

## RS30xxH Series 30A TRIACS

### DESCRIPTION:

High current density due to double mesa technology, glass passivation, guaranteed maximum junction temperature 180° C.

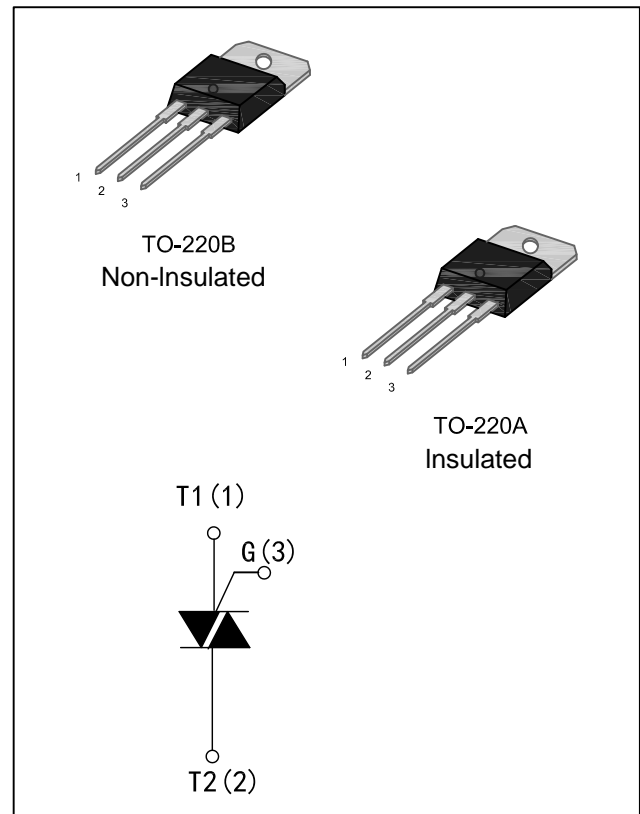
RS30xxH series triacs are suitable for general purpose AC switching, They can be used as an ON/OFF function in applications such as static relays, washing machine, soymlik maker, flush toilet, hair drier, induction motor staing circuits...or for phase contol operation light dimmers, motor speed controllers.

RS3035H -RS3050H are 3 quadrants triacs, They are specially recommended for use on inductive loads.

RS30xxHxA series are full pack plastic e, they provide a 2500V RMS isolation voltage from all three terminals to external heat sink.

### MAIN FEATURES

Symbol	Value	Unit
$I_T(\text{RMS})$	30	A
$V_{\text{DRM}}/V_{\text{RRM}}$	600 / 800	V
$V_{\text{TM}}$	1.5	V



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	Tstg	-40 to +180	°C	
Operrating junction temperature range	Tj	-40 to +180	°C	
Repetitive Peak Off-state Voltage (Tj=25°C)	RS3035H-6	$V_{\text{DRM}}$	600	
Repetitive Peak Reverse Voltage (Tj=25°C)	RS3035H-8	$V_{\text{RRM}}$	800	
Non repetitive Surge Peak Off-state Voltage (tp=10ms, Tj=25°C)	$V_{\text{DSM}}$	$V_{\text{DRM}}+100$	V	
Non repetitive Peak Reverse Voltage (tp=10ms, Tj=25°C)	$V_{\text{RSM}}$	$V_{\text{RRM}}+100$		
RMS on-state current (full sine wave)	TO-220A Tc=95°C	$I_T(\text{RMS})$	30	A
	TO-220B Tc=110°C			
Non repetitive surge peak on-state current (full cycle, Tj=25°C)	f=60Hz, t=16.7ms	ITSM	260	A
	f=50Hz, t=20ms		250	
I <sup>2</sup> t Value for fusing	tp=10ms	I <sup>2</sup> t	340	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> =2×I <sub>GT</sub> , tr≤100ns, f=120Hz, Tj=150°C)	di/dt	50	A/μs	
Peak gate current (tp=20us, Tj=150°C)	I <sub>GM</sub>	4	A	
Peak Gate Power Dissipation (tp=20us, Tj=150°C)	P <sub>GM</sub>	10	W	
Average gate power dissipation (Tj=150°C)	P <sub>G(AV)</sub>	1	W	

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

Symbol	Test Condition	Quadrant		Limits		Unit
				RS3035	RS3050	
IGT	VD=12V RL=33Ω	I-II-III	MAX.	35	50	mA
VGT		I-II-III	MAX.	1.3		V
VGD	VD=VDRM RL=3.3KΩ Tj =125°C	I-II-III	MIN.	0.2		V
IL	IG=1.2IGT	I-III	MAX.	55	70	mA
		II	MAX.	80	100	mA
IH	IT =100mA		MAX.	40	55	mA
dV/dt	VD=67%VDRM gate open Tj=125°C		MIN.	500	1000	V/μs
(di/dt)c	Without snubber Tj=125°C		MIN.	13	22	A/ms

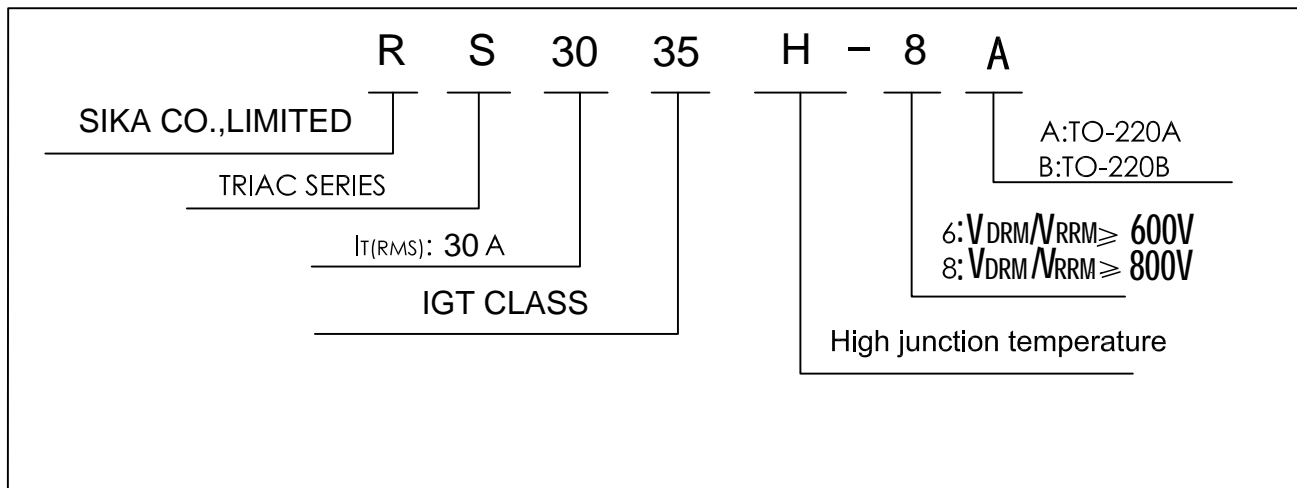
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
VTM	ITM=35A, tp=380μs	Tj=25°C	1.5	V
IDRM	VD=VDRM VR=VRRM	Tj=25°C	10	μA
I <sub>RRM</sub>		Tj=150°C	5	mA

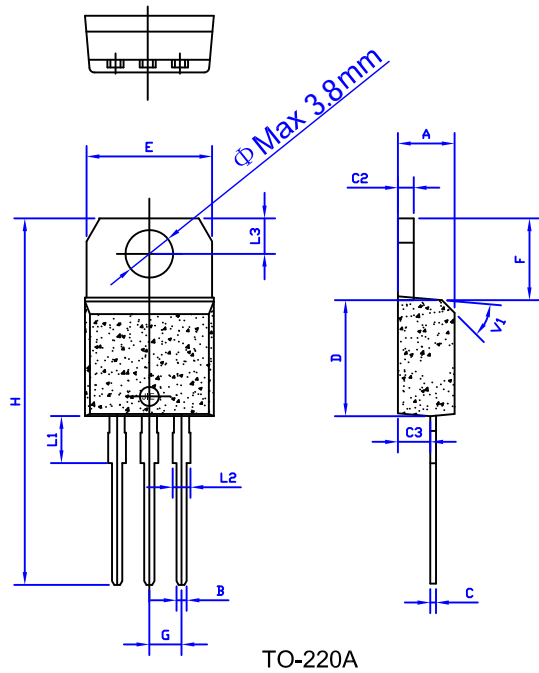
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth(j-c)	Junction to Case(AC)	TO-220A	1.7	°C/W
		TO-220B	0.8	
Rth(j-a)	Junction to ambient (S=1cm²)		60	°C/W

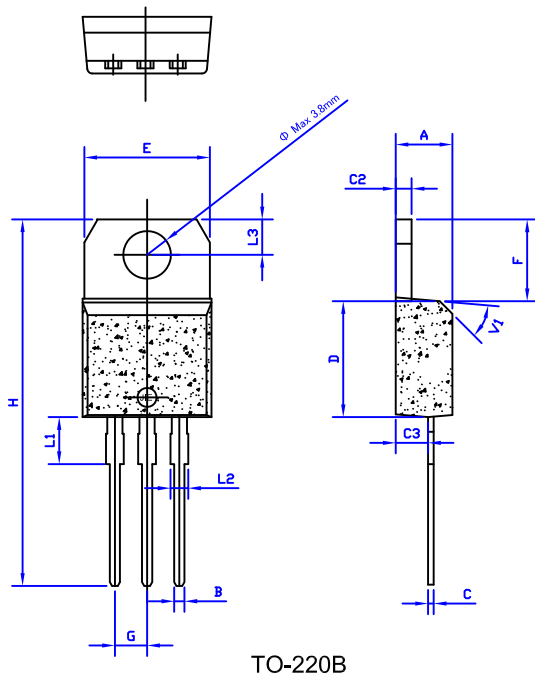
ORDERING INFORMATION



PACKAGE MECHANICAL DATA



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	1.21		1.40	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		6.7	0.258		0.274
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		45°			40°	



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C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	9.6		10.4	0.378		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		3.71			0.146	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		45°			40°	

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

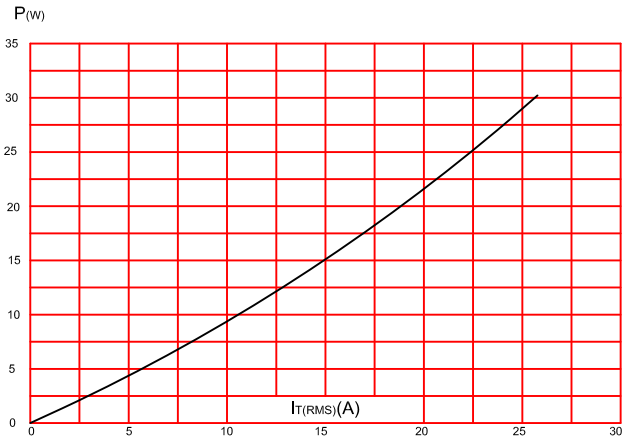


FIG.2: RMS on-state current versus case temperature (full cycle)

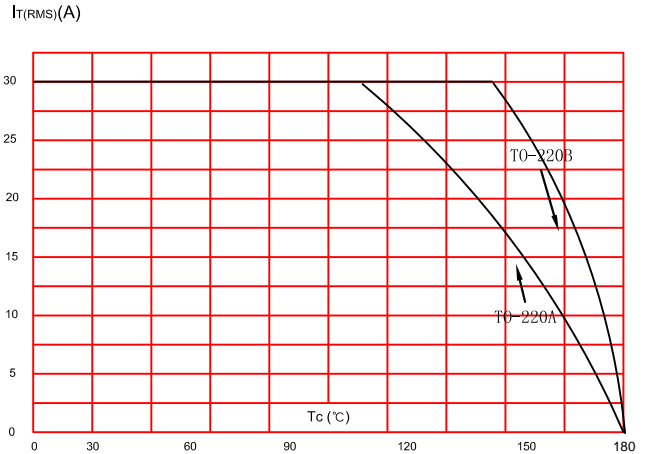


FIG.3: On-state characteristics (maximum values).

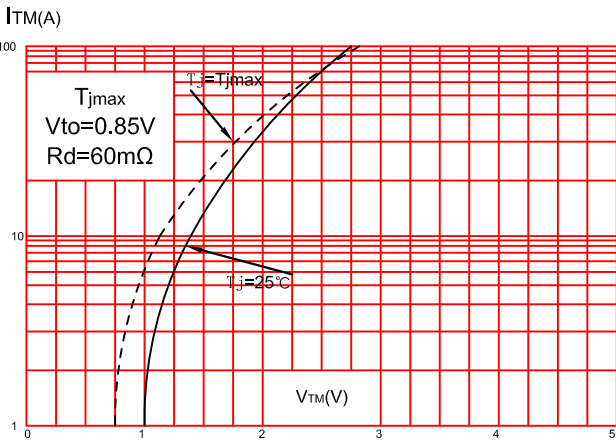


FIG.4: Surge peak on-state current versus number of cycles.

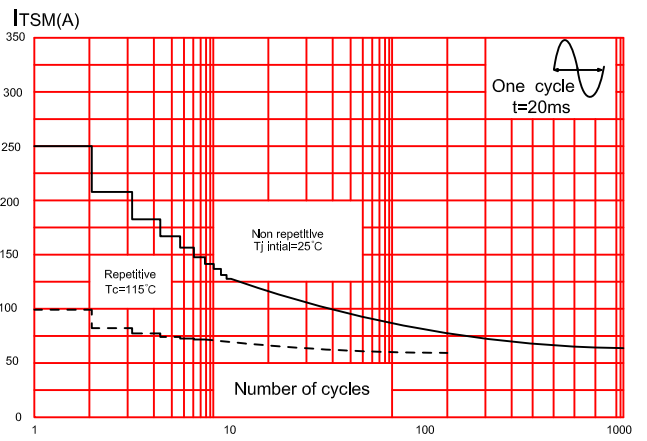


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$ , and corresponding value of  $I^2t$ .

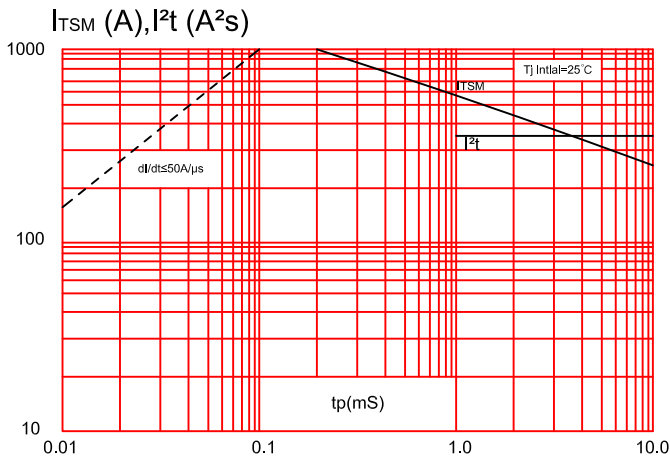
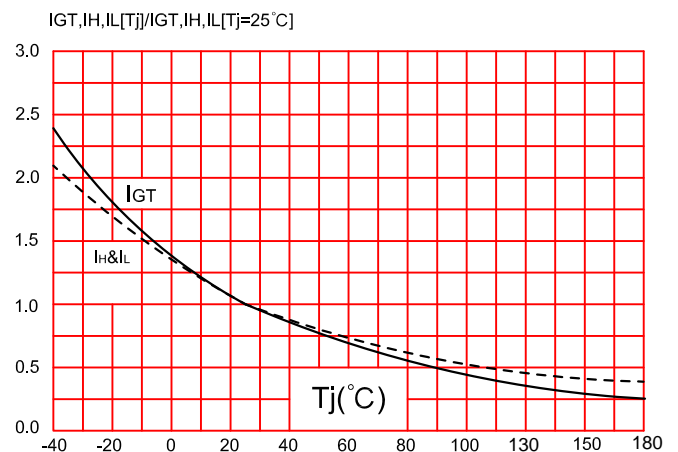


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



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