

# Ultra fast Rectifier

# STTH20L03CG

## FEATURES

- Ultrafast, soft and noise-free recovery
- Packaged in TO-263(D2PAK)
- Low forward voltage drop
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

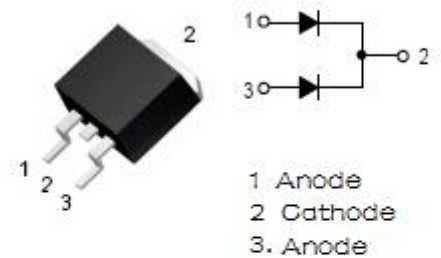
## APPLICATIONS

- Switching power supply
- Power switching circuits
- General purpose

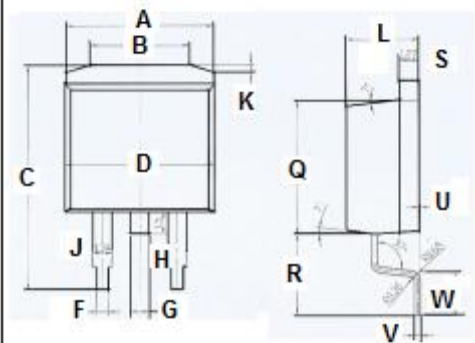
## ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

| SYMBOL             | PARAMETER                                                                                                                  |                           |            | VALUE   | UNIT               |
|--------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------|------------|---------|--------------------|
| VRRM<br>VRWM<br>VR | Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage $t_w=500\text{ns};\text{duty}=1/40$ |                           |            | 300     | V                  |
| IF(AV)             | Average Rectified Forward Current                                                                                          | $T_c=155^{\circ}\text{C}$ | Per diode  | 10      | A                  |
|                    |                                                                                                                            | $T_c=150^{\circ}\text{C}$ | Per device | 20      |                    |
| IF(RMS)            | Forward rms current                                                                                                        |                           |            | 30      | A                  |
| IFSM               | Nonrepetitive Peak Surge Current<br>$t_p=10\text{ms}$ sinusoidal                                                           |                           |            | 150     | A                  |
| TJ                 | Junction Temperature                                                                                                       |                           |            | -40~175 | $^{\circ}\text{C}$ |
| Tstg               | Storage Temperature Range                                                                                                  |                           |            | -65~175 | $^{\circ}\text{C}$ |

### D2PAK



### TO-263 Package



| DIM | mm    |       |
|-----|-------|-------|
|     | MIN   | MAX   |
| A   | 10    |       |
| B   | 6.6   | 6.8   |
| C   | 15.23 | 15.25 |
| D   | 10.15 | 10.17 |
| F   | 0.76  | 0.78  |
| G   | 1.26  | 1.28  |
| H   | 1.4   | 1.6   |
| J   | 1.33  | 1.35  |
| K   | 0.4   | 0.6   |
| L   | 4.6   | 4.8   |
| Q   | 8.69  | 8.71  |
| R   | 5.28  | 5.30  |
| S   | 1.26  | 1.28  |
| U   | 0.0   | 0.2   |
| V   | 0.37  | 0.39  |
| W   | 2.80  | 2.82  |

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## THERMAL CHARACTERISTICS

| SYMBOL      | PARAMETER                            |                    | MAX        | UNIT                        |
|-------------|--------------------------------------|--------------------|------------|-----------------------------|
| $R_{thj-c}$ | Thermal Resistance, Junction to Case | Per diode<br>Total | 1.5<br>1.0 | $^{\circ}\text{C}/\text{W}$ |

ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ ) (Pulse Test: Pulse Width=300  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ )

| SYMBOL   | PARAMETER                             | CONDITIONS                                                                            | MAX         | UNIT          |
|----------|---------------------------------------|---------------------------------------------------------------------------------------|-------------|---------------|
| $V_F$    | Maximum Instantaneous Forward Voltage | $I_F=10\text{A}; T_j=25^{\circ}\text{C}$<br>$I_F=10\text{A}; T_j=125^{\circ}\text{C}$ | 1.2<br>0.95 | V             |
| $I_R$    | Maximum Instantaneous Reverse Current | $V_R=V_{RWM}; T_j=25^{\circ}\text{C}$<br>$V_R=V_{RWM}; T_j=125^{\circ}\text{C}$       | 10<br>100   | $\mu\text{A}$ |
| $t_{rr}$ | Maximum Reverse Recovery Time         | $I_F=1\text{A}; V_R=30\text{V}; dI_F/dt=-100\text{A}/\mu\text{s}$                     | 35          | ns            |

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