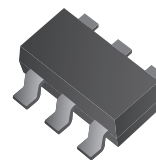


## ACSR065V0P RoHs Device

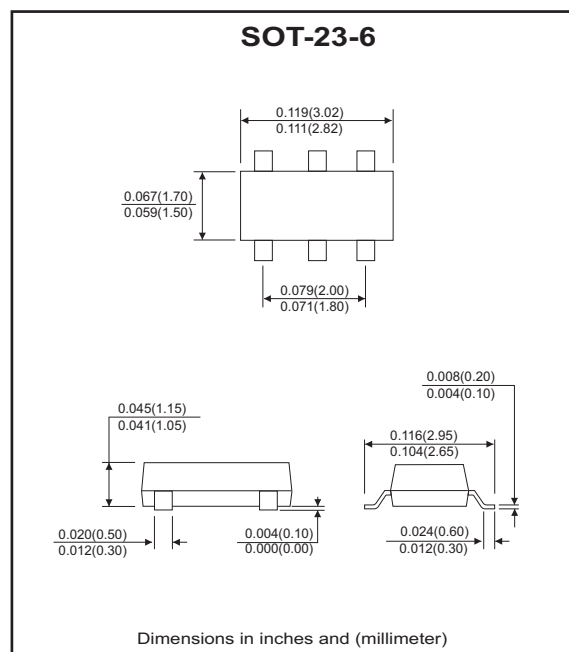


### Features

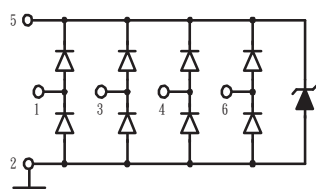
- ESD Protect for 4 high-speed I/O channels.
- IEC61000-4-2 Level 4 ESD protection.
- IEC61000-4-4 (FET)20A for I/O,80A for Power.
- Working voltage: 5V
- Low capacitance:1.3pF(Typ.).
- High component density.
- Comply with AEC-Q101

### Mechanical data

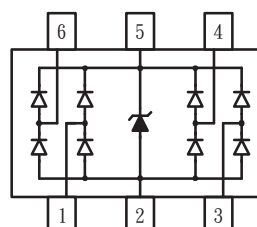
- Case: SOT-23-6 standard package molded pastic.
- Terminals: Solder plated, solderable per MIL-STD-750,method 2026.
- Mounting position: Any
- Weight: 0.015 gram (approx.).



### Circuit Diagram



### Pin Configuration



### Maximum Ratings (at T<sub>A</sub>=25°C unless otherwise noted)

| Parameter                                                                      | Symbol           | Value                    | Unit |
|--------------------------------------------------------------------------------|------------------|--------------------------|------|
| Peak pulse current ( tp = 8/20 us)                                             | I <sub>PP</sub>  | 6.5                      | A    |
| Operating supply voltage                                                       | V <sub>DC</sub>  | 6                        | V    |
| ESD per IEC 61000-4-2(Air)<br>ESD per IEC 61000-4-2(Contact)                   | ESD              | 18<br>14                 | kV   |
| ESD per IEC 61000-4-2(Air)(VDD-GND)<br>ESD per IEC 61000-4-2(Contact)(VDD-GND) | ESD_VDD          | 30                       | kV   |
| Lead soldering temperature                                                     | T <sub>SOL</sub> | 260 ( 10 sec)            | °C   |
| Operating temperature                                                          | T <sub>j</sub>   | -55 to +85               | °C   |
| Storage temperature                                                            | T <sub>STG</sub> | -55 to +125              | °C   |
| DC voltage at any I/O pin                                                      | V <sub>IO</sub>  | (GND -0.5) to (VDD +0.5) | V    |

## Electrical Characteristics (at TA=25°C unless otherwise noted)

| Parameter                 | Conditions                                                                                                                                                 | Symbol    | Min | Typ  | Max  | Unit |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----|------|------|------|
| Reverse stand-Off voltage | Pin 5 to Pin 2                                                                                                                                             | $V_{RWM}$ |     |      | 5    | V    |
| Reverse leakage current   | $V_{RWM} = 5\text{ V}$ , Pin 5 to Pin 2                                                                                                                    | $I_R$     |     |      | 5    | uA   |
|                           | $V_{PIN5} = 5\text{ V}$ , $V_{PIN2} = 0\text{ V}$ , $V_{IO} = 0\sim 5\text{ V}$                                                                            |           |     |      | 1    |      |
| Diode breakdown voltage   | $I_R = 1\text{ mA}$ , Pin 5 to Pin 2                                                                                                                       | $V_{BD}$  | 6   |      | 9    | V    |
| Forward voltage           | $I_F = 15\text{ mA}$ , Pin 2 to Pin 5                                                                                                                      | $V_F$     |     | 0.8  | 1    | V    |
| Clamping voltage          | $I_{PP} = 5\text{ A}$ , $t_p = 8/20\mu\text{s}$ ,<br>Any Channel Pin to Ground                                                                             | $V_C$     |     | 8.1  | 9    | V    |
|                           | IEC 61000-4-2 +6kV, Contact mode<br>Any Channel Pin to Ground                                                                                              |           |     | 12.5 |      |      |
|                           | IEC 61000-4-2 +6kV, Contact mode<br>VDD Pin to Ground                                                                                                      |           |     | 9    |      |      |
| Junction capacitance      | $V_{pin5} = 5\text{ V}$ , $V_{pin2} = 0\text{ V}$ , $V_{IO} = 2.5\text{ V}$ ,<br>$f = 1\text{ MHz}$ , Any Channel Pin to Ground                            | $C_j$     |     | 1.3  | 1.6  | pF   |
|                           | $V_{pin5} = 5\text{ V}$ , $V_{pin2} = 0\text{ V}$ , $V_{IO} = 2.5\text{ V}$ ,<br>$f = 1\text{ MHz}$ , Between Channel Pins                                 |           |     | 0.12 | 0.14 |      |
|                           | $V_{pin5} = 5\text{ V}$ , $V_{pin2} = 0\text{ V}$ , $V_{IN} = 2.5\text{ V}$ ,<br>$f = 1\text{ MHz}$ , Channel_x pin to ground -<br>channel_y pin to ground |           |     | 0.05 | 0.07 |      |

## RATING AND CHARACTERISTIC CURVES (ACSR065V0P)

Fig. 1 - Power derating curve

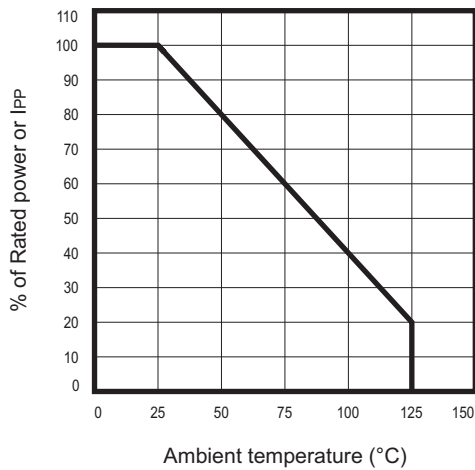


Fig. 2 - Clamping voltage vs. Peak pulse current

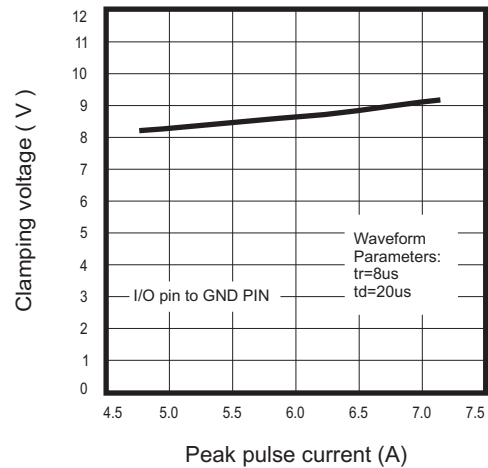


Fig.3 - Forward voltage v.s. forward current

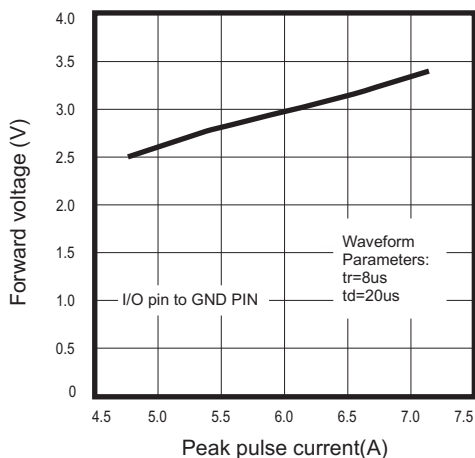


Fig.4 - Typical variation of  $C_{IN}$  v.s.  $V_{IN}$

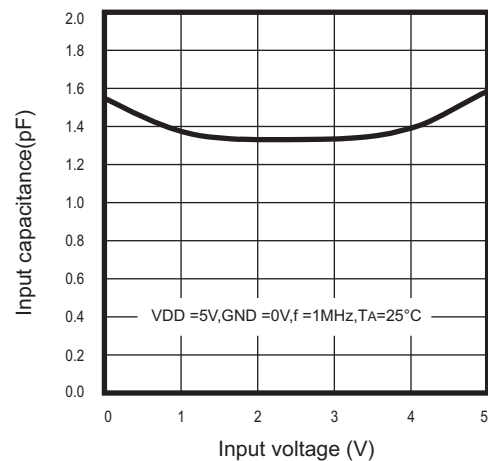


Fig. 5 - Typical variation of  $C_{IN}$  v.s. temperature

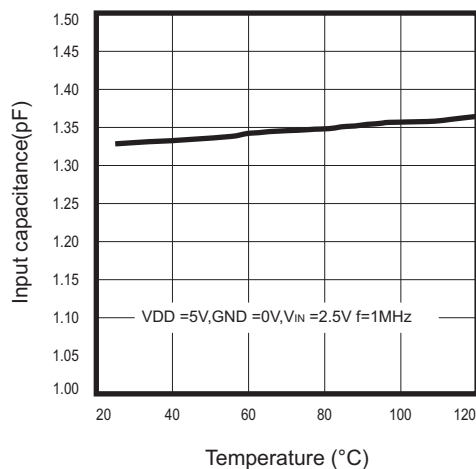


Fig. 6 - Transmission line pulsing (TLP) measurement

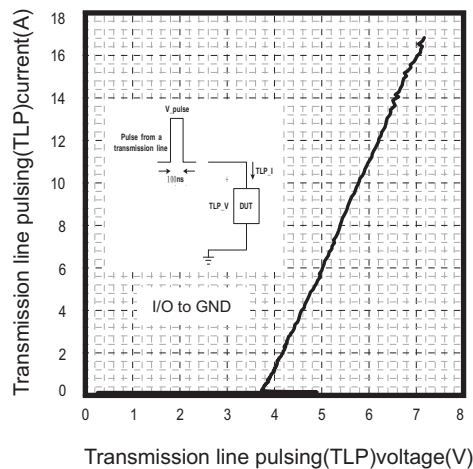
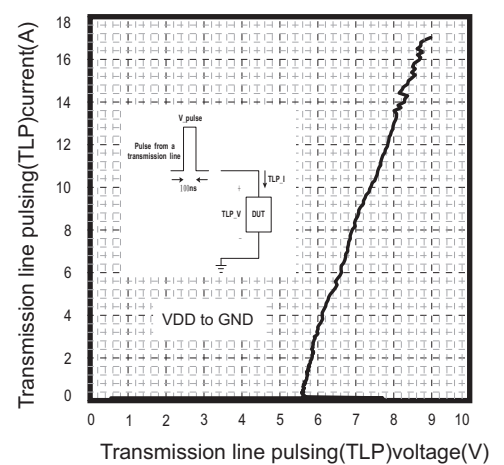
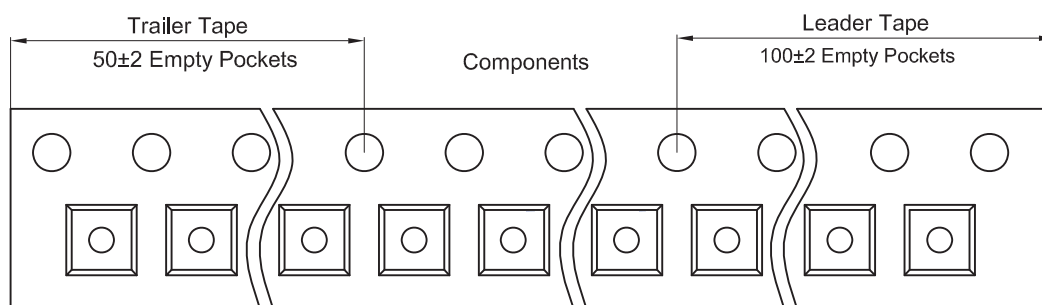
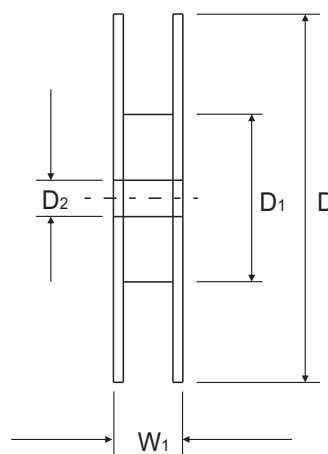
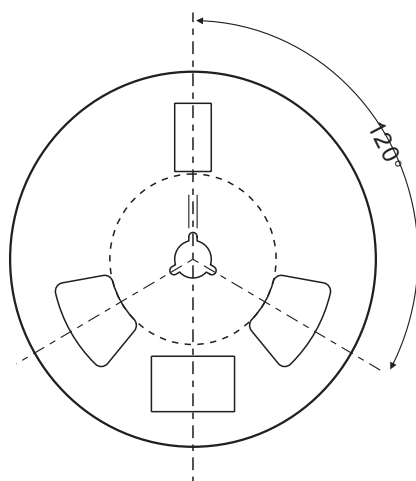
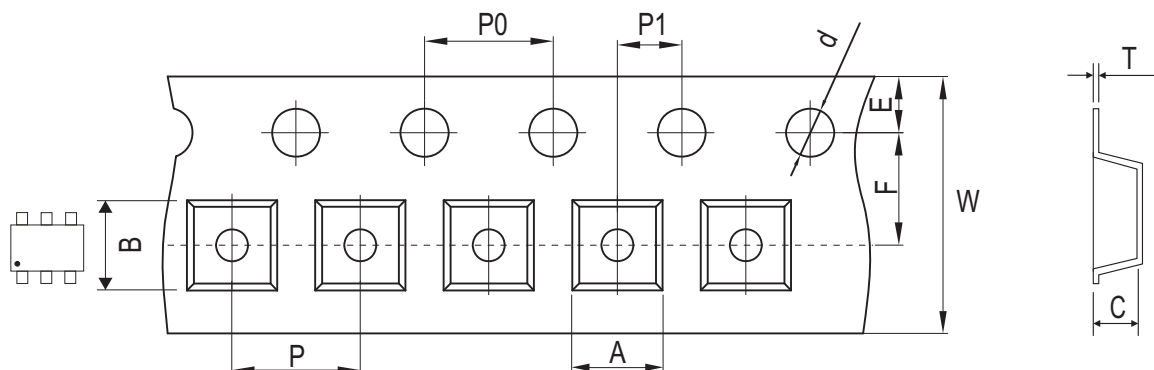


Fig.7 -Transmission line pulsing (TLP) measurement



## Reel Taping Specification

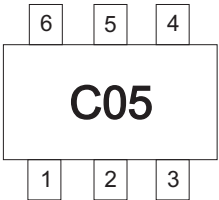


| SOT-23-6 | SYMBOL | A                 | B                 | C                 | d                 | D                        | D1                | D2                |
|----------|--------|-------------------|-------------------|-------------------|-------------------|--------------------------|-------------------|-------------------|
|          | (mm)   | $3.17 \pm 0.10$   | $3.23 \pm 0.10$   | $1.37 \pm 0.10$   | $1.50 \pm 0.05$   | $180.0 + 0.00 / - 0.30$  | $60.00 \pm 0.50$  | $13.00 \pm 0.20$  |
|          | (inch) | $0.125 \pm 0.004$ | $0.127 \pm 0.004$ | $0.054 \pm 0.004$ | $0.059 \pm 0.002$ | $7.087 + 0.00 / - 0.012$ | $2.362 \pm 0.020$ | $0.512 \pm 0.008$ |

| SOT-23-6 | SYMBOL | E                 | F                 | P                 | P0                | P1                | W                         | W1                |
|----------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|-------------------|
|          | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.05$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.05$   | $8.00 + 0.30 / - 0.10$    | $12.30 \pm 0.20$  |
|          | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.002$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.002$ | $0.315 + 0.012 / - 0.004$ | $0.484 \pm 0.008$ |

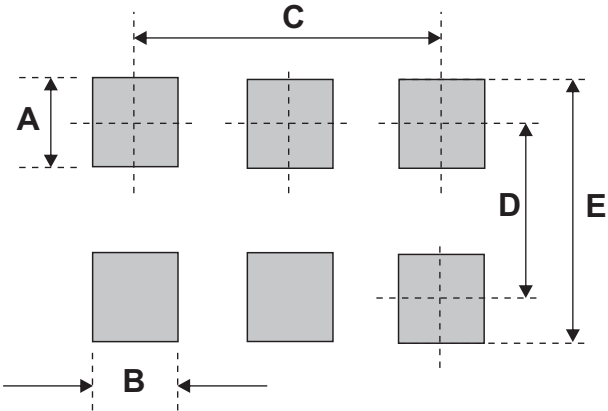
Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| ACSR065V0P  | C05          |



Suggested PAD Layout

| SIZE | SOT-23-6 |        |
|------|----------|--------|
|      | (mm)     | (inch) |
| A    | 1.10     | 0.043  |
| B    | 0.60     | 0.024  |
| C    | 0.95     | 0.037  |
| D    | 2.50     | 0.098  |
| E    | 3.60     | 0.142  |



Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOT-23-6  | 3,000           | 7                   |