

RS8xxHxF Series 8A TRIACS

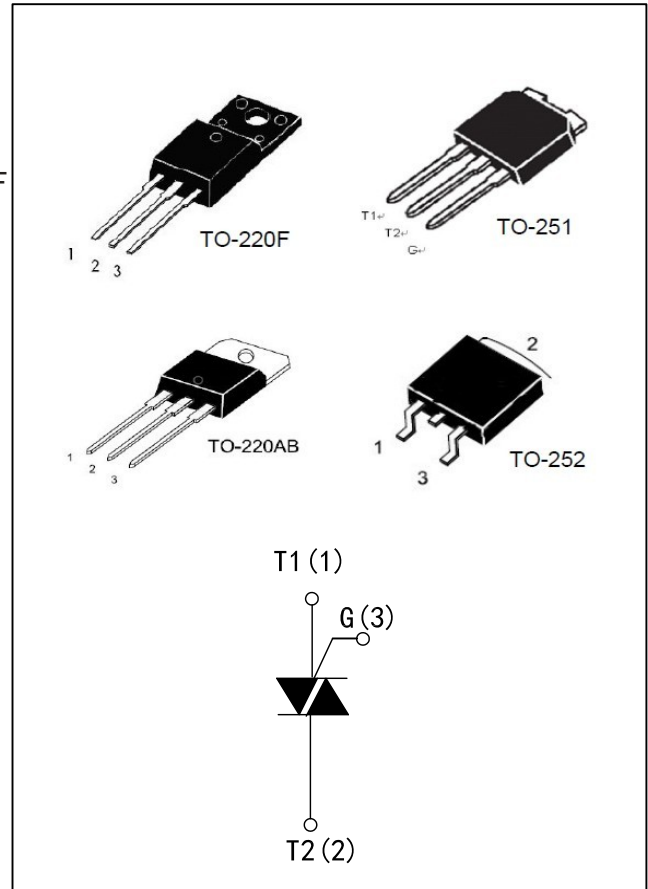
DESCRIPTION:

High current density due to double mesa technology, glass passivation, guaranteed maximum junction temperature 150° C.

RS8xxH series triacs are suitable for general purpose AC switching, They can be used as an ON/OFF function in applications such as static relays, washing machine, soy milk maker, flush toilet, hair drier, induction motor starting circuits...or for phase control operation light dimmers, motor speed controllers.

RS810H-820H-835H-850H are 3 quadrants triacs, They are specially recommended for use on inductive loads.

RS6xxHxF series are full pack plastic e, they provide a 2000V RMS isolation voltage from all three terminals to external heat sink.



MAIN FEATURES

Symbol	Value	Unit
$I_T(RMS)$	8	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
Operating junction temperature range		Tj	-40 to +150	°C
Repetitive Peak Off-state Voltage	Tj=25°C	VDRM	600and800	V
Repetitive Peak Reverse Voltage	Tj=25°C	VRRM	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms, Tj=25°C	VDSM	700and900	V
Non repetitive Peak Reverse Voltage		VRSM	700and900	
RMS on-state current (full sine wave)	TO-220F Tc=100°C	IT(RMS)	8	A
Non repetitive surge peak on-state current (full cycle, Tj=25°C)	f = 60 Hz t=16.7ms	ITSM	84	A
	f = 50 Hz t=20ms		80	
I²t Value for fusing	tp=10ms	I²t	36	A²s
Critical rate of rise of on-state current IG=2×IGT, tr≤100 ns, f=120Hz, Tj=150°C		di /dt	50	A/µs
Peak gate current	tp=20us, Tj=150°C	IGM	2	A
Peak gate power	tp=20us, Tj=150°C	PGM	5	W
Average gate power dissipation	Tj=150°C	PG(AV)	1	W

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

Symbol	Test Condition	Quadrant		Limits				Unit
				RS810H	RS820H	RS835H	RS850H	
I _{GT}	V _D =12V R _L =33Ω	I-II-III	MAX.	10	20	35	50	mA
V _{GT}		I-II-III	MAX.	1.5				V
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ T _j =150°C	I-II-III	MIN.	0.2				V
I _L	I _G =1.2I _{GT}	I-III	MAX.	20	40	50	70	mA
		II	MAX.	35	55	70	100	mA
I _H	I _T =100mA		MAX.	20	30	45	60	mA
dV/dt	V _D =67%V _{DRM} gate open T _j =150°C		MIN.	200	500	1000	1500	V/μs
(dV/dt) _c	V _D =400V (di/dt) _c =-3.5A/ms T _j =150°C		MIN.	1	5	15	20	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =11A, t _p =380μs	T _j =25°C	1.55	V
I _{DRM} I _{RRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	5	μA
		T _j =150°C	2.0	mA

THERMAL RESISTANCES

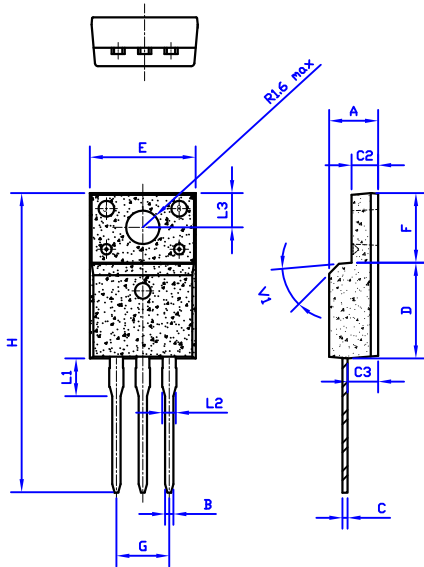
Symbol	Parameter		Value	Unit
R _{th} (J-C)	Junction to Case(AC)	TO-220F	2.5	°C/W

ORDERING INFORMATION

R S 8 xx H x F	
SIKO CO., LIMITED TRIAC SERIES I _{T(RMS)} : 8A 10: I _{GT} 123≤10mA 20: I _{GT} 123≤20mA 35: I _{GT} 123≤35mA 50: I _{GT} 123≤50mA	F: TO-220F A: TO-220A B: TO-220B K: DPAK H: iPAK E: D ² PAK 6: V _{DRM} /V _{RRM} ≥ 600V 8: V _{DRM} /V _{RRM} ≥ 800V High junction temperature

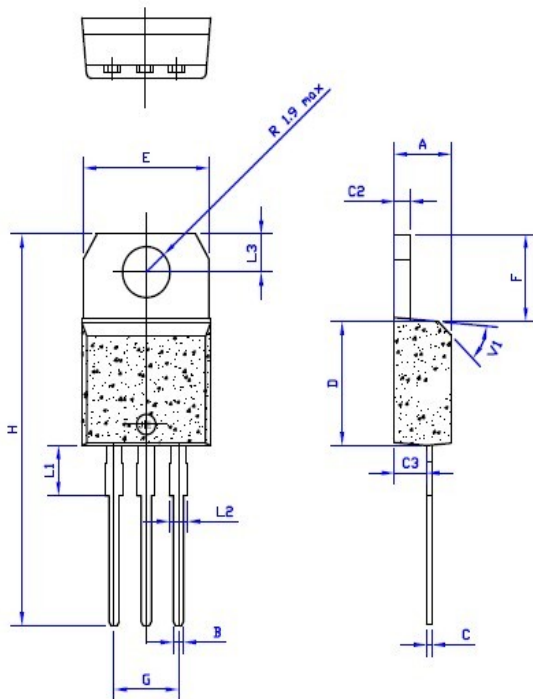
PACKAGE MECHANICAL DATA

TO-220F



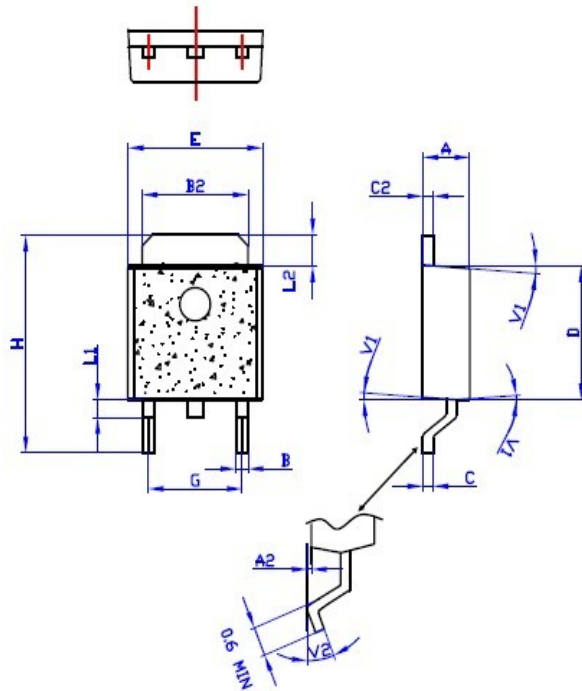
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.8	0.173		0.189
B	0.74	0.8	0.83	0.029	0.031	0.033
C	0.5		0.75	0.020		0.030
C2	2.4		2.7	0.094		0.106
C3	2.6		3.0	0.102		0.118
D	8.8		9.3	0.346		0.367
E	9.7		10.3	0.382		0.406
F	6.4		6.8	0.252		0.268
G	5.0		5.2	0.197		0.205
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°	

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



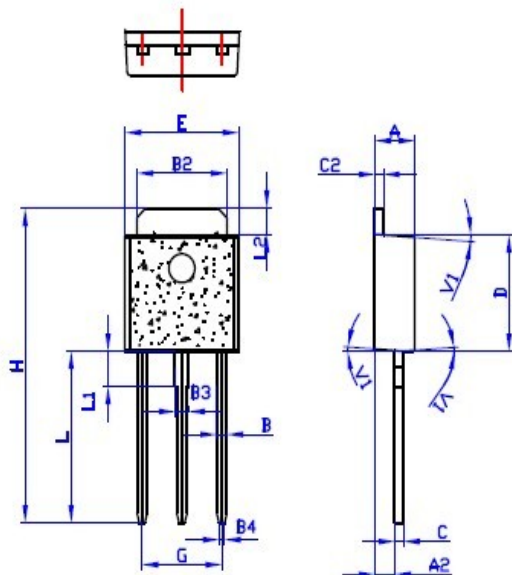
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.46		0.70	0.018		0.027
C2	1.23		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	9.8		10.4	0.386		0.409
F	6.2		6.6	0.244		0.259
G	4.8		5.4	0.189		0.213
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°	

TO-252(DPAK)



Ref.	Dimenslons					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.7	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.1	0.368		0.397
L1		0.8			0.031	
L2	1.37		1.5	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°

TO-251(iPAK)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.9		1.1	0.035		0.043
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
B3	0.76		0.85	0.030		0.033
B4		0.32			0.013	
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.7	0.252		0.264
G	4.4		4.7	0.173		0.185
H	16.0		16.7	0.630		0.658
L	8.9		9.4	0.350		0.370
L1	1.8		1.9	0.071		0.075
L2	1.37		1.5	0.054		0.059
V1		4°			4°	

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

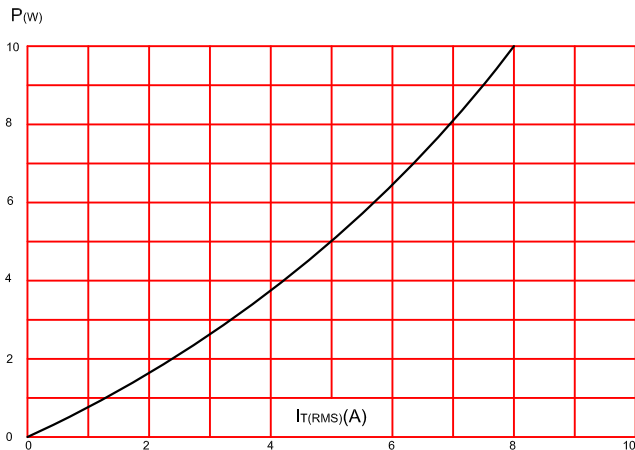


FIG.2: RMS on-state current versus case temperature (full cycle)

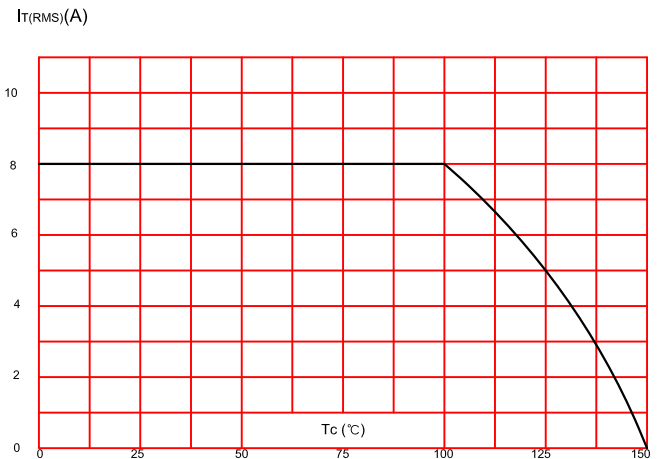


FIG.3: On-state characteristics (maximum values).

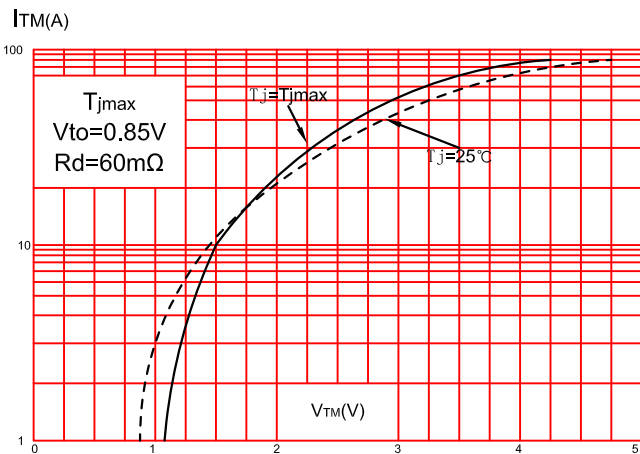


FIG.4: Surge peak on-state current versus number of cycles.

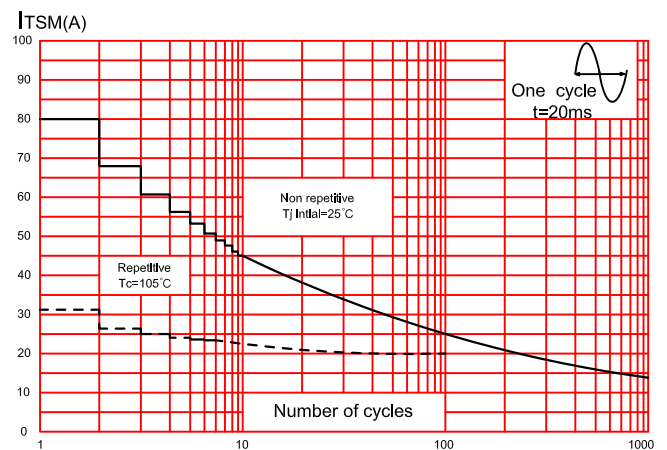


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

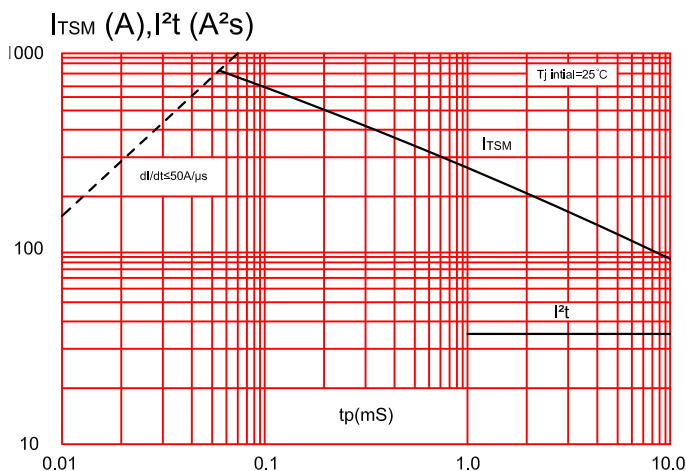


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)

