

12A 3Q Triac

Features

- On-state rms current, $I_{T(RMS)}$ 12 A
- Repetitive peak off-state voltage, V_{DRM}/V_{RRM} 800 V
- Triggering gate current, I_{GT} (Q1) 35 mA

Applications

- General purpose switching and phase control
- General purpose switching

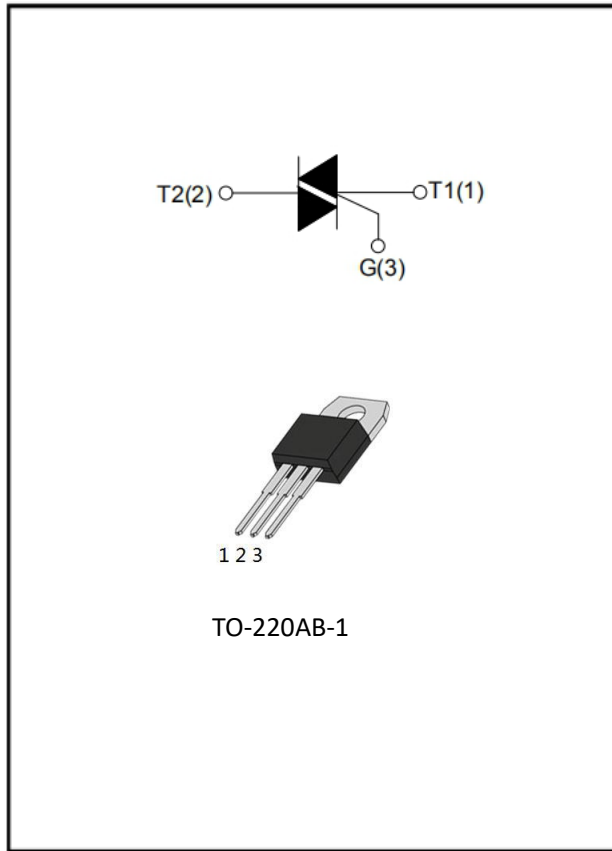
Mechanical Data

- Case Material: "Green" Molding Compound
- Package: TO-220AB-1

DEVICE	PACAKGE
ACYMB1235-08A	TO-220AB-1

Main Characteristics

SYMBOL	LIMITS	UNIT
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	15	mA



Maximum Ratings

PARAMETER	SYMBOL		LIMITS	UNIT
Storage junction temperature range	T_{stg}		-40~150	°C
Operating junction temperature range	T_j		-40~125	°C
Repetitive surge peak Off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}		800	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}		800	V
RMS on-state current	$I_{T(RMS)}$		12	A
Non-repetitive surge peak on-state current (full sine wave, $t_p=20ms, T_j=25^{\circ}C$)	I_{TSM}		120	A
I^2t value for fusing ($t_p=10ms$)	I^2t		78	A ² s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	I - II - III	100	A/ μ s
Peak gate current	I_{GM}		4	A
Average gate power dissipation	$P_{G(AV)}$		1	W
Peak gate power	P_{GM}		5	W



ACYMB1235-08A

■Electrical Characteristics (T_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	QUADRANT	MIN	TYP	MAX
Gate trigger current	I _{GT}	mA	V _D =12V, R _L =33Ω	I - II - III			35
Gate trigger voltage	V _{GT}	V	V _D =12V, R _L =33Ω	I - II - III			1.5
Non-triggering gate voltage	V _{GD}	V	V _D =V _{DRM}	I - II - III	0.2		
Holding current	I _H	mA	I _T =100mA	I - II - III			40
Latching current	I _L	mA	I _G =3 I _{GT}	I - III			50
				II			60
Rate of rise of off-state voltage	dV/dt	V/μs	V _D =0.66×V _{DRM} T _j =125°C Gate open	I - II - III			1000

■Static Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MAX
Peak on-state voltage	V _{TM}	V	I _{TM} =17A t _p =380μs	1.5
Peak off-state current	I _{DRM} I _{RRM}	μA	V _{DRM} = V _{RRM} , T _j =25°C	5
Peak reverse current		mA	V _{DRM} = V _{RRM} , T _j =125°C	1

■Thermal Resistance

PARAMETER		SYMBOL	UNIT	Pacakge	Value
Thermal Resistance (Typical)	Junction to case	R _{θJ-C}	°C/W	TO-220AB-1	1.5

■ Characteristics (Typical)

FIG.1: Maximum power dissipation versus RMS on-state current

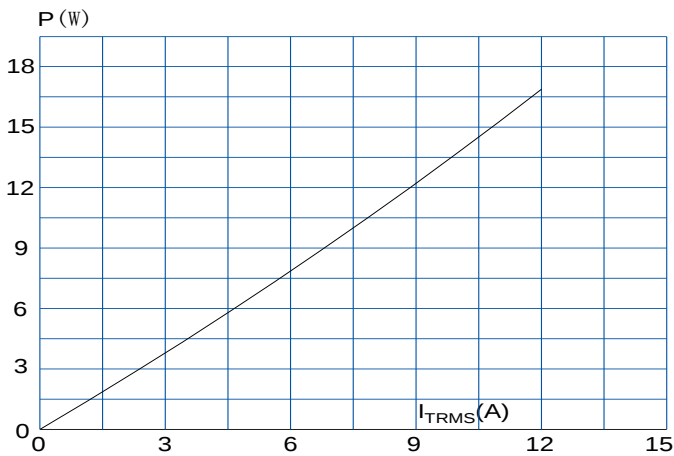


FIG.2: RMS on-state current versus case temperature

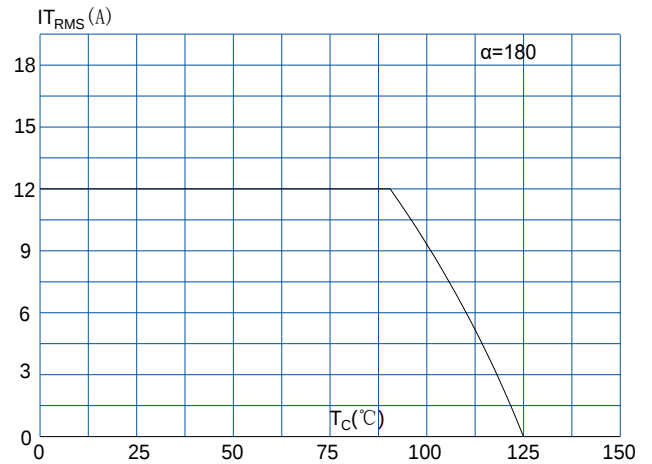


FIG.3: Surge peak on-state current versus number of cycles

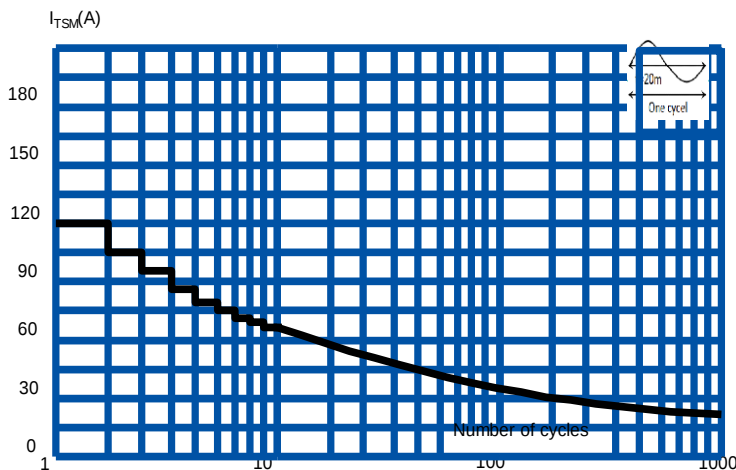


FIG.4: On-state characteristics (maximum values)

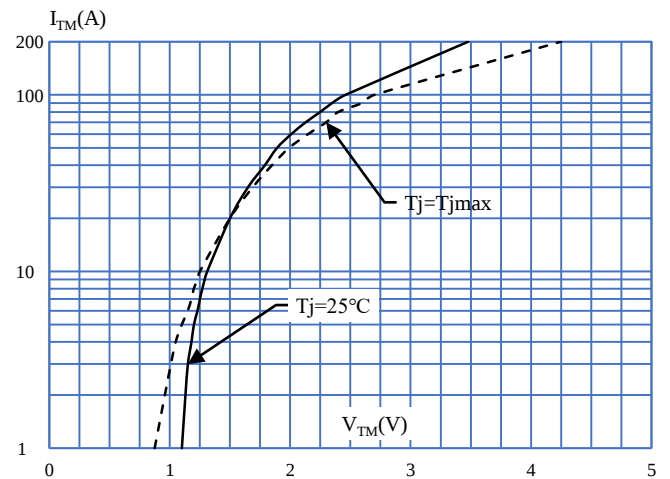


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I_2 t$ ($di/dt < 50A/\mu s$)

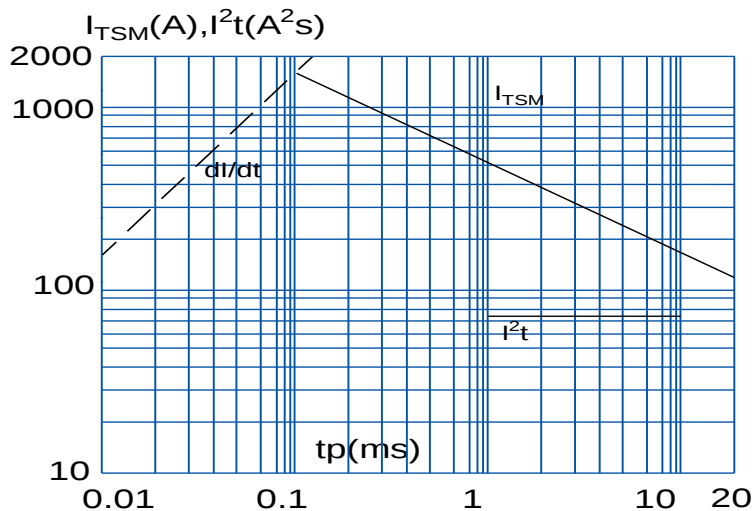
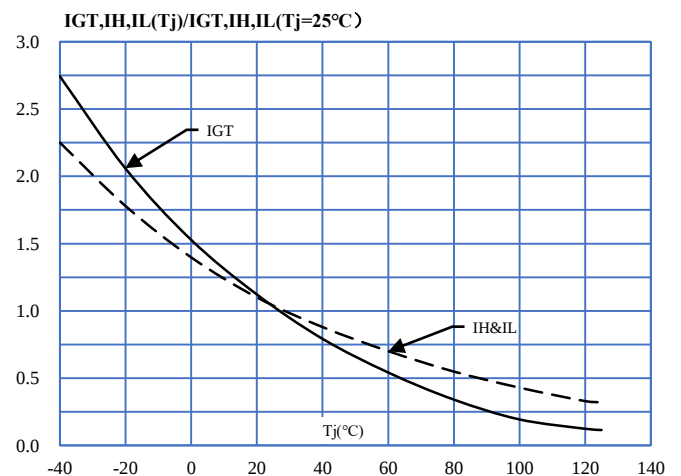


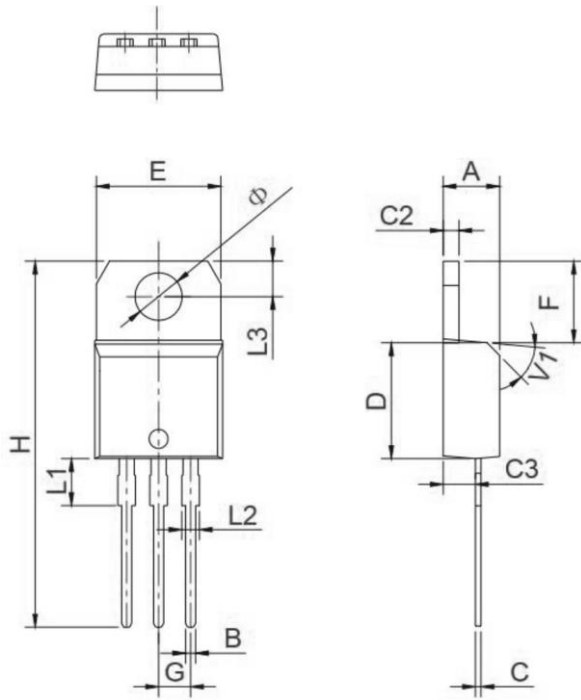
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature





ACYMB1235-08A

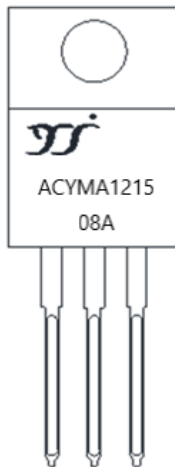
■ Outline Dimensions



TO-220AB-1

Symbol	Min.(mm)	Typ.(mm)	Max.(mm)
A	4.40	4.47	4.60
B	0.61		0.88
C	0.46	0.50	0.70
C2	1.21	1.27	1.32
C3	2.40		2.72
D	8.60		9.70
E	9.80		10.40
F	6.56		6.95
G		2.54	
H	28.00		29.80
L1		3.75	
L2	1.14		1.70
L3	2.65		2.95
V1		45°	
Φ	3.70	3.75	3.80

■ Marking information



(TO-220AB-1 Package)



Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.