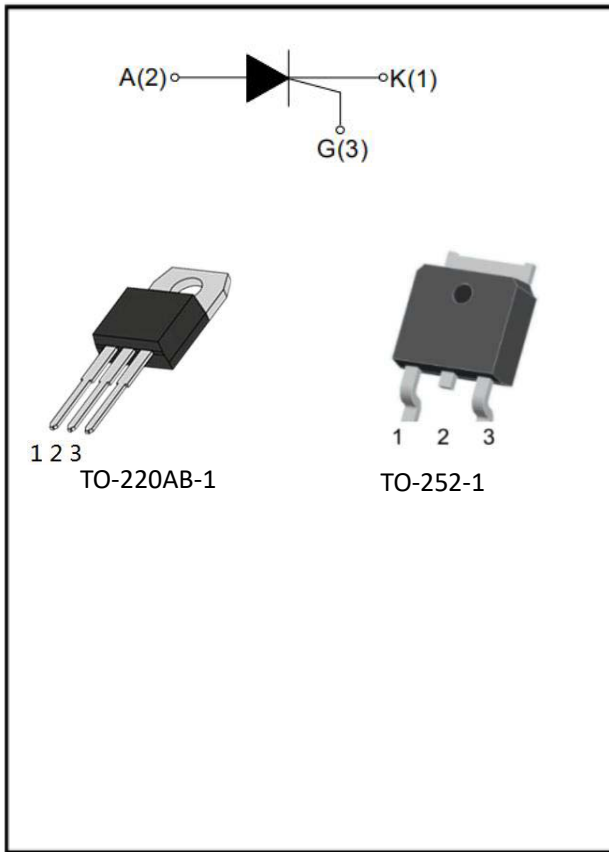


12A SCRs



Features

- On-state rms current, $I_{T(RMS)}$ 12 A
- Repetitive peak off-state voltage, V_{DRM}/V_{RRM} 650 V
- Triggering gate current, I_{GT} 15mA

Applications

- Ground Fault Circuit Interrupters (GFCI)
- General purpose switching and phase control
- Ignition circuits, CDI
- Motor control - e.g. small kitchen appliances

Mechanical Data

- Case Material: "Green" Molding Compound
- Package:

DEVICE	PACKAGE
YCMB1215-065A	TO-220AB-1
YCMB1215-065D	TO-252-1

Main Characteristics

SYMBOL	LIMITS	UNIT
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	650	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 ($T_j=25^\circ\text{C}$)	V_{DRM}	650	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	650	V
RMS on-state current ($T_C=80^\circ\text{C}$)	$I_{T(RMS)}$	12	A
Non-repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	120	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	72	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W



YCMB1215 Series

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MIN	TYP	MAX
Gate trigger current	I _{GT}	mA	V _D =12V, R _L =33Ω		4	15
Gate trigger voltage	V _{GT}	V	V _D =12V, R _L =33Ω		0.75	1.5
Non-triggering gate voltage	V _{GD}	V	V _D =V _{DRM} T _j =110°C	0.2		
Holding current	I _H	mA	I _T =50mA			30
Latching current	I _L	mA	I _G =1.2 I _{GT}			40
Rate of rise of off-state voltage	dV/dt	V/μs	V _D =0.66×V _{DRM} T _j =125°C Gate open	200		

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MAX
Peak on-state voltage	V _{TM}	V	I _{TM} =23A t _p =380μS	1.75
Peak off-state current	I _{DRM}	μA	V _{DRM} = V _{R_{RM}} , T _j =25°C	5
Peak reverse current	I _{R_{RM}}	mA	V _{DRM} = V _{R_{RM}} , T _j =110°C	0.5

■Thermal Resistance (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Pacakge	Value	
Thermal Resistance (Typical)	Junction to case	R _{θJ-C}	°C/W	TO-220AB-1	1.3
			°C/W	TO-252-1	1.4



■ Characteristics (Typical)

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

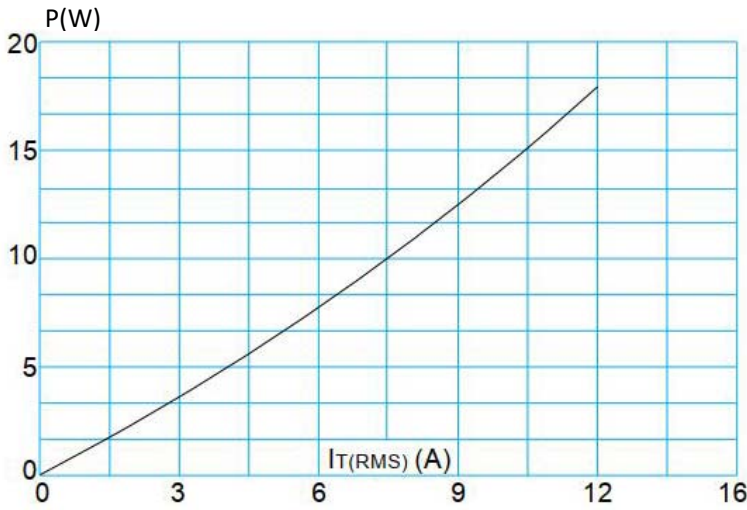


FIG.3: Surge peak on-state current versus number of cycles

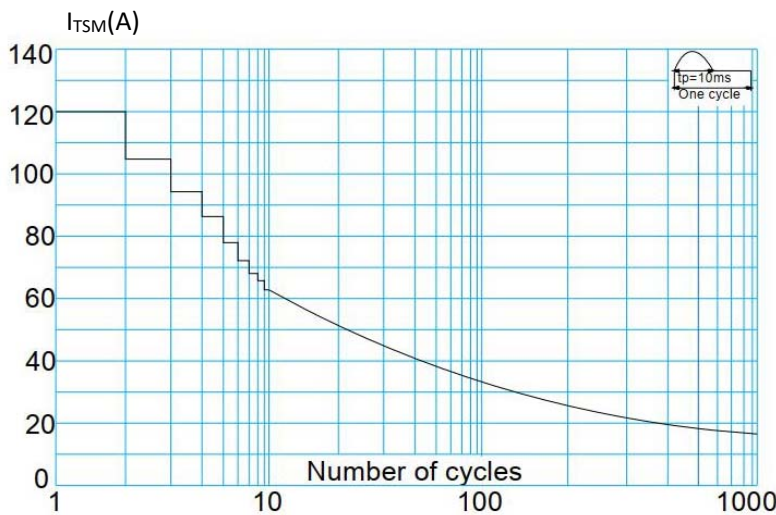


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t (I - II - III: $di/dt < 50\text{A}/\mu\text{s}$; IV: $di/dt < 10\text{A}/\mu\text{s}$)

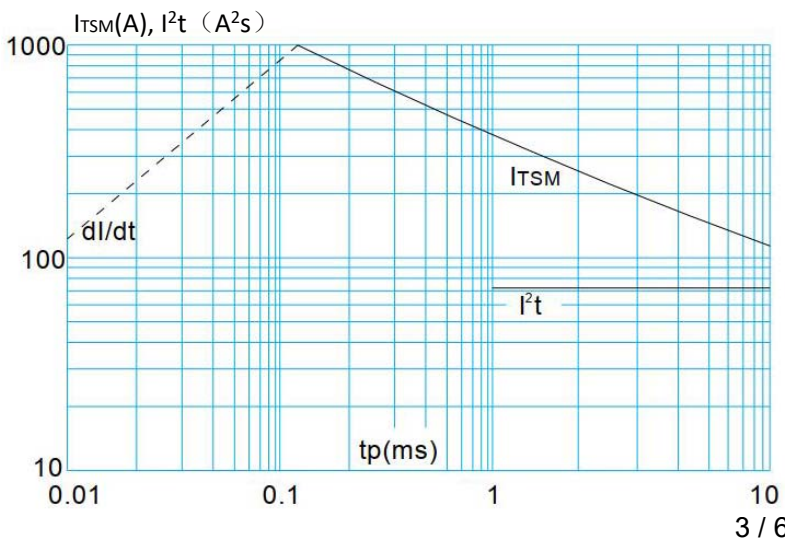


FIG.2: RMS on-state current versus case temperature

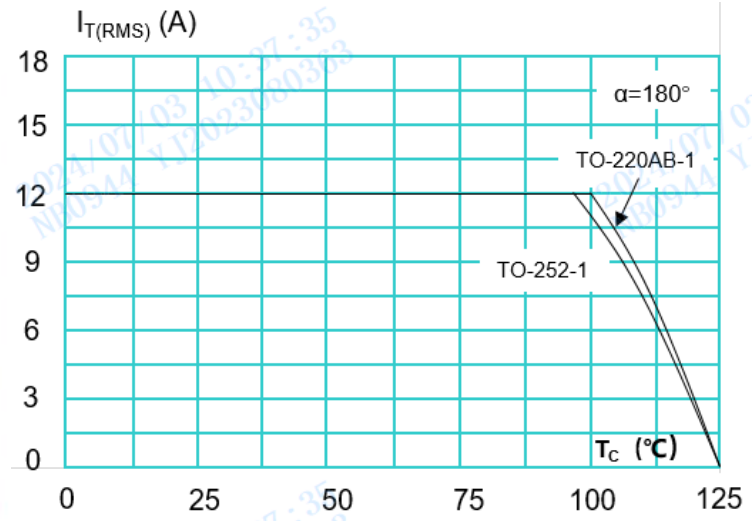


FIG.4: On-state characteristics (maximum values)

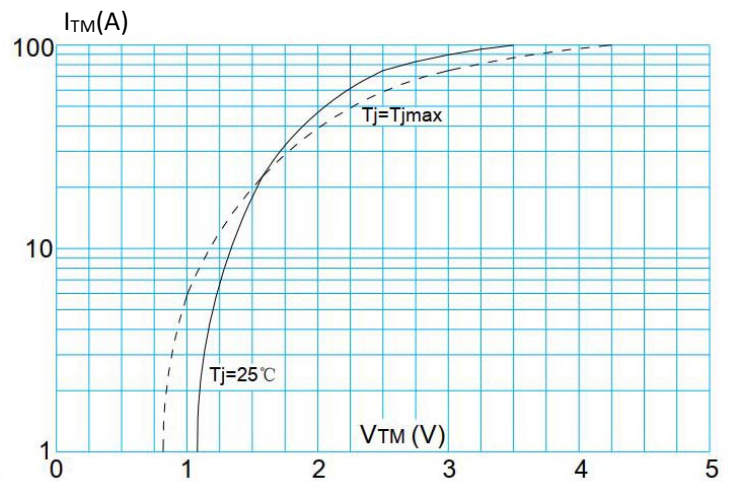
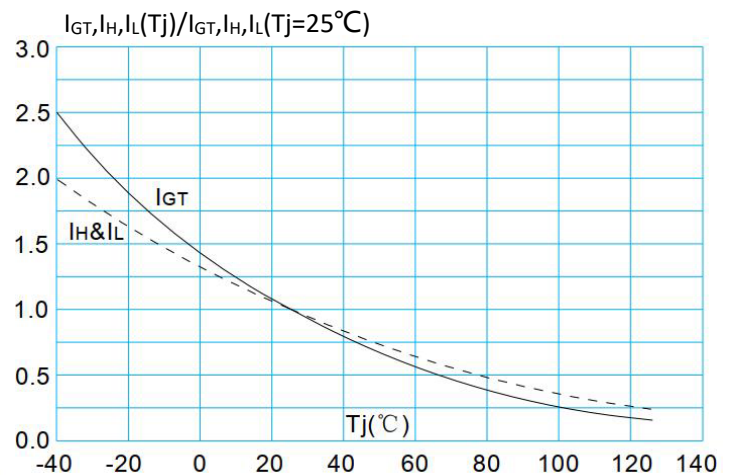


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

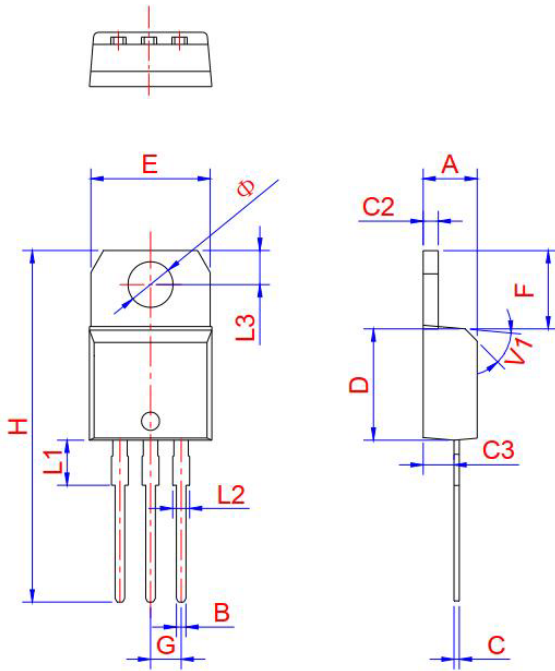




YCMB1215 Series

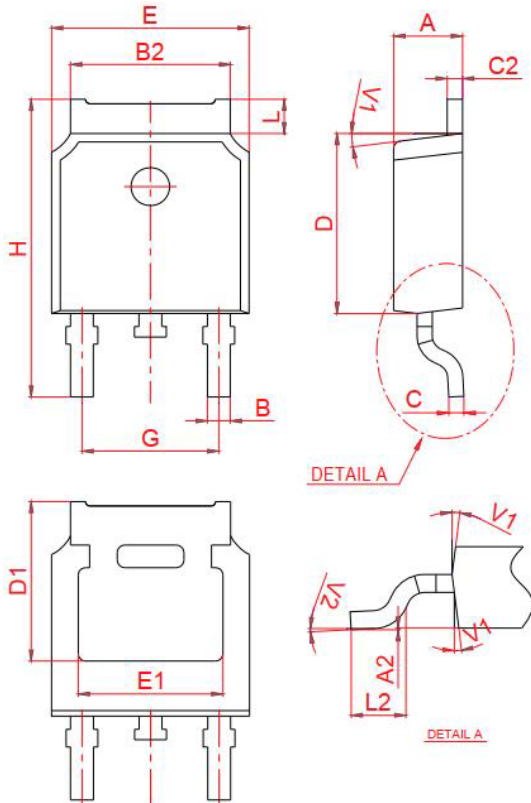
■ Outline Dimensions

➤ TO-220AB-1 Package Outline Dimensions



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

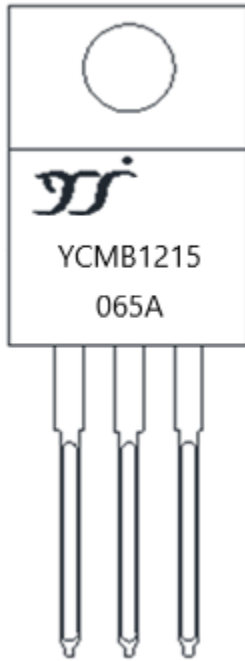
➤ TO-252-1 Package Outline Dimensions



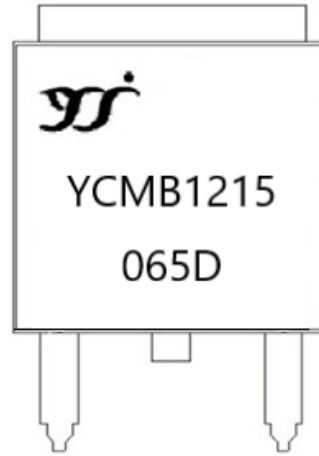
Symbol	Min.(mm)	Typ.(mm)	Max.(mm)
A	2.20		2.40
A2	0		0.10
B	0.66		0.86
B2	5.10		5.46
C	0.46		0.58
C2	0.44		0.58
D	5.90		6.30
D1		5.30	
E	6.40		6.80
E1	4.63		
G	4.372		4.772
H	9.80		10.40
L	1.09		1.21
L2	1.35		1.65
V1		7°	
V2	0°		6°



■ Marking Information



YCMB1215-065A
(TO-220AB-1 Package)



YCMB1215-065D
(TO-252-1 Package)



YCMB1215 Series

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