# HVR5520U15

Ultra Fast Recovery High Voltage Silicon Assembly

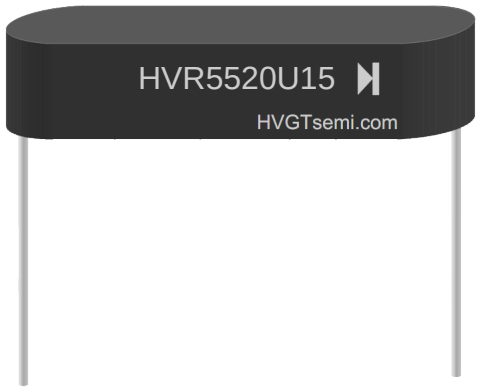
2.0A 15kV 75nS

## INTRODUCE:

HVGT high voltage silicon rectifier diodes is made of high quality glass passivated chip and high reliability epoxy resin sealing structure, and through professional testing equipment inspection qualified after to customers.

## REFERENCE SHAPE:

RoHS COMPLIANT




**HVGT Name: HVR-101255H**

## FEATURES:

- ▶Built in glass passivation chip.
- ▶Ultra fast recovery time.
- ▶High current.
- ▶High voltage design.
- ▶High reliability design.
- ▶Have anticorrosion in the surface.
- ▶UL94V-0 rated material epoxy resin vacuum forming.

## APPLICATIONS:

- ▶X-ray power supply.
- ▶Laser generator power supply.
- ▶Voltage doubling circuit.
- ▶Microwave transmission power supply.
- ▶Other high voltage rectifier circuits.

## PRIMARY CHARACTERISTICS:

| | | |
|---|---|---|
| $I_{F(AV)}$ | 2.0 | A |
| $V_{RRM}$ | 15 | kV |
| $I_{FSM}$ | 50 | A |
| $I_{RM}$ | 1.0 | uA |
| $V_{FM}$ | 22 | V |
| $T_{RR}$ | 75 | nS |
| $T_J$ (max.) | 125 | ° C |

## MECHANICAL DATA:

- Case: Epoxy resin molding.
- Terminal: Radial welding of lead wires.
- Net weight: 13.5 grams (approx).

## MARKING:




## PART NUMBER NOTE:

| TYPE | CHIP | IFAVM | TRR | VRRM |
|---|---|---|---|---|
| HVR | 55 | 2.0 | U | 15 |
| Radial Lead Assembly Series | GPP Chip Structure | 2.0 A | S = Standard Recovery Time<br>F = 100nS<br>U = 75nS | 15 kV |

**Note:** Specifications subject to change without notice. Photo is representation only.
Standard package quantity:250PCS/in Box.



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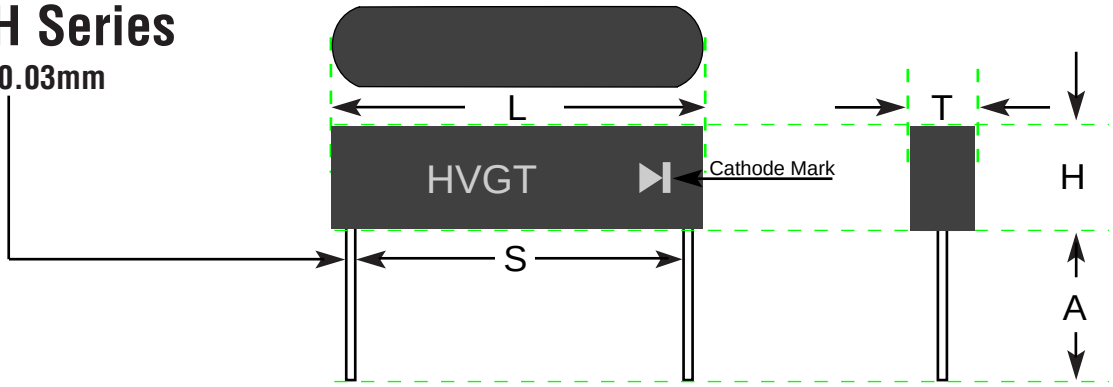
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## PACKAGE SIZE:

### HVR-101255H Series

**Lead Diameter 1.20±0.03mm**




| Dim. | Millimeters | | | Inches | | | Dim. | Millimeters | | | Inches | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Value | Min. | Max. | Value | Min. | Max. | | Value | Min. | Max. | Value | Min. | Max. |
| **H** | 12.0 | 11.5 | 12.5 | 0.472 | 0.453 | 0.492 | **T** | 10.0 | 9.8 | 10.2 | 0.394 | 0.386 | 0.402 |
| **L** | 55.0 | 53.0 | 57.0 | 2.165 | 2.087 | 2.244 | **S** | 50.0 | 48.0 | 52.0 | 1.969 | 1.890 | 2.047 |
| **A** | 20.0 | 20.0 | -- | 0.787 | 0.787 | -- | | | | | | | |

## MAXIMUM RATINGS AND CHARACTERISTICS: (Ta=25° C, Ambient temperature unless stated otherwise.)

| Items | Symbols | Condition | Data Value | Units |
|---|---|---|---|---|
| Maximum Repetitive Reverse Voltage | $V_{RRM}$ | -- | 15 | kV |
| Non-Repetitive Peak Reverse Voltage | $V_{RSM}$ | -- | 18 | kV |
| Maximum Average Forward Current | $I_{FAVM}$ | $T_A$ = 55° C | 2.0 | A |
| | | $T_{OIL}$= 55° C | 3.0 | A |
| Non-Repetitive Forward Surge Current | $I_{FSM}$ | 60Hz Half-Sine Wave; 8.3mS | 50 | A |
| Maximum Junction Temperature | $T_J$ | | 125 | ° C |
| Allowable Operation Case Temperature | $T_C$ | | -40~125 | ° C |
| Storage Temperature | $T_{STG}$ | | -55~150 | ° C |

## ELECTRICAL CHARACTERISTICS: (Ta=25° C, Ambient temperature unless stated otherwise.)

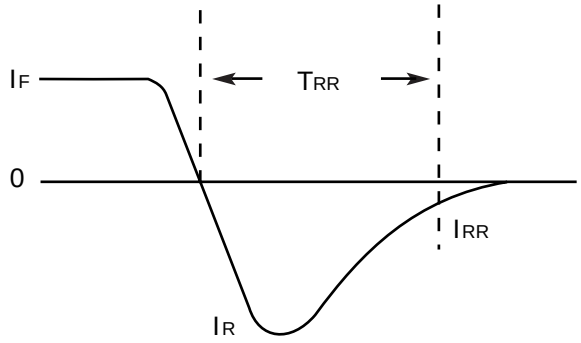
| Items | Symbols | Condition | Data Value | Units |
|---|---|---|---|---|
| Maximum Forward Voltage Drop | $V_{FM}$ | At $I_{FAVM}$ | 22 | V |
| Maximum Reverse Current | $I_{R1}$ | At $V_{RRM}$, $T_A$ =25° C | 1.0 | uA |
| | $I_{R2}$ | At $V_{RRM}$, $T_A$ =100° C | 20 | uA |
| Maximum Reverse Recovery Time | $T_{RR}$ | $I_F$ =0.5$I_R$ ; $I_R$= - $I_{FAVM}$ ; $I_{RR}$ = - 0.25$I_R$ | 75 | nS |
| Typical Junction Capacitance | $C_J$ | At $V_R$ = 0VDC, f = 1MHz | -- | pF |

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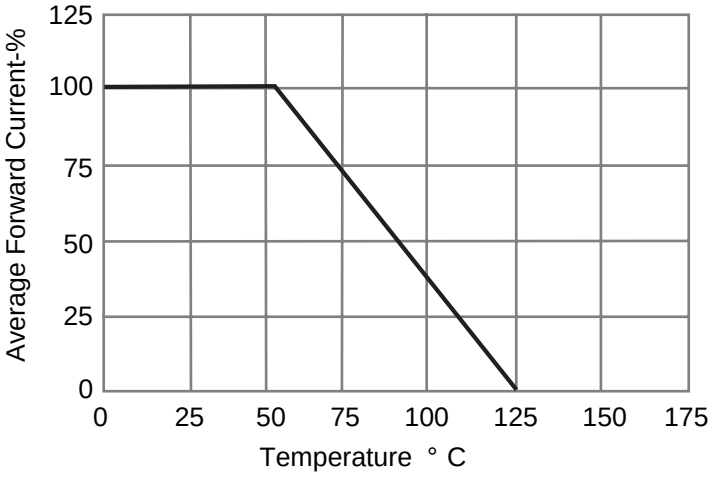
## FIGURE 01 Reverse Recovery Measurement Waveform



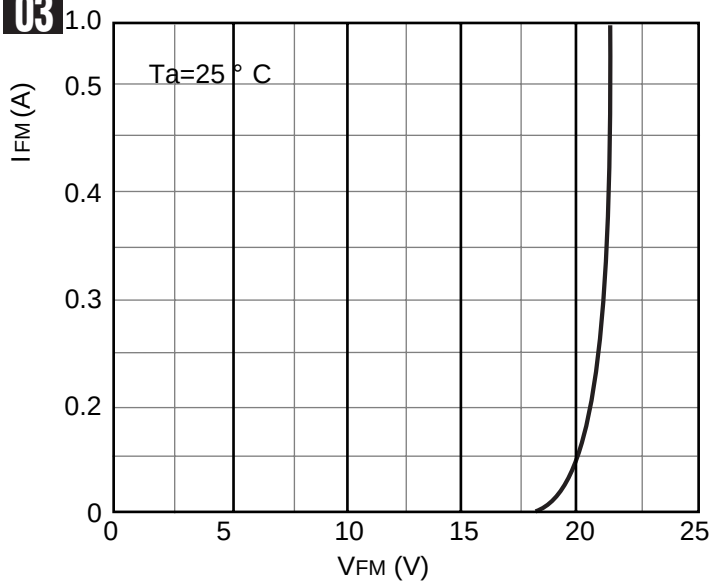

Typical data capture points: $I_F$ =0.5$I_R$ , $I_R$ , $I_{RR}$ =0.25$I_R$

$I_R$ is typically the rated average forward current maximum ($I_{FAVM}$) of the D.U.T

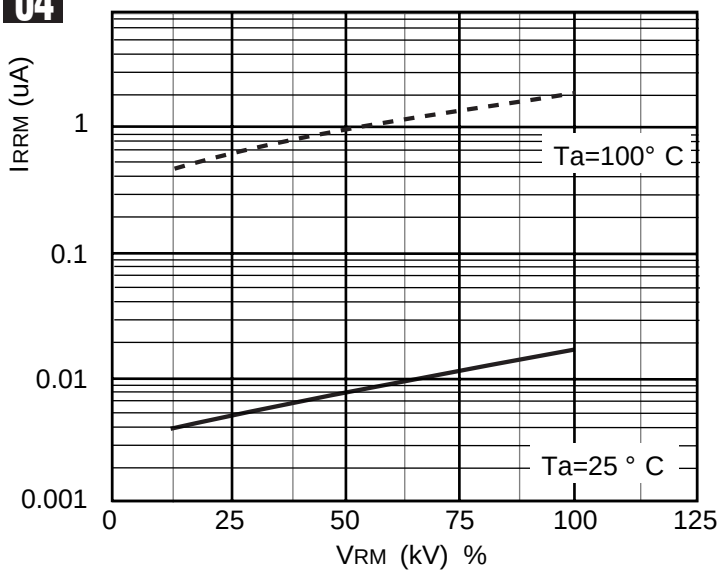
## FIGURE 02 Forward Current Derating Curve



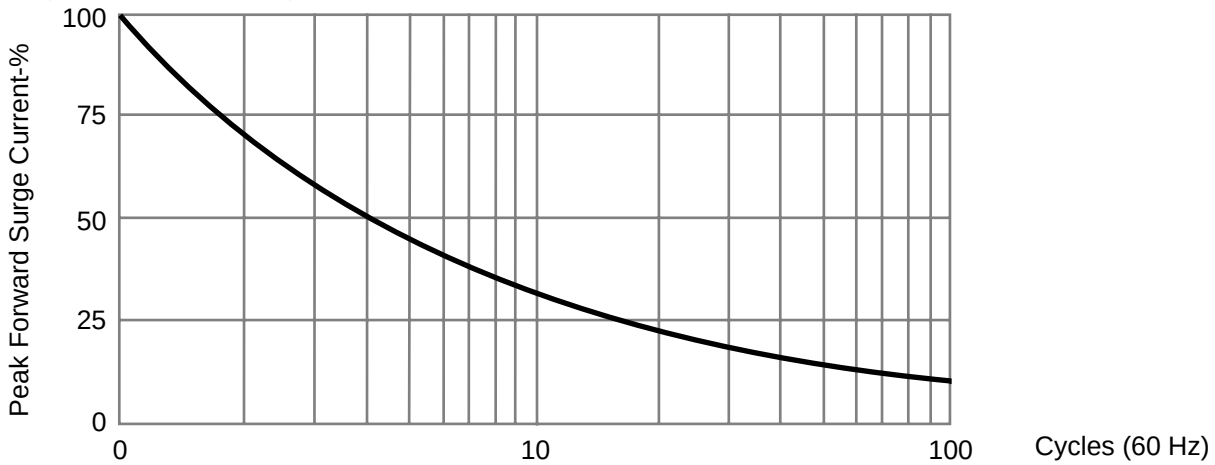

## FIGURE 03 Forward Characteristics




## FIGURE 04 Reverse Characteristics




## FIGURE 05 Repetitive Surge Current Derating Curve




This curve represents the percentage of published maximum surge rating as a function of surge repetition.



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