4 Quadrants TRIACs

Primary characteristics		
Parameter	**Value**	**Unit**
$I_{T(RMS)}$	12	A
V_{DRM}	600/800	V
V_{TM}	1.55	V

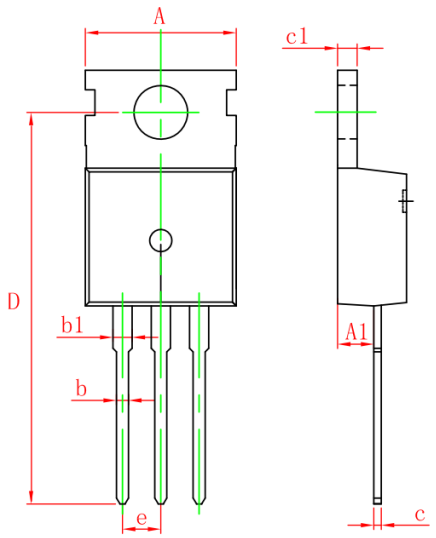
Features

- With high ability to withstand the shock loading of large current,
- With high commutation performances,
- 4 quadrants product

Applications

- Washing machines,
- Vacuums,
- Massagers,
- Solid state relaies,
- AC Motor speed regulations etc.

Case dimensions [mm]



TO-220C

Sym.	A	A1	b	b1	c	c1	D	e
Min.	9.70	2.15	0.71	1.17	0.35	1.20	25.10	2.54 TYP.
Max.	10.30	2.55	0.91	1.37	0.65	1.40	27.10	

Absolute maximum ratings (T_A = 25°C, unless otherwise noted)

Parameter	Symbol	Value		Unit
Repetitive peak off-state voltage	V_{DRM}	600/800		V
Repetitive peak reverse voltage	V_{RRM}	600/800		V
RMS on-state current	$I_{T(RMS)}$	12		A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	95		A
I^2t value for fusing (t_p=10ms)	I^2t	45		A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT})	dI_T/dt	I-II-III	50	A/μs
		IV	10	
Peak gate current	I_{GM}	2		A
Average gate power dissipation	$P_{G(AV)}$	0.5		W
Junction temperature	T_J	-40 to +125		℃
Storage temperature	T_{STG}	-40 to +150		℃

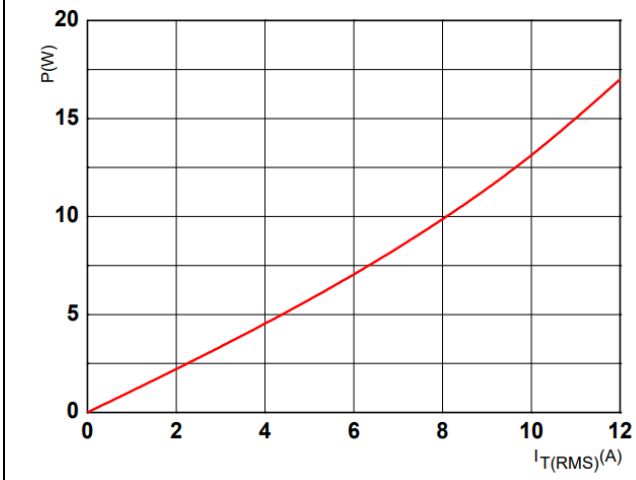
Electrical characteristics (T_A = 25°C, unless otherwise noted)

Parameter	Symbol	Test condition		Value		Unit
Gate trigger current	I_{GT}	V_D=12V, I_T=0.1A, T_j=25℃	I-II-III	Max.	10	mA
			IV		25	
Gate trigger voltage	V_{GT}		I-II-III-IV	Max.	1.3	V
Gate non-trigger voltage	V_{GD}	V_D=V_{DRM}, T_j=125℃		Min.	0.2	V
Latching current	I_L	V_D=12V, I_{GT}=0.1A, T_j=25℃	I-III-IV	Max.	30	mA
			II		40	
Holding current	I_H		I-II-III-IV	Max.	30	mA

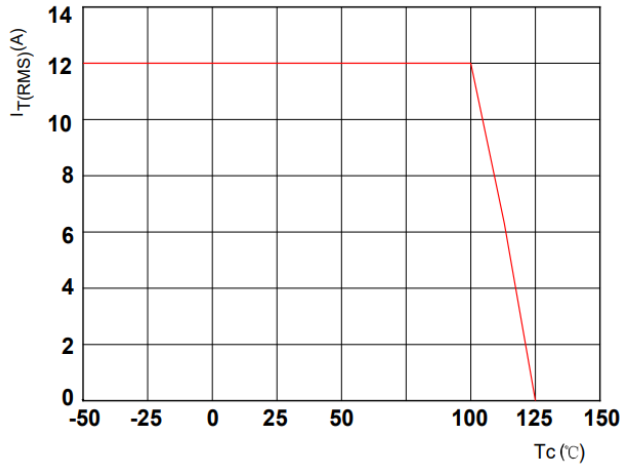
Critical-rate of rise of commutation voltage	dV_D/dt	V_D=2/3V_{DRM} Gate open, T_j=125˚C	Min.	20	V/μs
STATIC CHARACTERISTICS					
Forward “on” voltage	V_{TM}	I_{TM}=15A, t_p=380μs	Max.	1.55	V
Repetitive peak off-state current	I_{DRM}	V_D=V_{DRM}, T_j=25℃	Max.	10	μA
Repetitive peak reverse current	I_{RRM}	V_R=V_{RRM} T_j=125℃	Max.	1	mA
THERMAL RESISTANCES					
Thermal resistance	Rth(j-c)	Junction to case (AC)	Typ.	1.4	℃/W
	Rth(j-a)	Junction to ambient	Typ.	60	℃/W

Typical characteristics

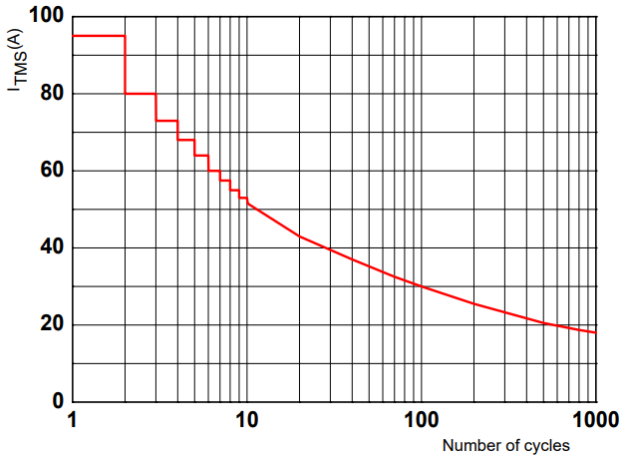
Maximum power dissipation vs. RMS on-state current (full cycle)



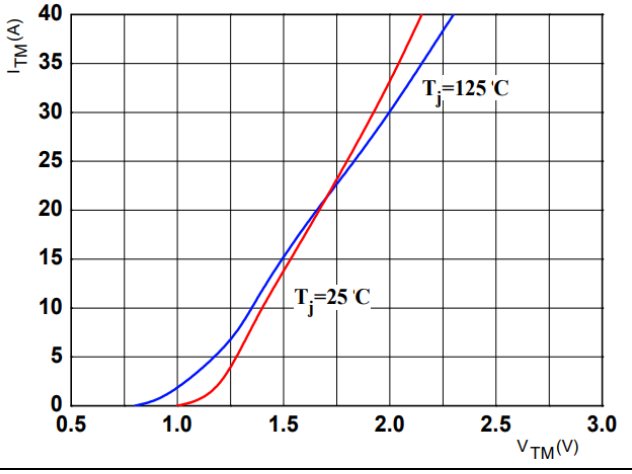
RMS on-state current vs. Case temperature (full cycle)

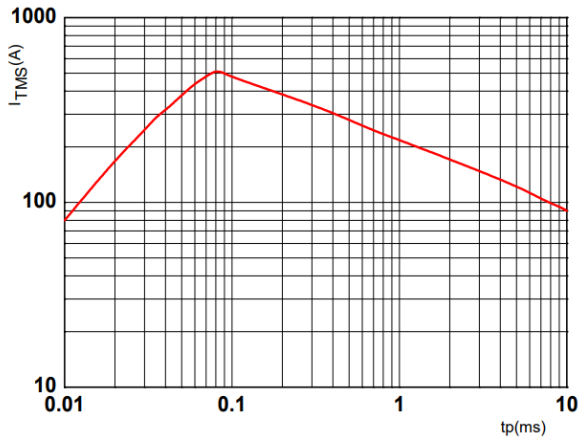
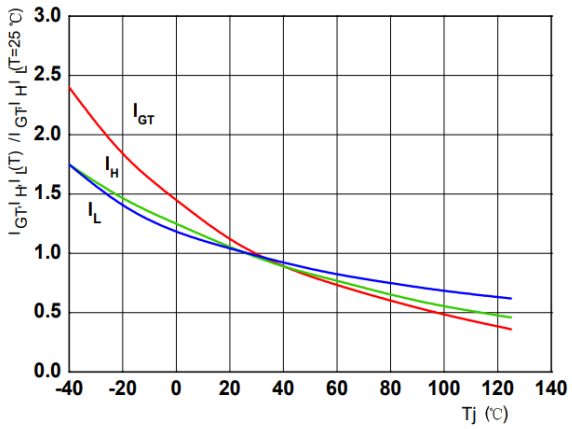


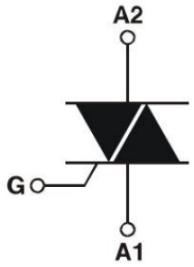
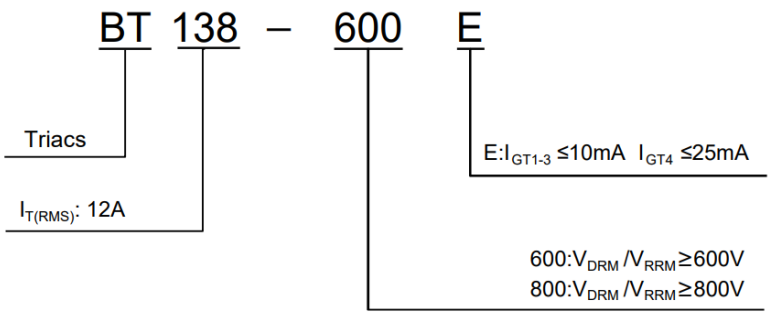
Surge peak on-state current vs. Number of cycles



On-state characteristics (maximum values)



Non-repetitive surge peak on-state current for a sinosoidal pulse with width t_p<10ms	Relative variations of gate trigger current, holding current and latching current vs. Junction temperature (typical values)
	

Circuit diagram	Part number system
	

Ordering information			
Order code	**Package**	**Packaging option**	**Shipping Quantity**
BT138 Series	TO-220C	Tape & Reel	**2000 pcs**

Disclaimer

Akyga semi reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Akyga semi or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on Akyga semi data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Akyga semi does not assume any liability arising out of the application or use of any product or circuit. Akyga semi products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Akyga semi. Customers using or selling Akyga semi components for use in such applications do so at their own risk and shall agree to fully indemnify Akyga semi and its subsidiaries harmless against all claims, damages and expenditures.