# CSP20S50S-A

**Chip Integration Technology Corporation**

**Super Low Barrier High Voltage Power Rectifier**

## Main Product Characteristics

| | |
|---|---|
| $I_{F(AV)}$ | 20A |
| $V_{RRM}$ | 50V |
| $T_J$ | 150°C |
| $V_{(Typ)}$ | 0.63V |

## ■ Features

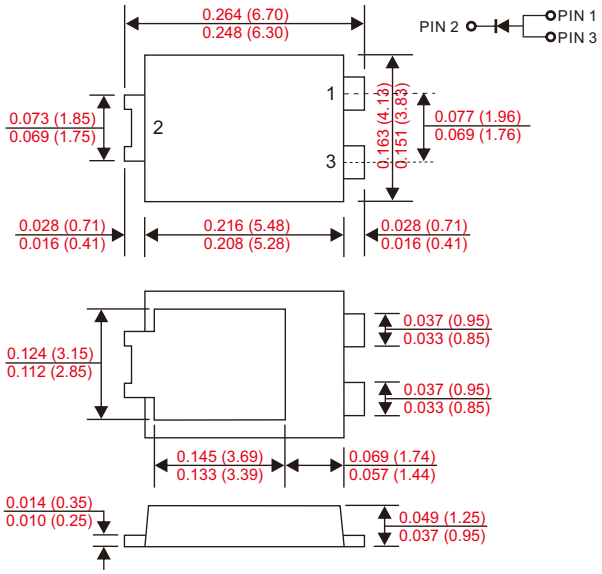
- Low forward voltage drop.
- Excellent high temperature stability.
- Fast switching capability.
- Suffix "G" indicates Halogen-free part, ex.CSP20S50SG-A.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

## ■ Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-277.
- Lead : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight : Approximated 0.093 grams.

## ■ Outline

TO-277




Dimensions in inches and (millimeters)

## ■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter | Conditions | Symbol | CSP20S50S-A | UNIT |
|---|---|---|---|---|
| Marking code | | | CSP20S50S | |
| Peak repetitive reverse voltage | | $V_{RRM}$ | | |
| Working peak reverse voltage | | $V_{RWM}$ | 50 | V |
| DC blocking voltage | | $V_{RM}$ | | |
| RMS reverse voltage | | $V_{R(RMS)}$ | 35 | V |
| Forward rectified current | | $I_O$ | 20 | A |
| Forward surge current | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$ | 350 | A |
| Thermal resistance | Junction to case | $R_{\theta JC}$ | 4 | °C/W |
| Operating and Storage temperature | | $T_J$, $T_{STG}$ | -55 ~ +150 | °C |

| Parameter | Conditions | Symbol | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Reverse breakdown voltage | $I_R$ = 0.5mA | $V_{(BR)R}$ | 50 | | | V |
| Forward voltage drop | $I_F$ = 20A, $T_J$ = 25°C | $V_F$ | | | 500 | mV |
| | $I_F$ = 20A, $T_J$ = 125°C | | | | 460 | |
| Reverse current | $V_R$ = $V_{RRM}$ $T_J$ = 25°C | $I_R$ | | | 0.5 | mA |
| | $V_R$ = $V_{RRM}$ $T_J$ = 125°C | | | | 100 | |

Note : 1.FR-4 PCB, 2oz.Copper.
2.Polymide PCB, 2oz.Copper.Cathode pad dimensions 18.8mm x 14.4mm.Anode pad dimensions 5.6mm x 14.4mm.



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■ Rating and characteristic curves

Fig.1 - Forward Current Derating Curve

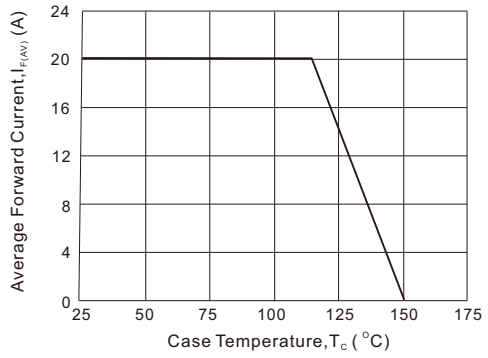



Fig. 2 - Instantaneous Forward Characteristics

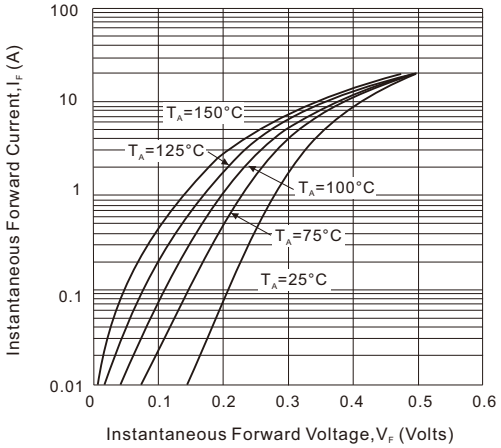
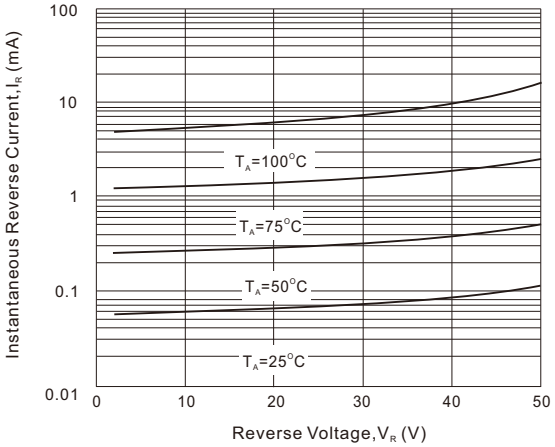



Fig. 3 - Reverse Characteristics



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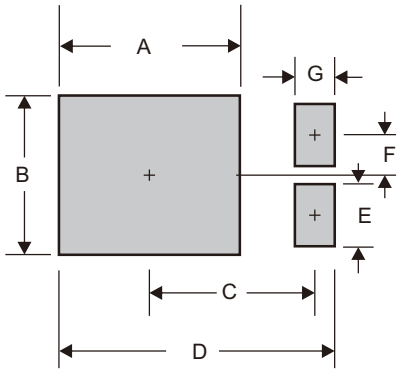
■ TO-277 foot print




| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| 0.185 (4.70) | 0.142 (3.60) | 0.152 (3.87) | 0.260 (6.60) | 0.055 (1.40) | 0.035 (0.90) | 0.031 (0.80) |

Dimensions in inches and (millimeters)

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