

## Maximum Rating (at TA=25°C unless otherwise noted)

| Parameter                                                    | Symbol           | Value                    | Unit |
|--------------------------------------------------------------|------------------|--------------------------|------|
| Peak pulse current ( tp = 8/20 us)                           | I <sub>PP</sub>  | 6                        | 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) | V <sub>ESD</sub> | 17<br>12                 | 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 +150              | °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 4 to Pin 1                                                                                                                          | V <sub>RWM</sub>     |     |      | 5    | V    |
| Reverse leakage current              | V <sub>RWM</sub> = 5 V, T=25°C, Pin 4 to Pin 1                                                                                          | I <sub>Leak</sub>    |     |      | 2    | uA   |
| Channel leakage current              | V <sub>PIN 4</sub> = 5 V, V <sub>PIN 1</sub> = 0V, T=25°C                                                                               | I <sub>CH-Leak</sub> |     |      | 1    | uA   |
| Diode breakdown voltage              | I <sub>R</sub> = 1 mA,, T=25°C, Pin 4 to Pin 1                                                                                          | V <sub>BV</sub>      | 6.2 |      |      | V    |
| Forward voltage                      | I <sub>F</sub> = 15 mA,, T=25°C, Pin 1 to Pin 4                                                                                         | V <sub>F</sub>       |     | 0.8  | 1    | V    |
| Clamping voltage                     | I <sub>PP</sub> = 5 A, tp=8/20us, T=25°C,<br>Any Channel Pin to Ground                                                                  | V <sub>CL</sub>      |     | 8.1  | 9    | V    |
| ESD Holding Voltage                  | IEC 61000-4-2 +6kV, T=25°C,<br>Contact mode Any channel<br>pin to ground                                                                | V <sub>hold</sub>    |     | 13   |      | V    |
| Channel Input Capacitance            | V <sub>pin4</sub> = 5V,V <sub>pin1</sub> = 0V, V <sub>IN</sub> =2.5V,<br>f = 1MHz,Any channel pin to ground                             | C <sub>IN</sub>      |     | 1.2  | 1.4  | pF   |
| Channel to Channel Input Capacitance | V <sub>pin4</sub> = 5V,V <sub>pin1</sub> = 0V, V <sub>IN</sub> =2.5V<br>f = 1MHz,Between channel pin                                    | C <sub>CROSS</sub>   |     | 0.1  | 0.12 | pF   |
| Voltage of Channel Input Capacitance | V <sub>pin4</sub> = 5V,V <sub>pin1</sub> = 0V, V <sub>IN</sub> =2.5V<br>f = 1MHz,Channel_ x pin to ground -<br>channel_ y pin to ground | ΔC <sub>IN</sub>     |     | 0.04 | 0.06 | pF   |

## RATING AND CHARACTERISTIC CURVES (CSRS045V0P-HF)

Fig. 1 - Power derating curve

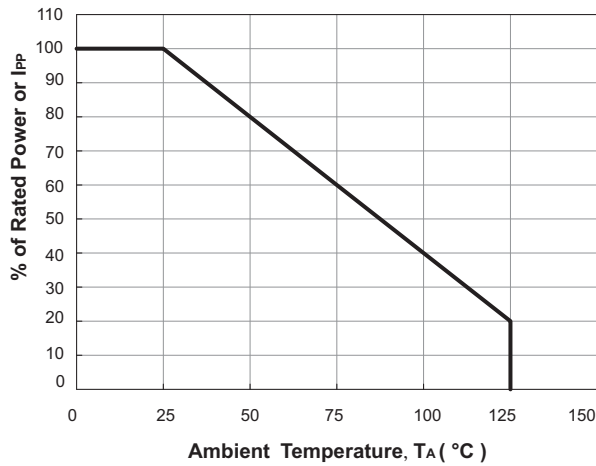


Fig. 2 - Clamping voltage vs. Peak pulse current

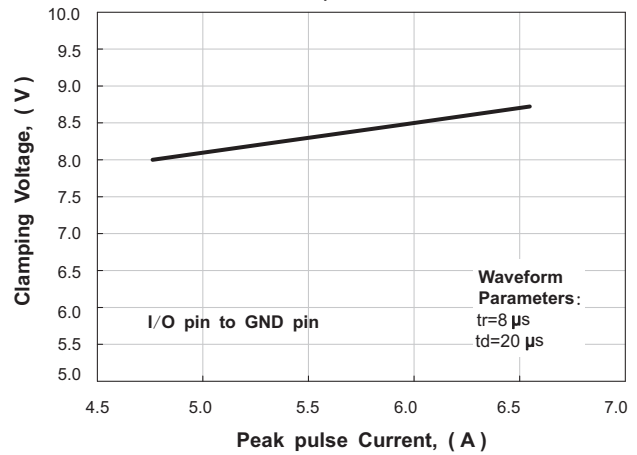


Fig.3 - Forward voltage v.s. forward current

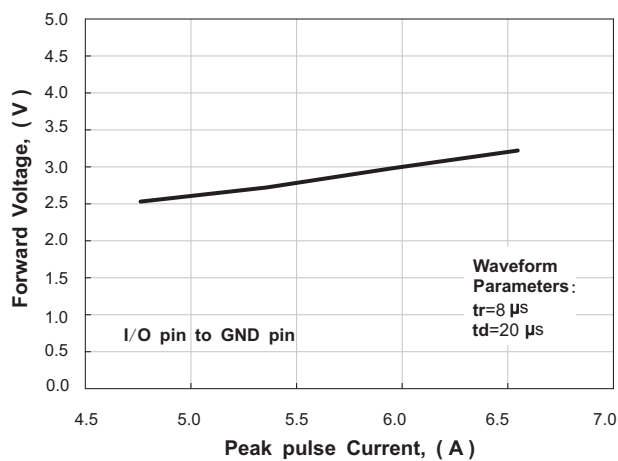


Fig.4 - Typical variation of  $C_{IN}$  v.s.  $V_{IN}$

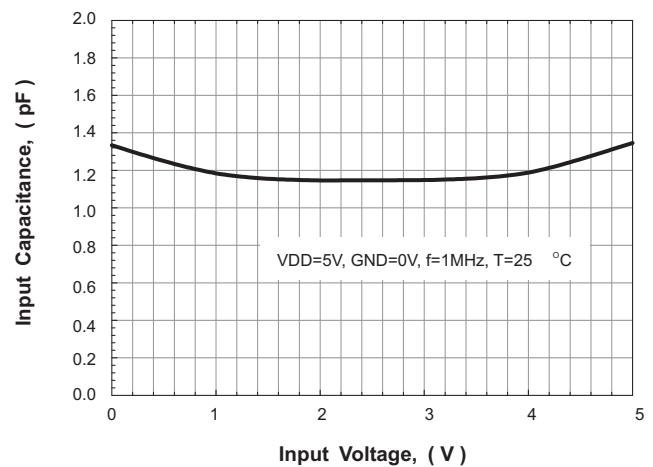


Fig. 5 - Typical variation of  $C_{IN}$  v.s. temperature

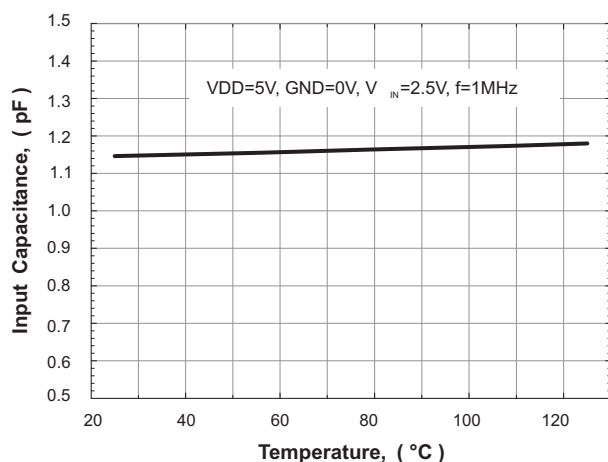
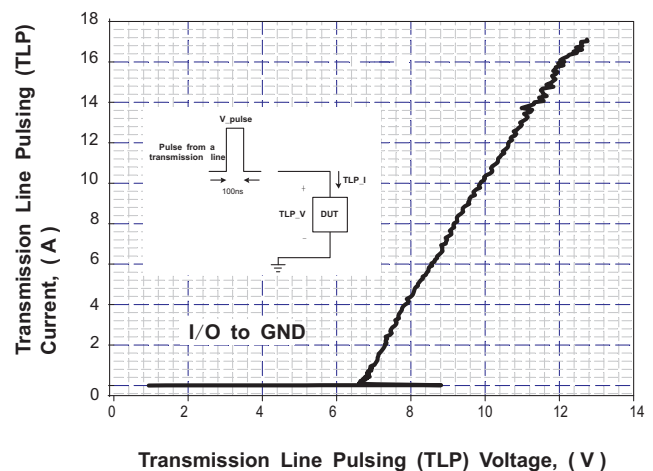
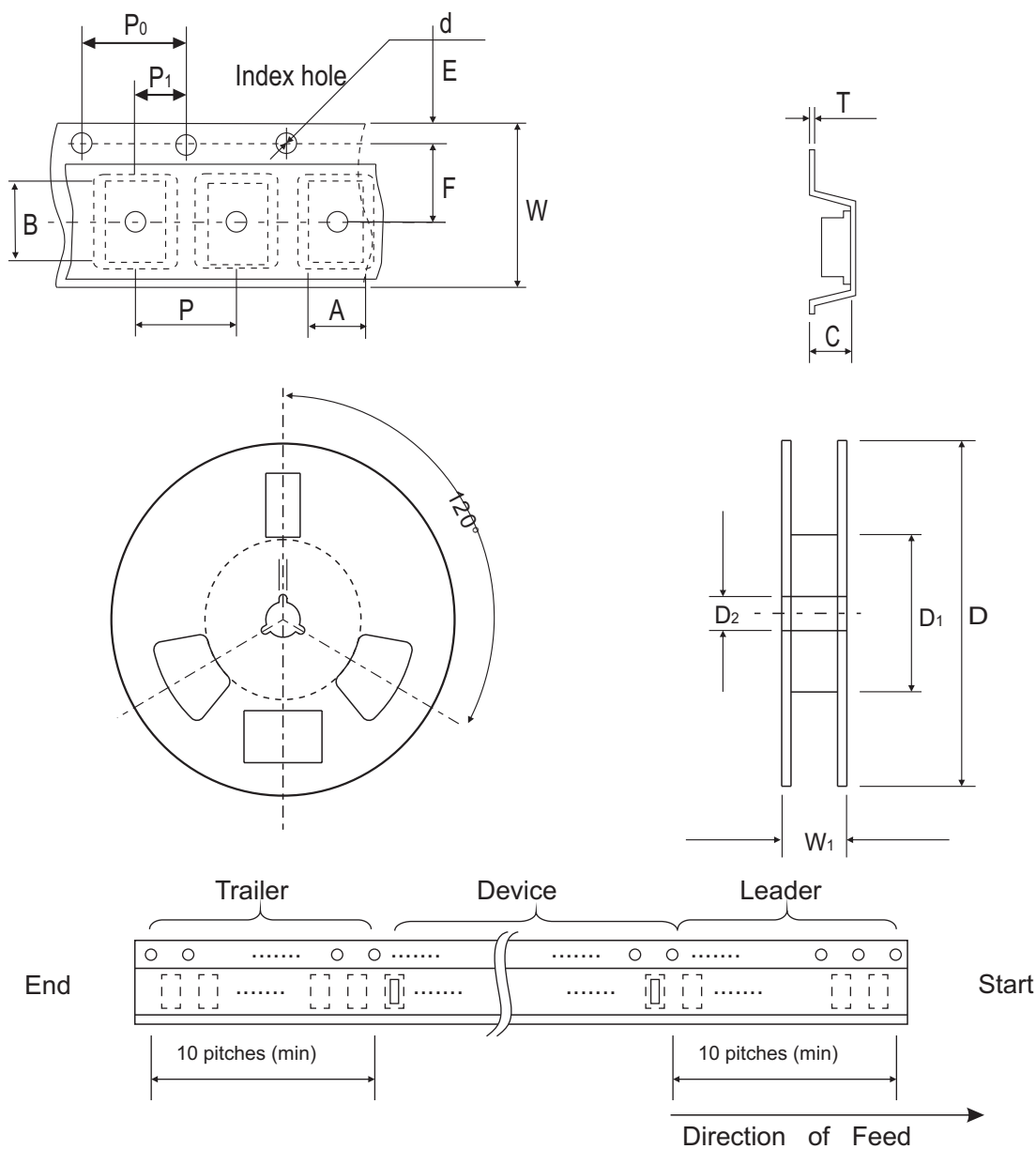


Fig. 6 - Transmission line pulsing (TLP) measurement



Reel Taping Specification

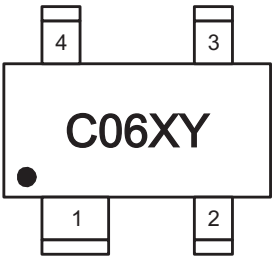


| SOT-143 | SYMBOL | A             | B             | C             | d             | D             | D1         | D2            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|------------|---------------|
|         | (mm)   | 3.19 ± 0.10   | 2.80 ± 0.10   | 1.31 ± 0.10   | 1.55 ± 0.10   | 178 ± 1       | 50.0 MIN.  | 13.0 ± 0.20   |
|         | (inch) | 0.126 ± 0.004 | 0.110 ± 0.004 | 0.052 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.040 | 1.969 MIN. | 0.512 ± 0.008 |

| SOT-143 | SYMBOL | E             | F             | P             | P0            | P1            | W             | W1        |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|-----------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 8.00 ± 0.30   | 14.4 MAX. |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.315 ± 0.012 | 0.567 MAX |

Marking Code

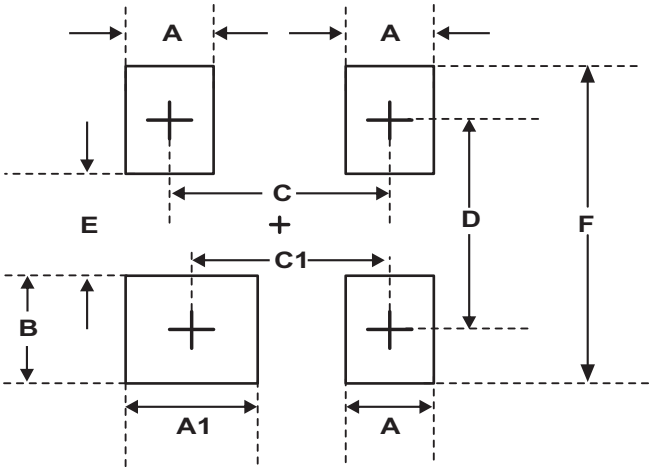
| Part Number   | Marking Code |
|---------------|--------------|
| CSRS045V0P-HF | C06XY        |



C06 = Device code  
X = Date Code  
Y = Control Code

Suggested PAD Layout

| SIZE | SOT-143 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 1.00    | 0.039  |
| A1   | 1.40    | 0.055  |
| B    | 1.40    | 0.055  |
| C    | 1.92    | 0.076  |
| C1   | 1.72    | 0.068  |
| D    | 2.20    | 0.087  |
| E    | 0.80    | 0.031  |
| F    | 3.60    | 0.142  |



Standard Packaging

| Case Type | Qty Per Reel | Reel Size |
|-----------|--------------|-----------|
|           | (Pcs)        | (inch)    |
| SOT-143   | 3,000        | 7         |