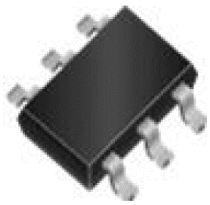
WEOS5-024GF

Ultra-low Capacitance Thyristor Surge Protector

Features

- Compatible with VDSL2、ADSL2
- Low Capacitance and Leakage Current
- Balanced overvoltage protection
- Low Clamping Voltage
- Response Time under 500ns
- Low insert loss
- RoHS & HF compliant
- MSL: Level 3



SOT23-6

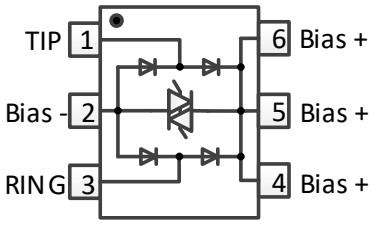
Standards Compatibility

- ANSI/IEEE C62.41
- IEC 61000-4-5, 30A (t_P=8/20μs)
- IEC 61000-4-2 level 4

  --15KV（air discharge）

  --8KV（contact discharge）

Schematic&PIN Configuration



Main Application

The Ultra-low Capacitance series provides overvoltage protection for applications such as VDSL2, ADSL2, and ADSL2+ with minimal effect on data signals. When the voltage between Tip and Ring exceeds the reference voltage, the WEOS5-024GF device will work under 500ns. The device is also bi-directional between pin1 to pin3. All electrical parameters and surge ratings apply to forward and reverse polarities.

Maximum Surge Ratings(between pin1 and pin 3, T_A=25℃)

Parameter	Symbol	Value	Unit
Non-repetitive impulse current 8/20※&1.2/50※※(IEC 61000-4-5)	I_{PP}	30	A

Notes: ※Current waveform in μs, ※※Voltage waveform in μs.

Electrical Characteristics (between pin 1 and pin 3, T_A = 25°C)

Part Number	V_{DRM}	I_{DRM}@V_{DRM}	V_{BO}	I_H	C_O @f=1MHz，2V	Delta C_O @Line Bias=1V to V_{DRM}
	V	nA	V	mA	pF	pF
	Max.	Max.	Max.	Typ.	Max.	Max.
WEOS5-024GF	24	100	40	40	3.0	0.5

V_{DRM}: Stand-off voltage.

I_{DRM}: Leakage current at V_{DRM}.

V_{BO}: Breakover voltage, is measured at 100V/μs.

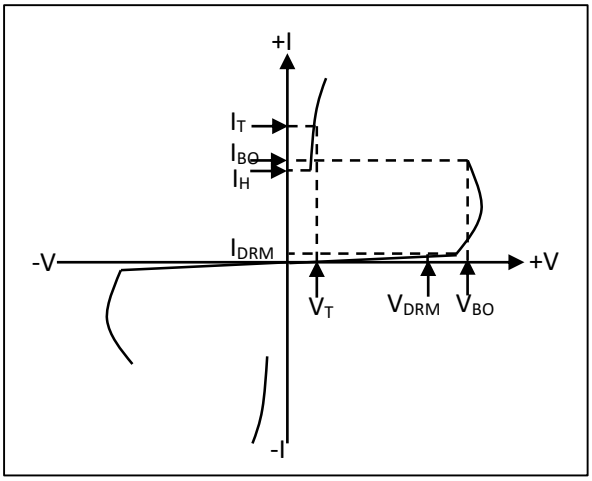
I_H: Holding current.

C_O: Off-state capacitance.

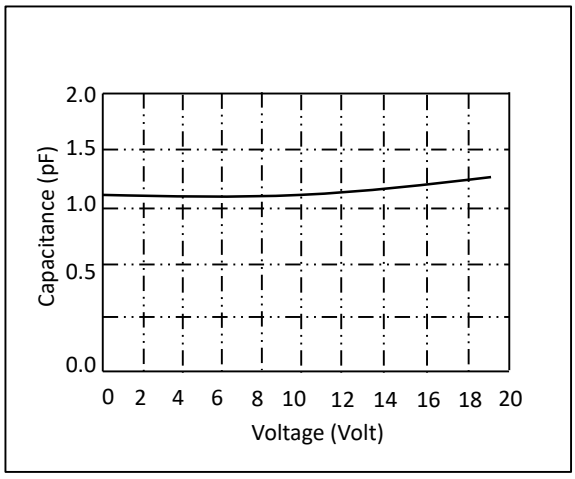
Thermal Information

Symbol	Parameter	Value	Unit
T_S	Storage temperature range	-55 to +150	°C
T_J	Maximum junction temperature	-40 to +125	°C

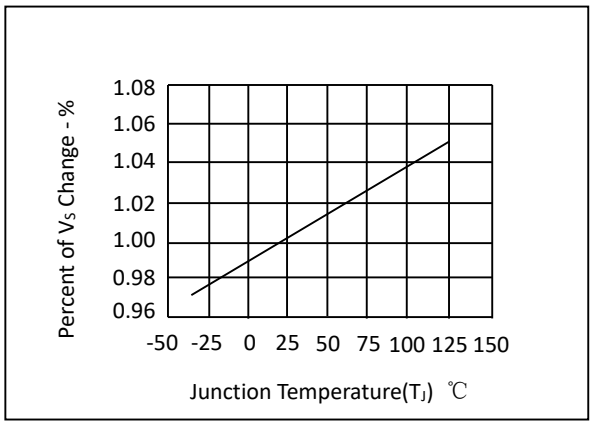
Electrical Characteristics Curves



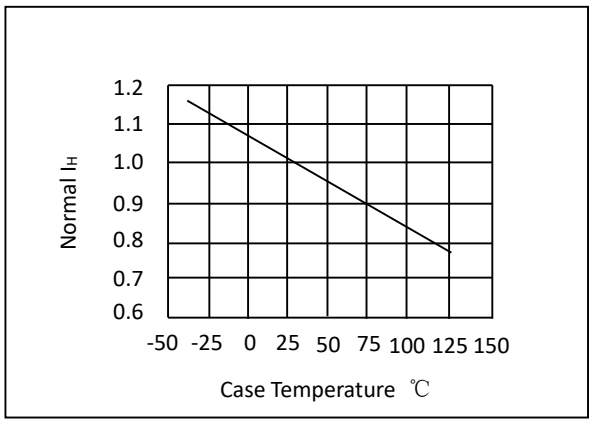
V-I Characteristics



Typical capacitance against line voltage
(without external bias)



Normalized V_S Change vs.Junction Temperature

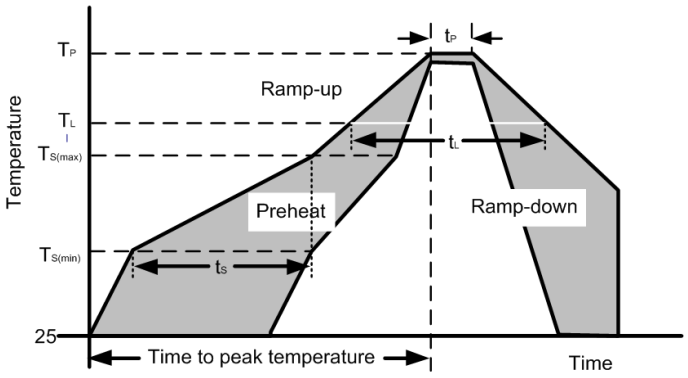


Normalized Holding Current vs. Case Temperature

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.

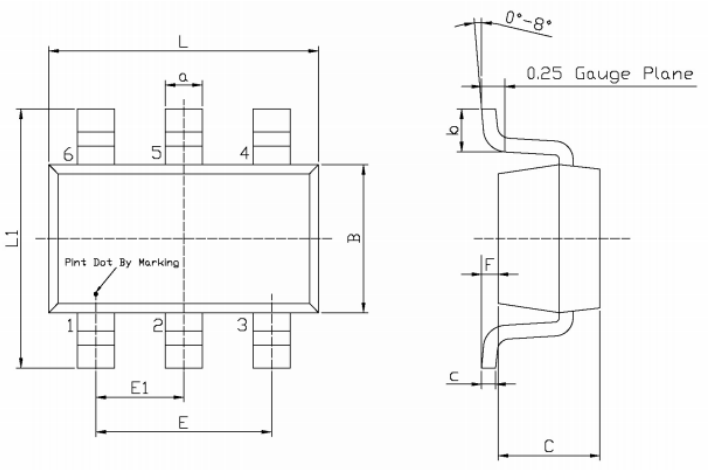
Soldering Parameters

Reflow Condition		
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60-190 s
Average ramp up rate (Liquidus Temp) (T_L) to peak		3°C/s max
Ts(max) to TL - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C

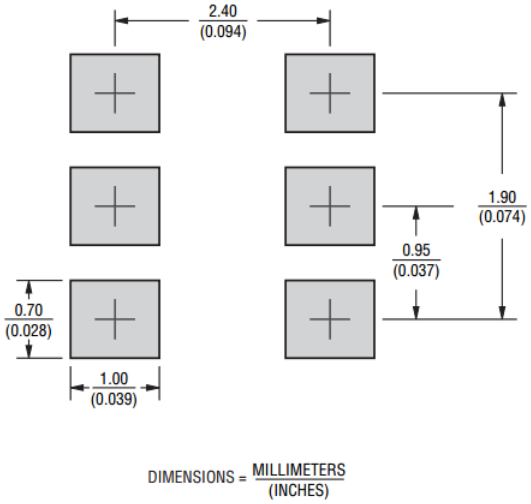


Product Dimensions

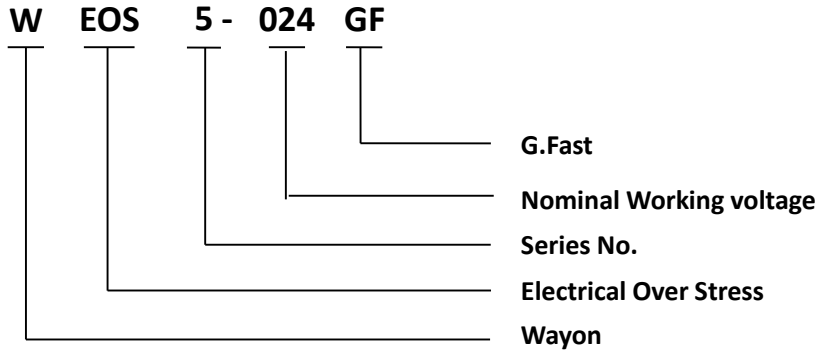
Symbol	Dimensions In Millimeters	
	Min	Max
L	2.82	3.02
B	1.50	1.70
C	0.90	1.30
L1	2.60	3.00
E	1.80	2.00
E1	0.85	1.05
a	0.30	0.50
c	0.10	0.20
b	0.35	0.55
F	0	0.15



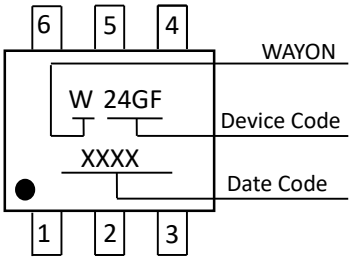
Recommended Solder Pad Layout



Part Numbering System and Marking



Marking:

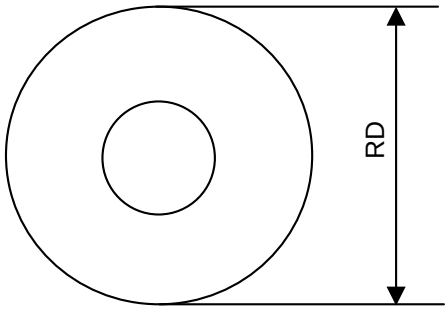


Package Information

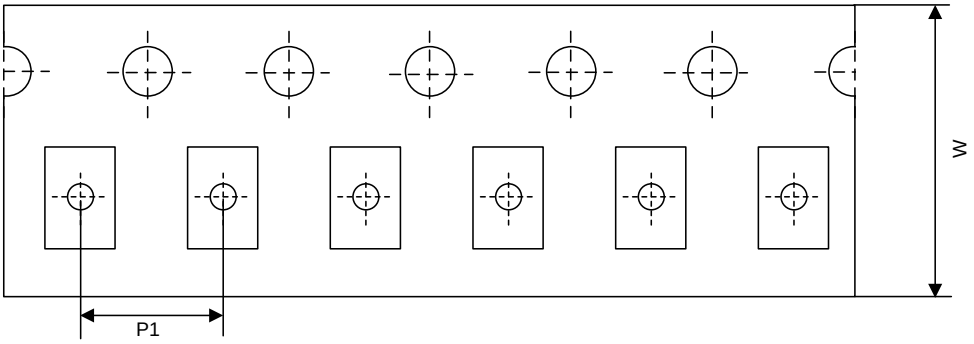
Package Type	Description	Quantity（pcs）
SOT23-6	Tape & Reel Pack	3000

Tape and Reel Information

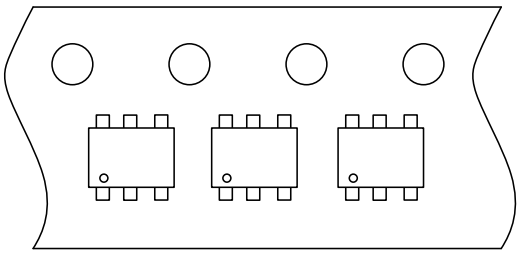
Reel Dimensions



Tape Dimensions



Quadrant Assignments for PIN1 Orientation in tape



Top View

User Direction of Feed

RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4 mm

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

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.

WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

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.

Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third-party legal rights. WAYON shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.