380μs	Tj=25℃	1.7	V
I_{DRM} I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	5	μA
		Tj=125℃	1	mA

THERMAL RESISTANCES

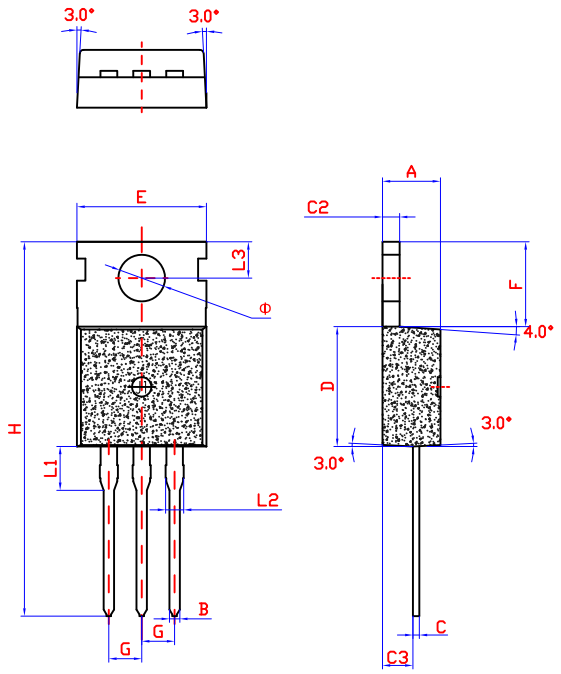
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to Case(AC)	3.0	℃/W

ORDERING INFORMATION



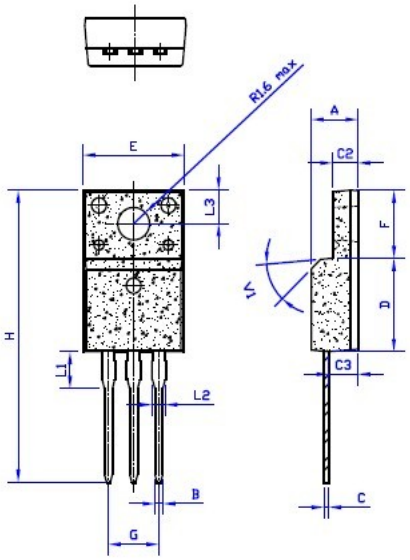
PACKAGE MECHANICAL DATA

TO-220C



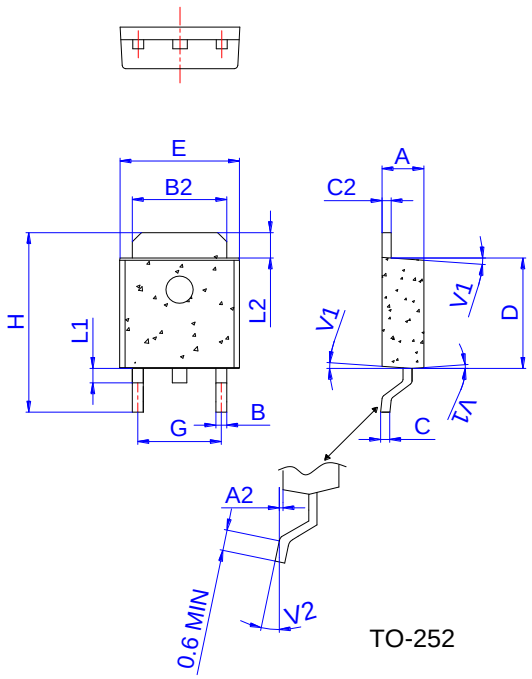
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.7		0.9	0.027		0.035
C	0.45		0.6	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.2		2.6	0.086		0.102
D	8.9		9.9	0.350		0.390
E	9.9		10.3	0.390		0.406
F	6.3		6.9	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.2			0.126	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	

TO-220F



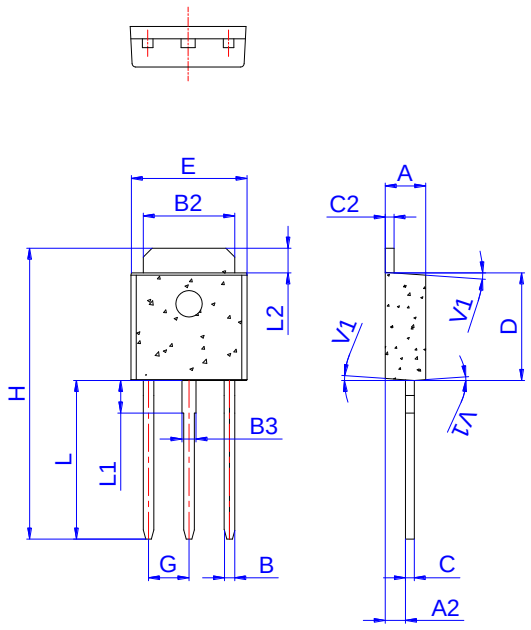
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.8	0.173		0.189
B	0.74	0.8	0.83	0.029	0.031	0.033
C	0.5		0.75	0.020		0.030
C2	2.4		2.7	0.094		0.106
C3	2.6		3.0	0.102		0.118
D	8.8		9.3	0.346		0.367
E	9.7		10.3	0.382		0.406
F	6.4		6.8	0.252		0.268
G	5.0		5.2	0.197		0.205
H	28.0		29.8	11.0		11.7
L1		3.63			0.143	
L2	1.14		1.7	0.044		0.067
L3		3.3			0.130	
V1		40°			40°	

PACKAGE MECHANICAL DATA



TO-252

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°



TO-251

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	

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

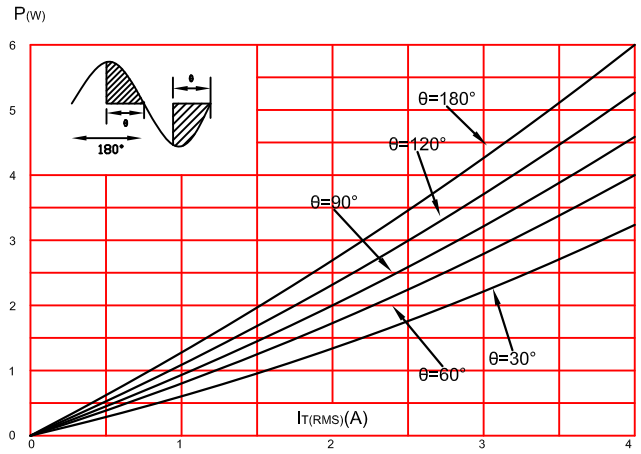


FIG.2:RMS on-state current versus case temperature(full cycle)

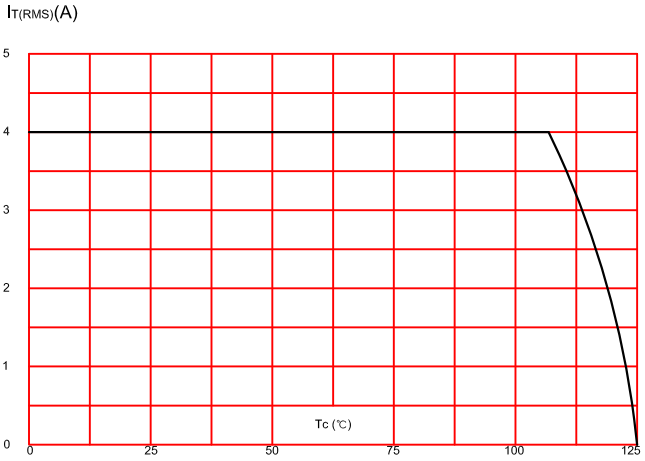


FIG.3:On-state characteristics (maximum values).

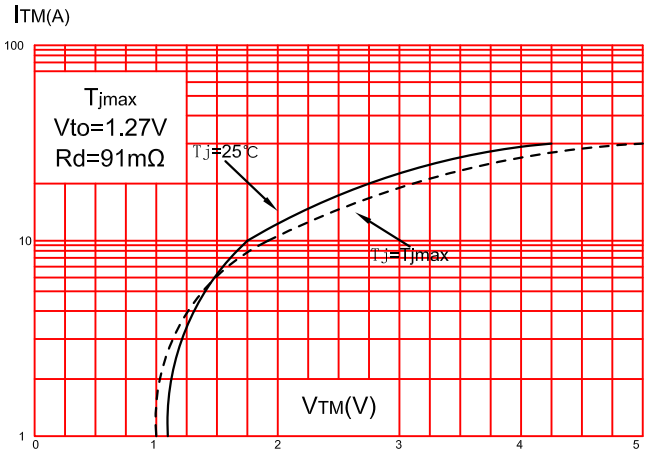


FIG.4:Surge peak on-state current versus number of cycles.

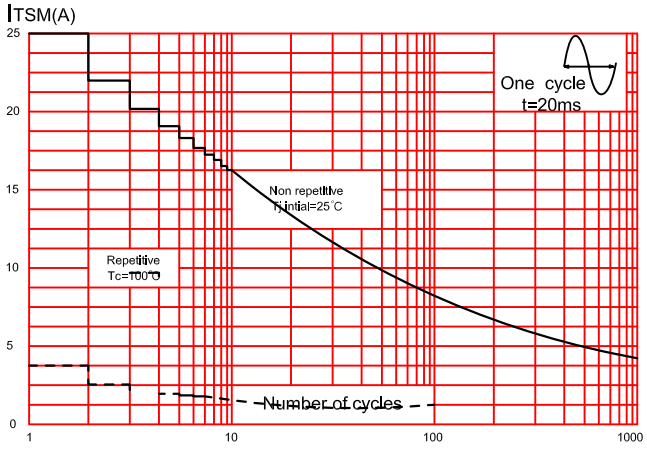


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

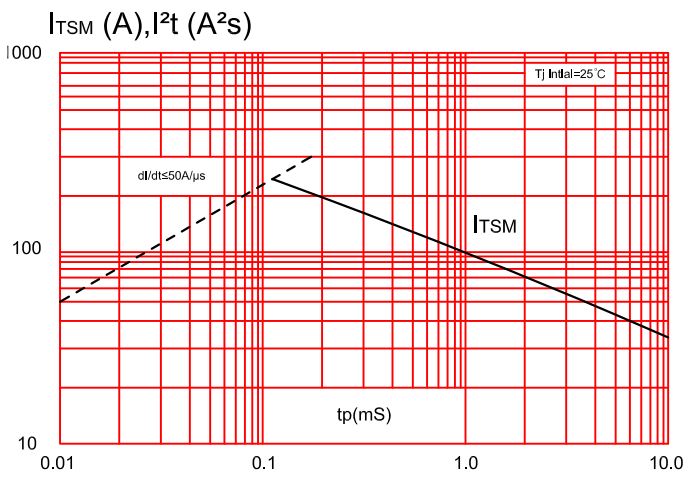
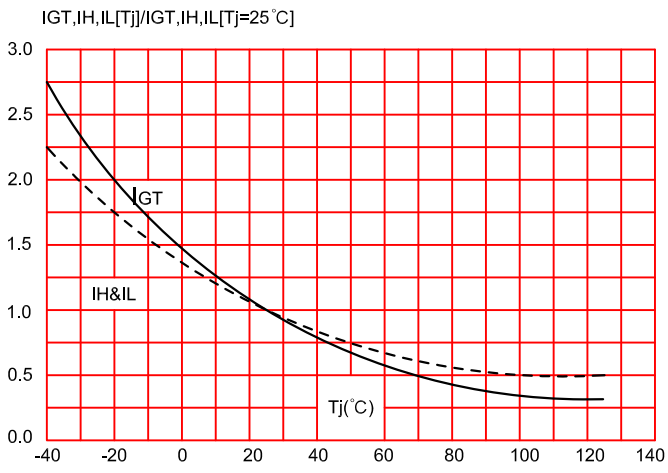


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)



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