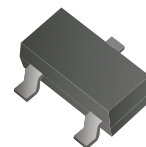


## CDST-21/A/C/S-G

**Reverse Voltage: 250 Volts**

**Forward Current: 200 mA**

**RoHS Device**



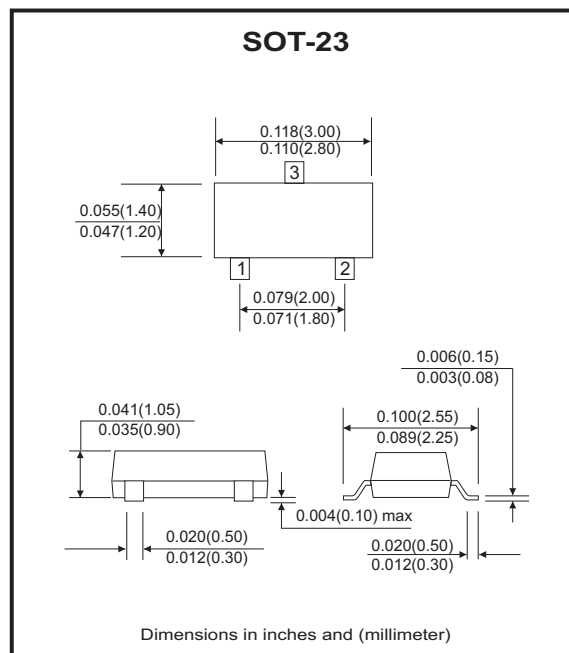
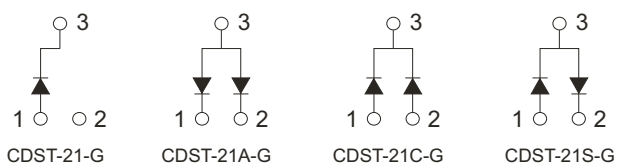
### Features

- Fast Switching Speed.
- Surface Mount Package Ideally Suited for Automatic Insertion.
- For General Purpose Switching Applications.
- High Conductance.

### Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Approx. weight: 0.008 grams

### Circuit diagram



### Maximum Ratings and Electrical Characteristics

(at Ta=25°C unless otherwise noted)

| Parameter                                 | Symbol          | Value       | Units |
|-------------------------------------------|-----------------|-------------|-------|
| Repetitive peak reverse voltage           | $V_{RRM}$       | 250         | V     |
| Working peak reverse voltage              | $V_{RWM}$       |             |       |
| DC blocking voltage                       | $V_R$           |             |       |
| Average rectified output current          | $I_O$           | 200         | mA    |
| Non-repetitive peak forward surge current | $I_{FSM}$       | 2.5         | A     |
| @ t = 1.0μs                               |                 | 0.5         |       |
| @ t = 1.0s                                |                 |             |       |
| Repetitive peak forward surge current     | $I_{FRM}$       | 625         | mA    |
| Power dissipation                         | $P_D$           | 225         | mW    |
| Thermal resistance junction to ambient    | $R_{\theta JA}$ | 55          | °C/W  |
| Junction temperature                      | $T_J$           | 150         | °C    |
| Storage temperature                       | $T_{STG}$       | -55 to +150 | °C    |

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REV:C

## Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                       | Conditions                                                        | Symbol     | Min. | Max.         | Unit          |
|---------------------------------|-------------------------------------------------------------------|------------|------|--------------|---------------|
| Reverse breakdown voltage       | $I_R = 100\mu\text{A}$                                            | $V_{(BR)}$ | 250  |              | V             |
| Reverse voltage leakage current | $V_R = 200\text{V}$                                               | $I_R$      |      | 0.1          | $\mu\text{A}$ |
| Forward voltage                 | $I_F = 100\text{mA}$<br>$I_F = 200\text{mA}$                      | $V_F$      |      | 1000<br>1250 | mV            |
| Diode Capacitance               | $V_R=0\text{V}$ , $f=1\text{MHz}$                                 | $C_D$      |      | 5            | pF            |
| Reverse recovery time           | $I_F=I_R=30\text{mA}$ , $I_{rr}=0.1 \times I_R$ , $R_L=100\Omega$ | $T_{rr}$   |      | 50           | nS            |

## RATING AND CHARACTERISTIC CURVES (CDST-21/A/C/S-G)

Fig.1 - Forward characteristics

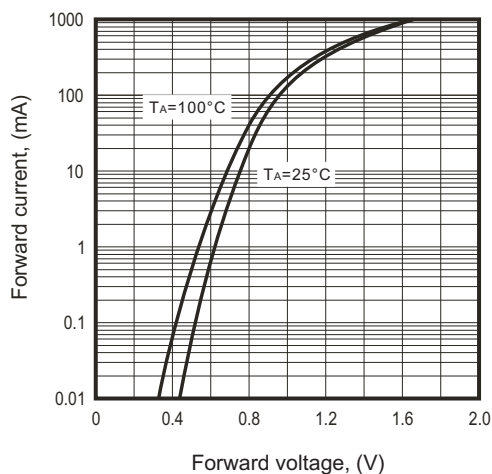


Fig.2 - Reverse characteristics

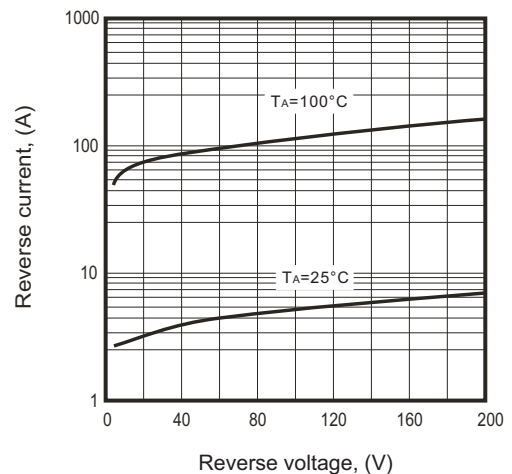


Fig.3 - Capacitance between

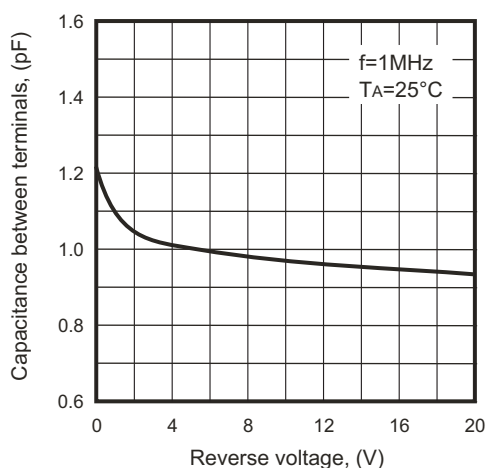
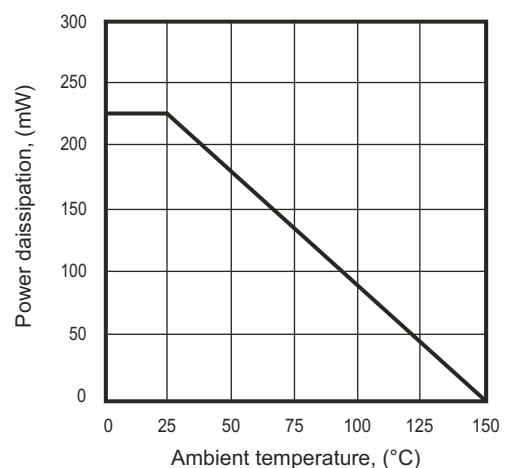
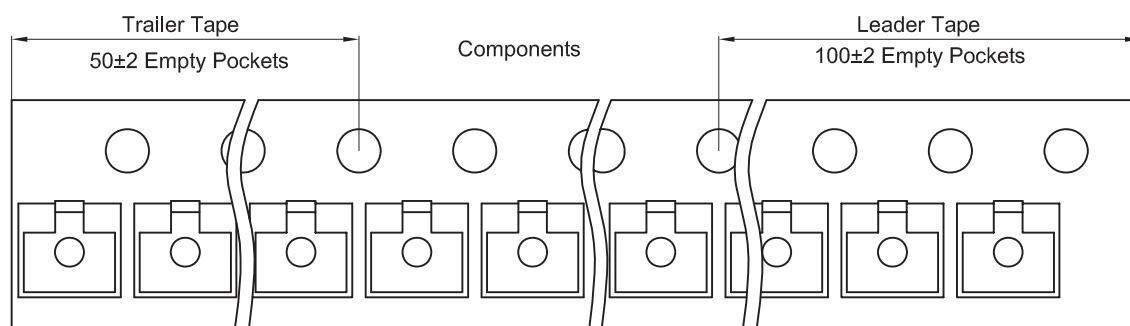
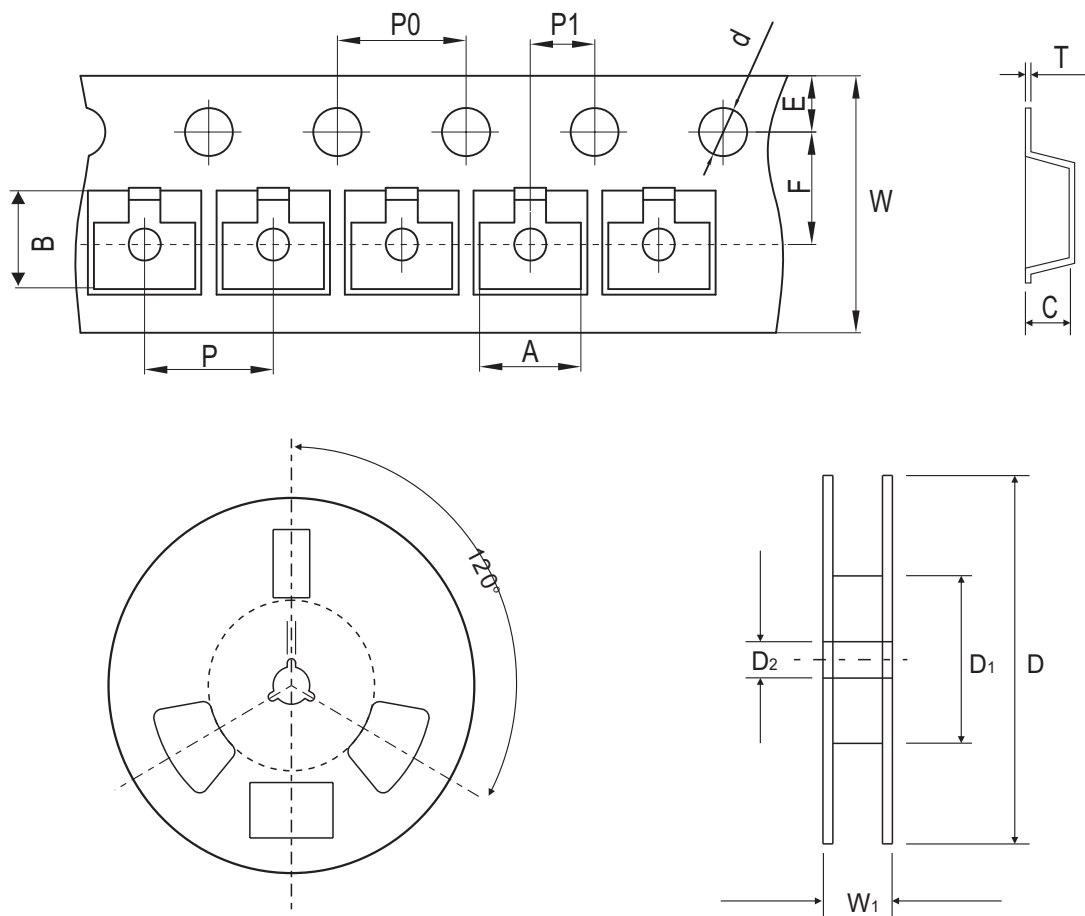


Fig.4 - Power derating curve



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## Reel Taping Specification



| SOT-23 | SYMBOL | A                 | B                 | C                 | d                      | D                 | D1                | D2                |
|--------|--------|-------------------|-------------------|-------------------|------------------------|-------------------|-------------------|-------------------|
|        | (mm)   | $3.15 \pm 0.10$   | $2.77 \pm 0.10$   | $1.22 \pm 0.10$   | $\Phi 1.50 \pm 0.10$   | $178 \pm 2.00$    | $54.40 \pm 1.00$  | $13.00 \pm 1.00$  |
|        | (inch) | $0.124 \pm 0.004$ | $0.109 \pm 0.004$ | $0.048 \pm 0.004$ | $\Phi 0.059 \pm 0.004$ | $7.008 \pm 0.079$ | $2.142 \pm 0.039$ | $0.512 \pm 0.039$ |

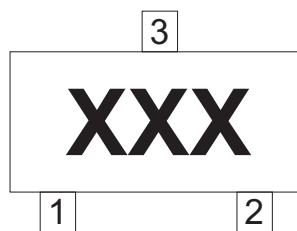
| SOT-23 | SYMBOL | E                 | F                 | P                 | P0                | P1                | W                         | W1                |
|--------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|-------------------|
|        | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $8.00 + 0.30 / - 0.10$    | $12.30 \pm 1.00$  |
|        | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.315 + 0.012 / - 0.004$ | $0.484 \pm 0.039$ |

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REV:C

## Marking Code

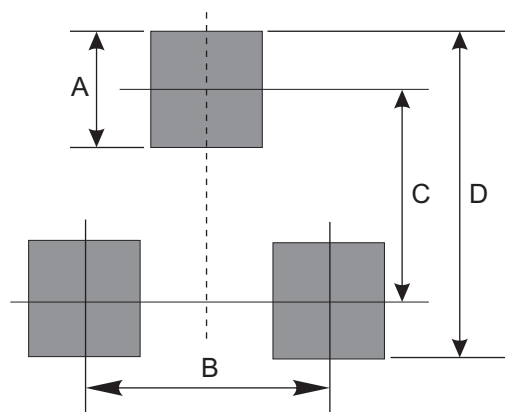
| Part Number | Marking Code |
|-------------|--------------|
| CDST-21-G   | JS           |
| CDST-21A-G  | JS2          |
| CDST-21C-G  | JS3          |
| CDST-21S-G  | JS4          |



xx/xxx = Product type marking code

## Suggested PAD Layout

| SIZE | SOT-23 |        |
|------|--------|--------|
|      | (mm)   | (inch) |
| A    | 0.80   | 0.031  |
| B    | 1.90   | 0.075  |
| C    | 2.02   | 0.080  |
| D    | 2.82   | 0.111  |



## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOT-23    | 3,000           | 7                   |

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