

RS1206x Series 12A TRIACS
DESCRIPTION:

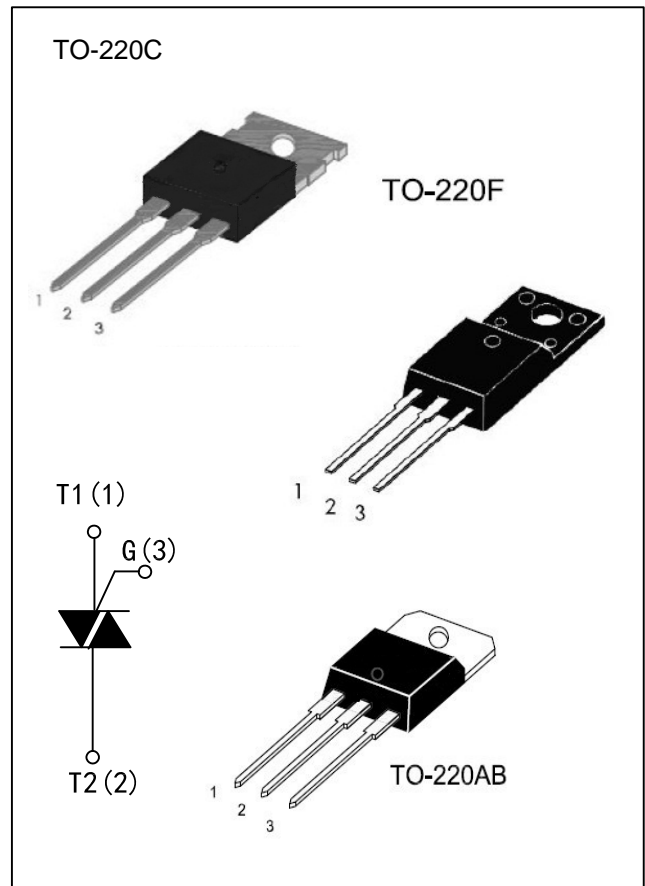
High current density due to double mesa technology, SIPOS and Glass Passivation.

RS1206x -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 starting circuits...or for phase control operation, light dimmers, motor speed controllers.

MAIN FEATURES

Symbol	Value	Unit
IT(RMS)	12	A
VDRM/VRRM	600 and 800	V
VTM	1.65	V


ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	°C
Operating junction temperature range		Tj	-40 to +125	°C
Repetitive Peak Off-state Voltage	Tj=25°C	VDRM	600 and 800	V
Repetitive Peak Reverse Voltage	Tj=25°C	VRRM	600 and 800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms, Tj=25°C	VDSM	700 and 900	V
Non repetitive Peak Reverse Voltage		VRSM	700 and 900	
RMS on-state current (full sine wave)	Tc=99°C	IT(RMS)	12	A
Non repetitive surge peak on-state current (full cycle, Tj=25°C)	f = 60 Hz、t=16.7ms	ITSM	105	A
	f = 50 Hz、t=20ms		95	
I²t Value for fusing	tp=10ms	I²t	45	A²s
Critical rate of rise of on-state current IG=2×IGT, tr≤100 ns, f=120Hz, Tj=125°C	I-II-III IV	di /dt	50	A/μs
			10	
Peak gate current	tp=20us, Tj=125°C	IGM	2	A
Peak gate power	tp=20us, Tj=125°C	PGM	5	W
Average gate power dissipation	Tj=125°C	PG(AV)	0.5	W

ELECTRICAL CHARACTERISTICS(T_j=25°C unless otherwise specified)

Symbol	Test Condition	Quadrant		RS1206x				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 T _j =125°C	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 T _j =125°C		MIN.	5	10	50	200	V/μs
(dV/dt) _c	(dI/dt) _c =5.4A/ms T _j =125°C		MIN.	1	2	5	10	V/μs

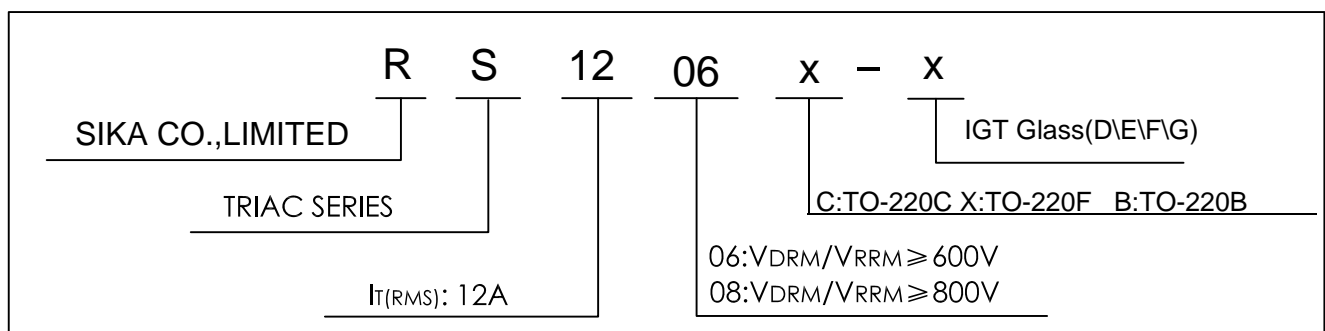
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =15A, t _p =380μs	T _j =25°C	1.65	V
I _{DRM} I _{RRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	5	μA
		T _j =125°C	1	mA

THERMAL RESISTANCES

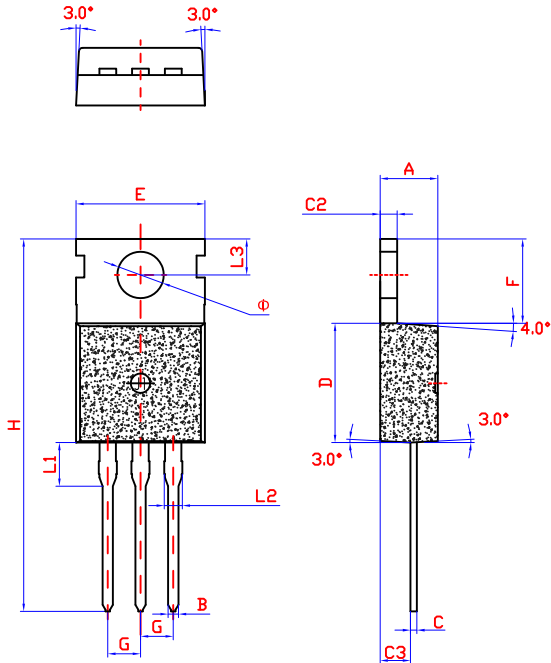
Symbol	Parameter	Value	Unit
R _{th} (J-C)	Junction to Case(AC)	1.5	°C/W

ORDERING INFORMATION

	R	S	12	06	x	-	x
TRIAC SERIES I _{T(RMS)} : 12A					IGT Glass(D\E\F\G) C:TO-220C X:TO-220F B:TO-220B		
					06:V _{DRM} /V _{RRM} ≥ 600V 08:V _{DRM} /V _{RRM} ≥ 800V		

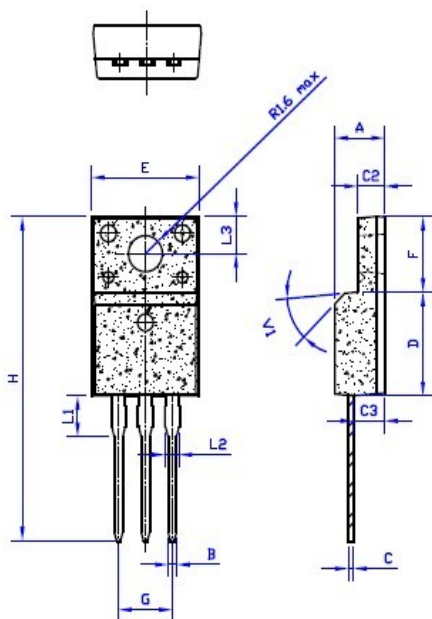
PACKAGE MECHANICAL DATA

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	

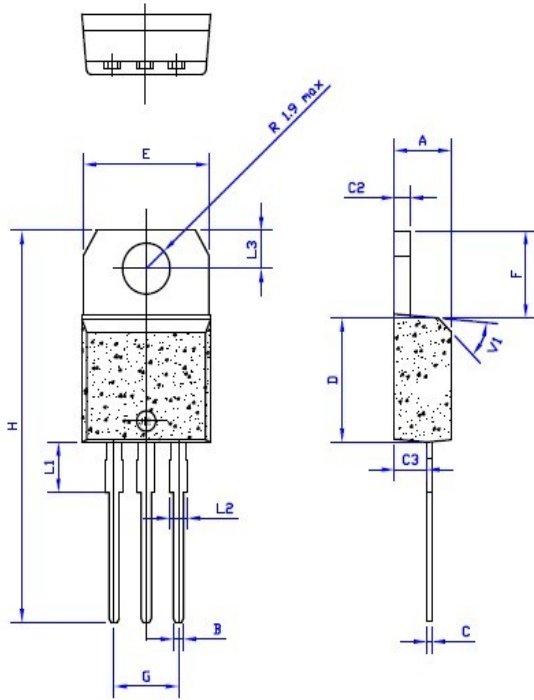
TO-220F



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-220A insulated package and TO-220B non-insulated package



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	4.8		5.4	0.189		0.213
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)

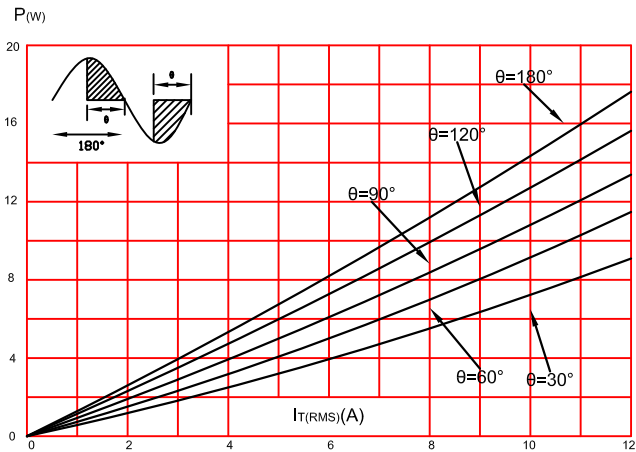


FIG.2:RMS on-state current versus case temperature(full cycle)

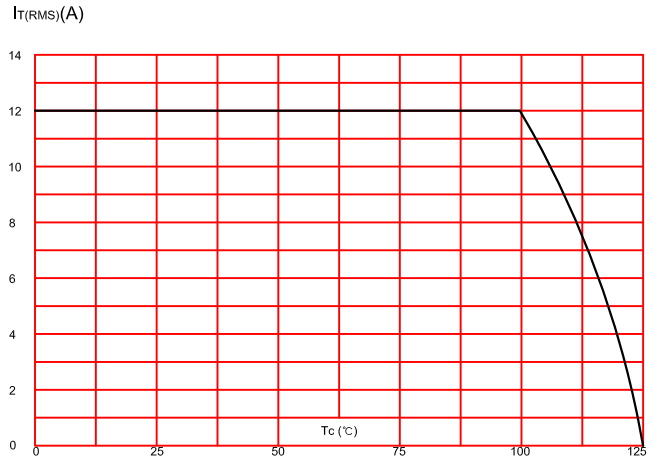


FIG.3:On-state characteristics (maximum values).

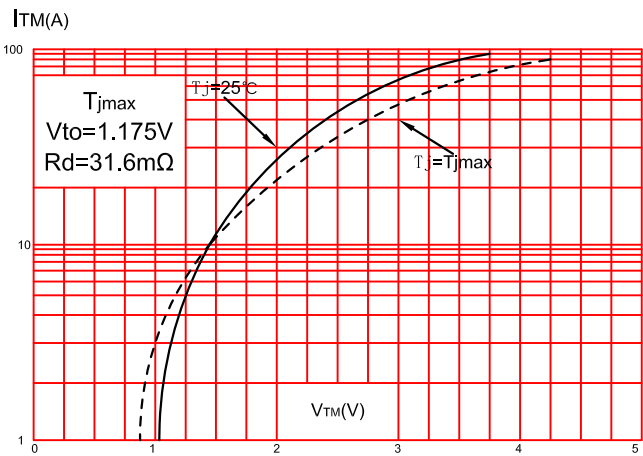


FIG.4:Surge peak on-state current versus number of cycles.

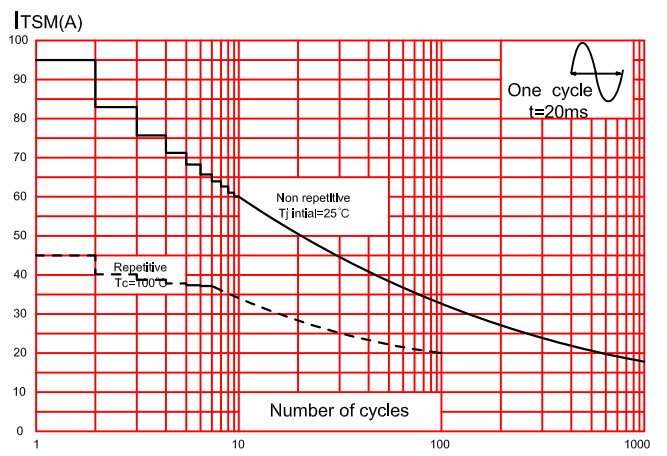


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t .

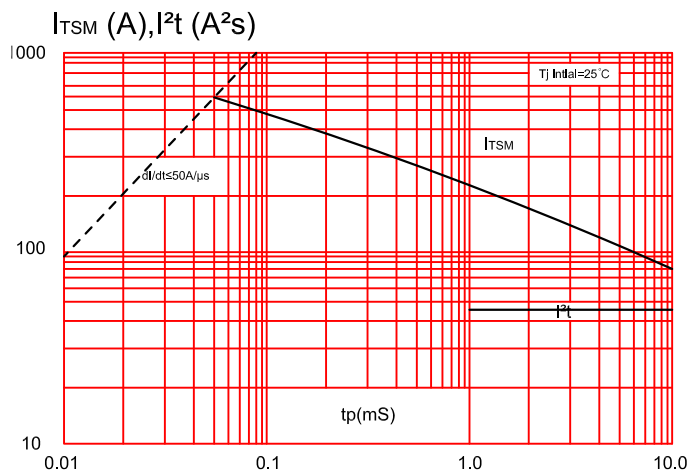


FIG.6:Relative variations of gate trigger current, holding current and latching current versus junction temperature(typical values)

