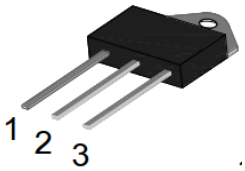
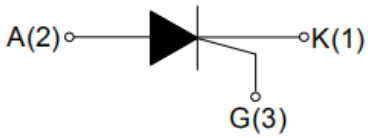
BT6050-1200E

Silicon Controlled Rectifier

Features

- Blocking Voltage to 1200 V
- High Dv/Dt Rate
- $I_{T(RMS)}$ to 60A of SCR
- RoHS Compliant & HF
- Very high current surge capability





Mechanical Data

Case: TO-3P（Ins）

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}	1200	V
Repetitive peak reverse voltage (Tj=25℃)	V_{RRM}	1200	V
RMS on-state current	$I_{T(RMS)}$	60	A
Average on-state current (180° conduction angle)	$I_{T(AV)}$	38	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	700	A
I^2t value for fusing (tp=10ms)	I^2t	2450	A^2s
Critical rate of rise of on-state current (IG=2×IGT)	dI/dt	100	A/μs
Peak gate current	I_{GM}	8	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Thermal Resistance(between Junction and Case)	$R_{\theta(J-C)}$	0.7（Typ.）	℃/W

Electronics Characteristics（Tc=25℃ Unless otherwise specified）

Parameter	Symbol	Min	Typ.	Max.	Unit
Gate Trigger Current (Continuous dc)@VD=12V, RL=33Ω	I_{GT}	8	-	50	mA
Gate Trigger Voltage (Continuous dc) @VD=12V, RL=33Ω	V_{GT}	-	-	1.3	V
Gate non-trigger voltage@VD=VDRM,Tj=125℃	V_{GD}	0.2	-	-	V
Holding Current@IT=500mA	I_H	-	-	100	mA
Latching Current@IG=1.2IGT	I_L	-	-	150	mA
Critical Rate-of-Rise of Off State Voltage@VD=0.66×VDRM, Tj=125℃,Gate Open	dV/dt	2000	-	-	V/μs
Peak Forward On-State Voltage@ITM=120A,tp=380μs, Tj=25℃	V_{TM}	-	-	1.8	V
Peak Repetitive Forward@VDRM=VRRM,RGK=1KΩ,Tj=25℃	I_{DRM}	-	-	10	μA
Reverse Blocking Current@VDRM=VRRM,RGK=1KΩ,Tj=125℃	I_{RRM}	-	-	6.5	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)

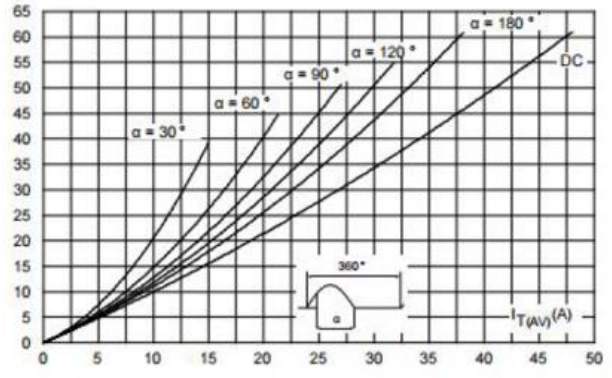


FIG.2: on-state current versus case temperature

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

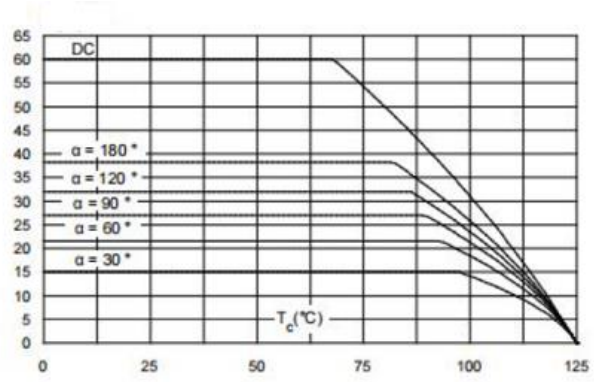


FIG.3: Surge peak on-state current versus number of cycles

$I_{TSM(A)}$

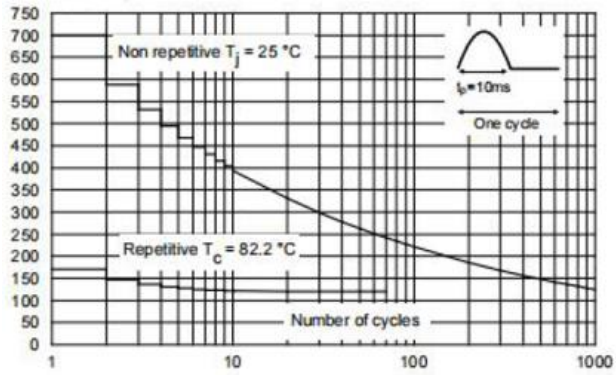


FIG.4:On-state characteristics (maximum values)

$I_{TM(A)}$

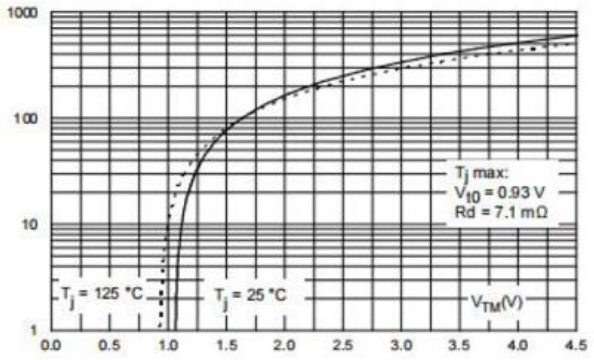
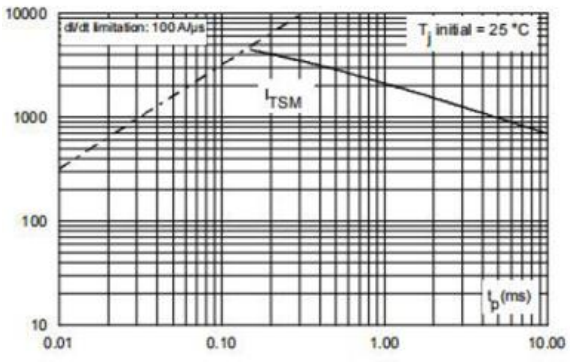


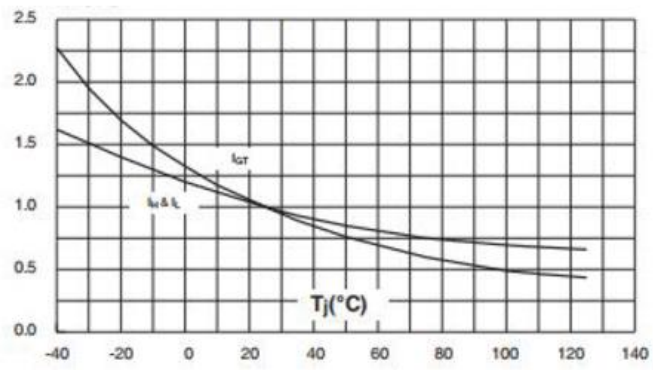
FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms

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

$I_{TSM(A)}$

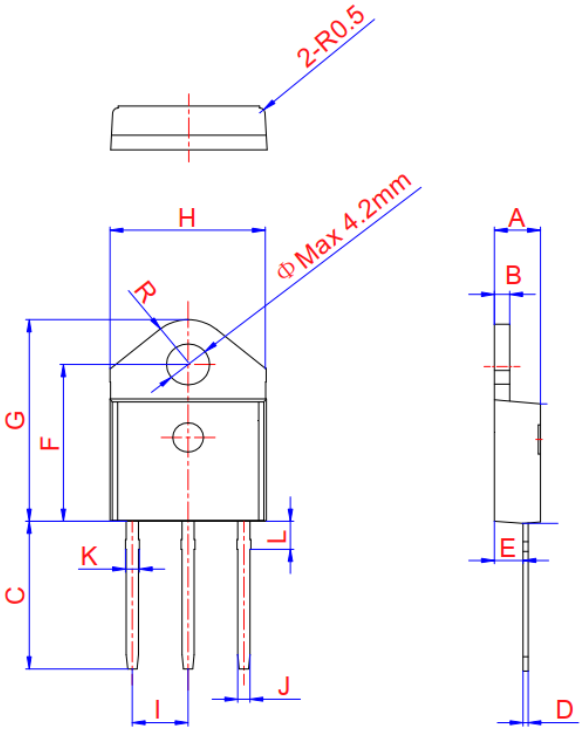


I_{GT},I_H,I_L(Tj)/I_{GT},I_H,I_L(Tj=25℃)

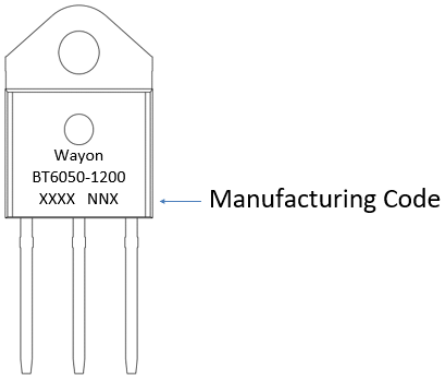


Outline Drawing

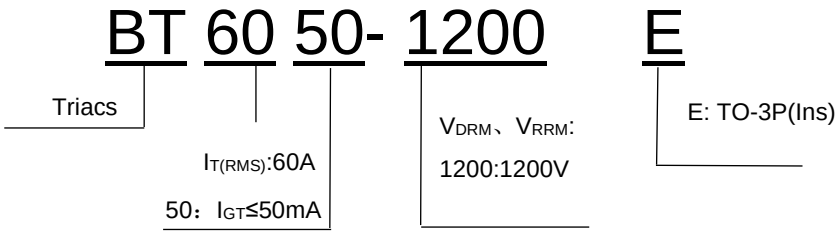
SYMBOL	MM		
	MIN	NOM	MAX
A	4.40	-	4.60
B	1.40	-	1.60
C	14.35	-	15.88
D	0.50	-	0.70
E	2.70	-	2.90
F	15.80	-	16.50
G	20.27	-	21.10
H	15.10	-	15.50
I	-	5.45	-
K	1.10	-	1.45
L	2.68	-	3.08
J	1.10	-	1.40
R	-	4.20	-



Marking Code



Part Number System



Package Information

Package	Base qty.	Delivery mode
TO-3P(Ins)	30	Tube

Contact Information

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WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

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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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