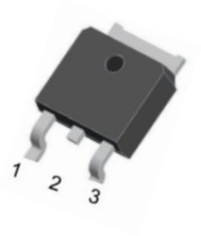
X0405-610AM

Silicon Controlled Rectifier

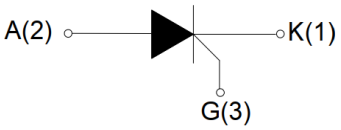
Features

- Blocking Voltage to 600V
- Glass Passivated Surface for Reliability and Uniformity
- RoHS Compliant
- High Dv/Dt Rate
- $I_{T(RMS)}$ to 4A of SCR



TO-252-4R

Pin Configuration



Absolute Maximum Ratings（Tc=25℃ Unless otherwise specified）

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40~150	℃
Operating junction temperature range	T_j	-40~125	℃
Repetitive peak off-state voltage (Tj=25℃)	V_{DRM}	600	V
Repetitive peak reverse voltage (Tj=25℃)	V_{RRM}	600	V
RMS on-state current	$I_{T(RMS)}$	4	A
Average on-state current (180° conduction angle)	$IT_{(AV)}$	2.5	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	40	A
I^2t value for fusing (tp=10ms)	I^2t	8	A^2s
Critical rate of rise of on-state current (IG=2×IGT)	dI/dt	50	A/μs
Peak gate current	I_{GM}	1.2	A
Average gate power dissipation	$P_{G(AV)}$	0.2	W

Thermal Resistance(between Junction and Case)	$R_{\theta(J-C)}$	6.5（Typ.）	℃/W

Electronics Characteristics（Tc=25℃ Unless otherwise specified）

Parameter	Symbol	Min	Max.	Unit
Gate Trigger Current (Continuous dc)@VD=12V, RL=33Ω	I_{GT}	-	50	uA
Gate Trigger Voltage (Continuous dc) @VD=12V, RL=33Ω	V_{GT}	-	1	V
Gate non-trigger voltage@VD=VDRM, RL=3.3kΩ,Tj=125℃	V_{GD}	0.1	-	V
Holding Current@IT=50mA	I_H	-	5	mA
Latching Current@IG=1.2IGT	I_L	-	6	mA
Critical Rate-of-Rise of Off State Voltage@VD=0.66×VDRM, Tj=125℃, Gate open RGK=1 KΩ	dV/dt	10	-	V/μs
Peak Forward On-State Voltage@ITM=8A,tp=380μs, Tj=25℃	V_{TM}	-	1.75	V
Peak Repetitive Forward@VDRM=VRRM, RGK=1 KΩ Tj=25℃	I_{DRM}	-	5	μA
Reverse Blocking Current@VDRM=VRRM, RGK=1 KΩ Tj=125℃	I_{RRM}	-	1	mA

Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

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

P(w)

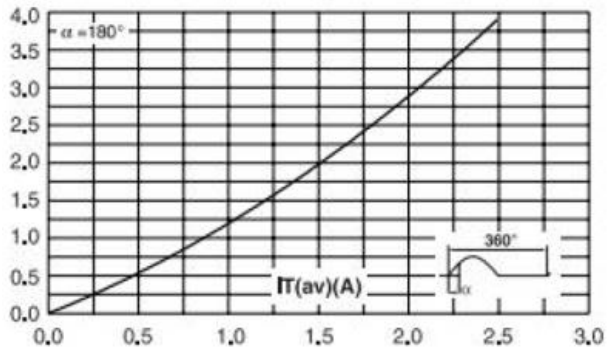


FIG.2: RMS on-state current versus case temperature in different packaging

$I_{T(RMS)}$(A)

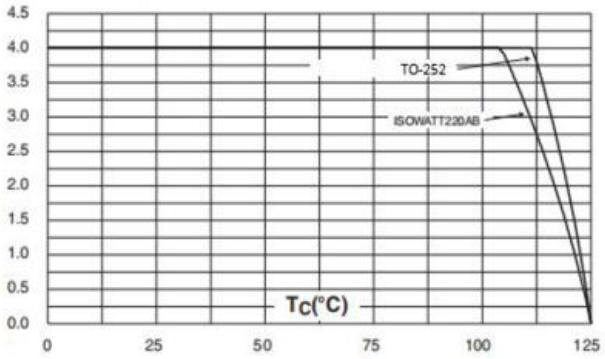


FIG.3: Surge peak on-state current versus number of cycles

I_{TSM}(A)

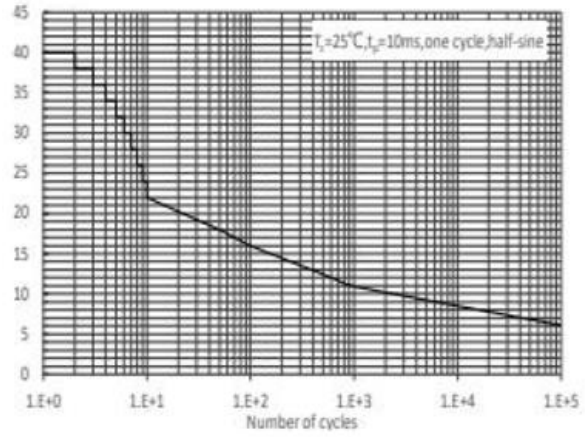


FIG.4:On-state characteristics (maximum values)

I_{TM}(A)

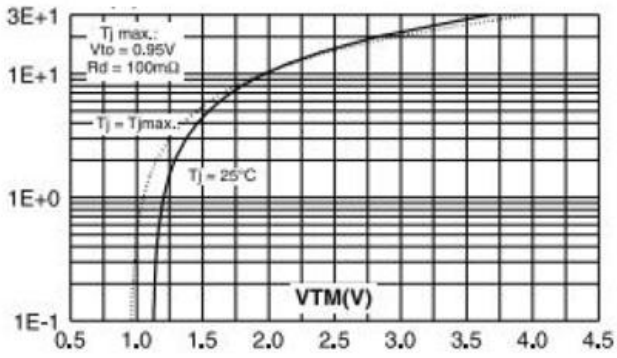


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t

I_{TSM}(A),I^2t（A^2s）

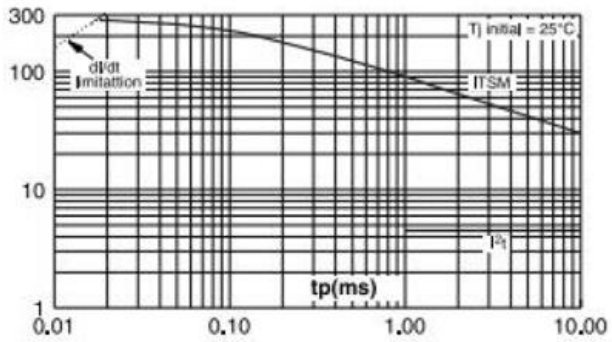
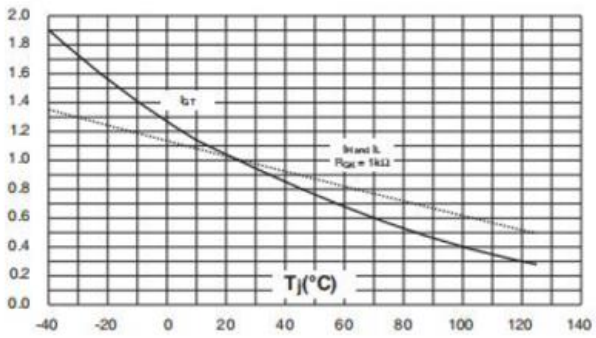


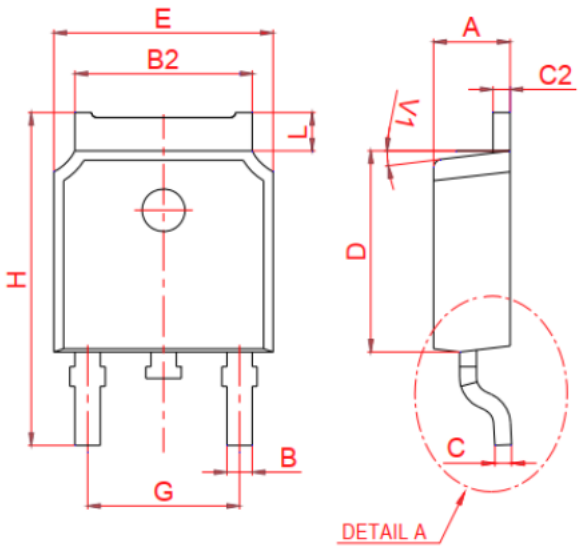
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

I_{GT},I_H,I_L(Tj)/I_{GT},I_H,I_L(Tj=25℃)

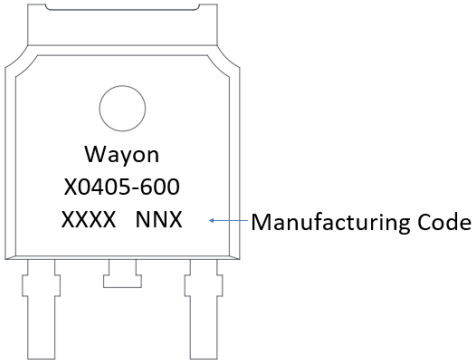


Outline Drawing

SYMBOL	MM		
	MIN	NOM	MAX
A	2.10	-	2.50
B	0.66	-	0.91
B2	5.10	-	5.50
C	0.40	-	0.60
C2	0.40	-	0.61
D	5.90	-	6.30
E	6.40	-	7.00
G	4.37	-	4.77
H	9.40	-	10.7
L	0.88	-	1.30
V1	-	7°	-



Marking Code:



Part Number System

X 04 05- 610 AM

- X: SCR
- 04: $I_{T(RMS)}$:4A
- 05: I_{GT}: 05:50uA
- 610: V_{DRM}、V_{RRM}: 610:600V
- AM: AM:TO-252-4R

Package Information

Package	Base qty.	Delivery mode
TO-252-4R	2500	Reel

Contact Information

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Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

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The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

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