

**Product Summary**

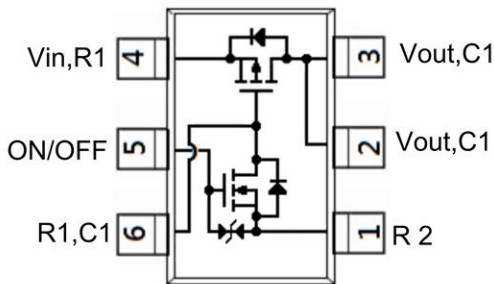
- $V_{drop} = 0.2V @ V_{in}=12V, I_L=2.0A, R_{DS(ON)}= 100m\Omega$
- $V_{drop} = 0.2V @ V_{in}=5.0V, I_L=1.8A, R_{DS(ON)}= 110m\Omega$
- $V_{drop} = 0.2V @ V_{in}=2.5V, I_L=1.4A, R_{DS(ON)}= 140m\Omega$

**Application**

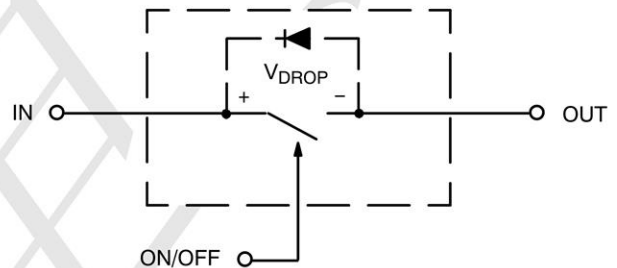
- Battery Packs
- Battery-Powered Portable Equipment
- Cellular and Cordless Telephones

**Package and Pin Configuration**

**SOT23-6**



**EQUIVALENT CIRCUIT**



**Marking: 326P**

326P= is Part Number ,Fixed

**Absolute Maximum Ratings ( $T_A=25^\circ C$  unless otherwise noted)**

| PARAMETER   | SYMBOL           | Ratings | UNITS        |
|---|------------------|---------|--------------|
| Input Voltage Range <sup>(Note 1)</sup>                   | $V_{IN}$         | 20      | V            |
| On/Off Voltage Range                                      | $V_{ON}/V_{OFF}$ | 12      | V            |
| Continuous Load Current <sup>t</sup> (Note 2,3)           | $I_D$            | 2       | A            |
| Pulsed Load Current <sup>(Note 4)</sup>                   | $I_D$            | 8       | A            |
| Power Dissipation <sup>(Note 2)</sup>                     | $P_D$            | 0.83    | W            |
| Operating Junction and Storage Temperature Range          | $T_J, T_{STG}$   | -55~150 | $^\circ C$   |
| ESD, MIL-STD-883D HBM (100pF/1.5kohm) ( $V_{on/off}$ pin) | $V_{ESD}$        | 2       | kV           |
| Typical Junction to Ambient <sup>(Note 2)</sup>           | $R_{\theta JA}$  | 150     | $^\circ C/W$ |

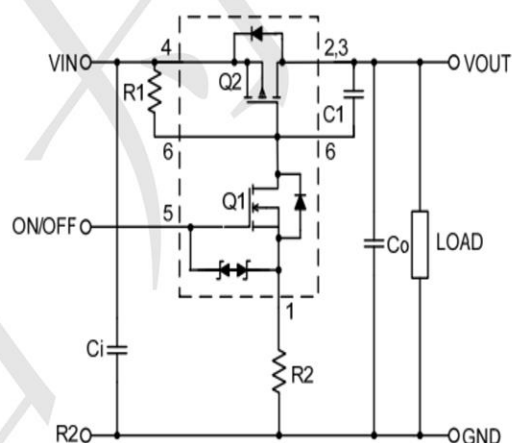
**Electrical Characteristics (  $T_A = 25^\circ\text{C}$  unless otherwise noted )**

| PARAMETER                             | SYMBOL           | TEST CONDITION                                | MIN. | TYP.  | MAX. | UNITS         |
|---------------------------------------|------------------|---|------|-------|------|---------------|
| <b>Off Characteristics</b>            |                  |   |      |       |      |               |
| Leakage Current                       | $I_{FL}$         | $V_{IN}=20\text{V}, V_{ON}/V_{OFF}=0\text{V}$ | -    | -     | 1    | $\mu\text{A}$ |
| Diode Forward Voltage                 | $V_{SD}$         | $I_S=-1.0\text{A}$                            | -    | -0.76 | -1.2 | V             |
| <b>On Characteristics</b>             |                  |   |      |       |      |               |
| Input Voltage Range                   | $V_{IN}$         |   | 2.5  | -     | 20   | V             |
| On/Off Voltage Range                  | $V_{ON}/V_{OFF}$ |   | 2.5  | -     | 12   | V             |
| Drain-Source On-State Resistance (Q2) | $R_{DS(on)}$     | $V_{GS}=-12\text{V}, I_D=-2.0\text{A}$        | -    | 84    | 100  | m $\Omega$    |
|                                       |                  | $V_{GS}=-5.0\text{V}, I_D=-1.8\text{A}$       | -    | 90    | 110  |               |
|                                       |                  | $V_{GS}=-2.5\text{V}, I_D=-1.4\text{A}$       | -    | 110   | 140  |               |

NOTES :

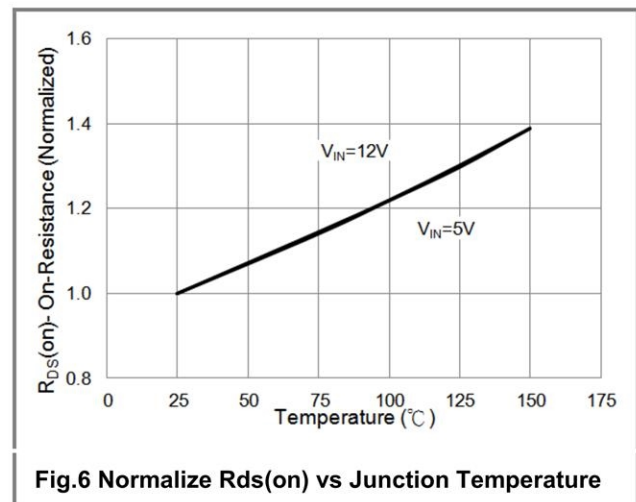
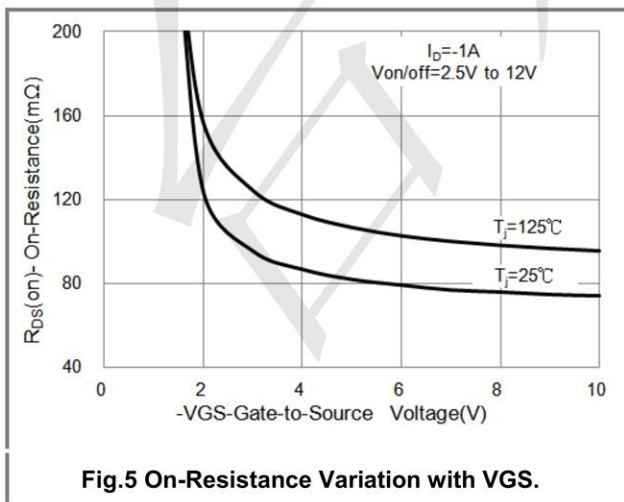
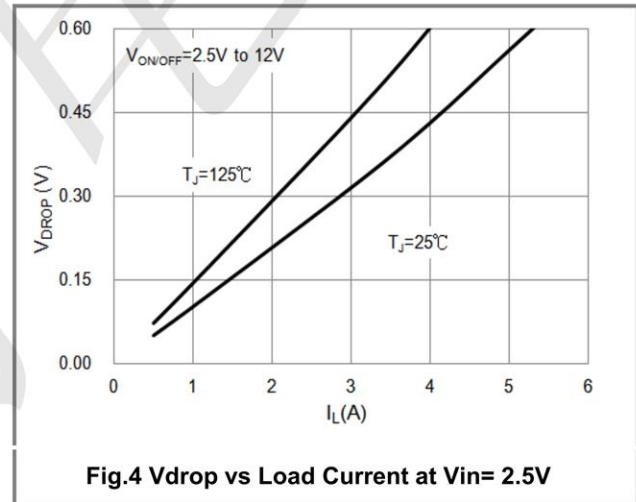
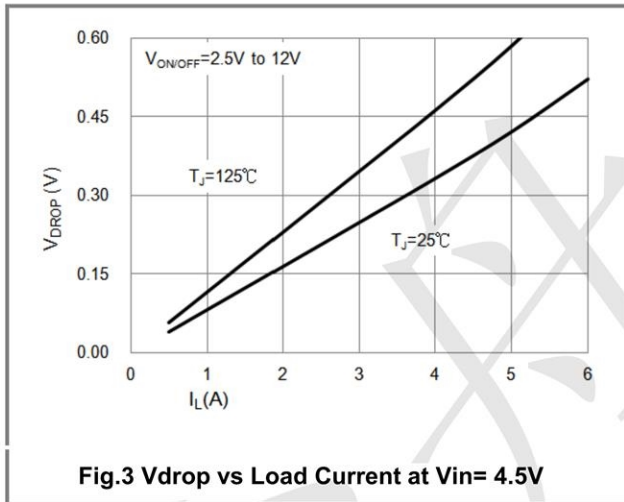
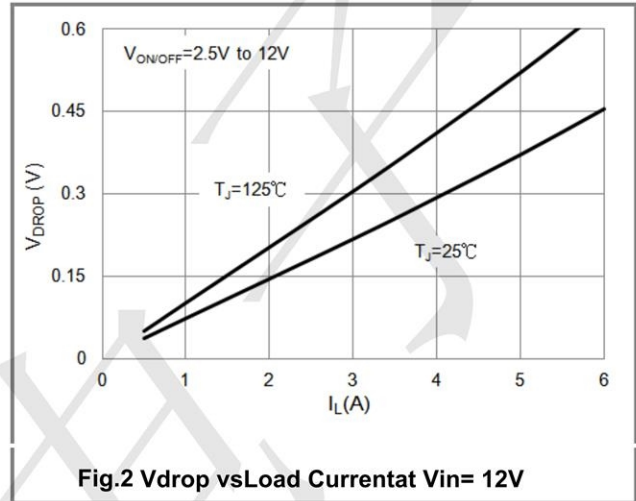
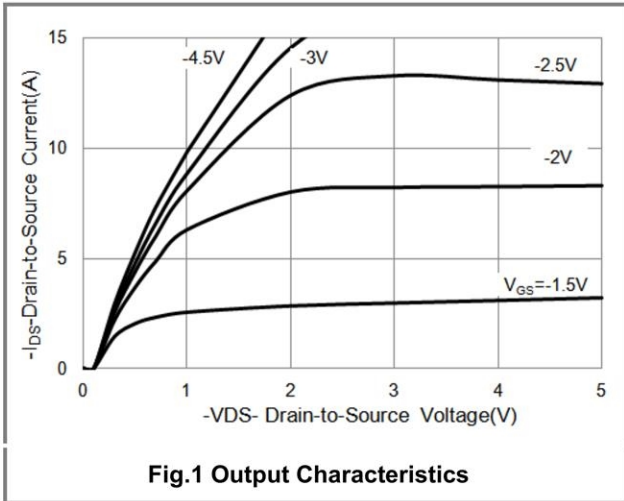
- $V_{IN}$  Range can be up to 20V, but R1 and R2 must be scaled such that  $V_{GS}$  do not exceed 12V.
- $R_{\theta JA}$  is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper
- The maximum current rating is package limited
- Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$

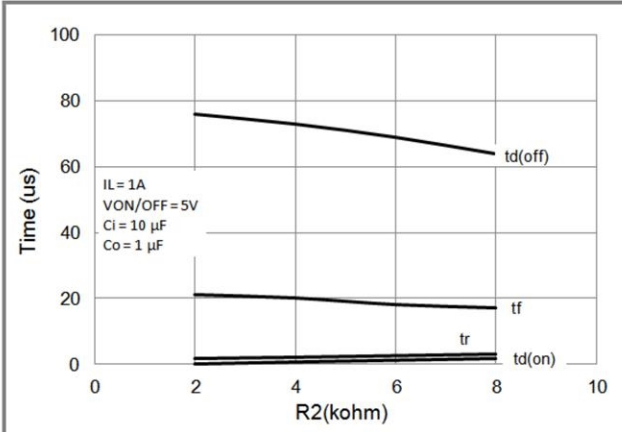
**Typical Application Circuit**



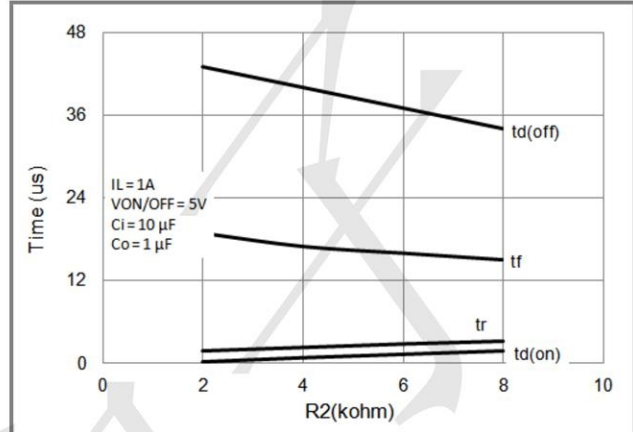
| COMPONENTS |                            |                                       |
|------------|----------------------------|---------------------------------------|
| R1         | Pull-Up Resistor           | Typical 10k $\Omega$ to 1M $\Omega$ * |
| R2         | Optional Slew-Rate Control | Typical 0 to 100k $\Omega$            |
| C1         | Optional Slew-Rate Control | Typical 1000pF                        |

## Typical Operating Characteristics

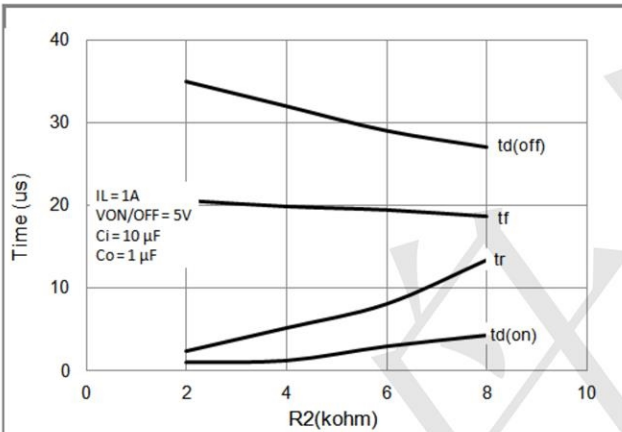




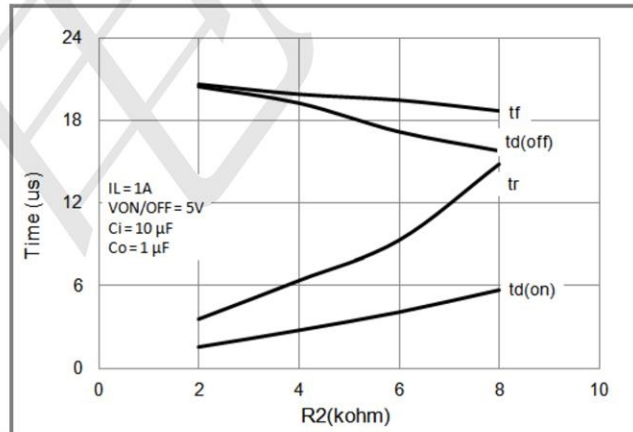
**Fig.7 Switching Variation R2 at Vin=12V, R1=20k $\Omega$**



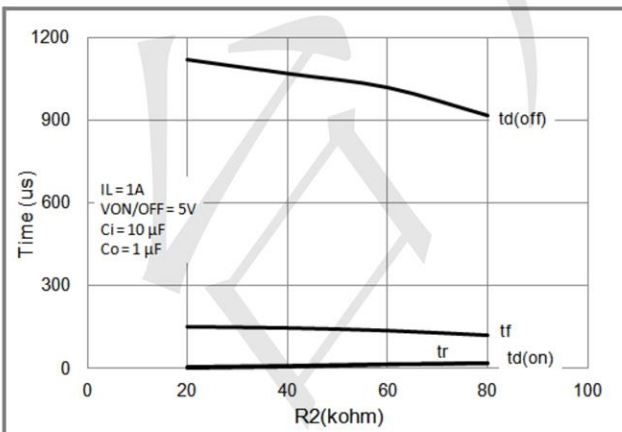
**Fig.8 Switching Variation R2 at Vin= 5V, R1= 20k $\Omega$**



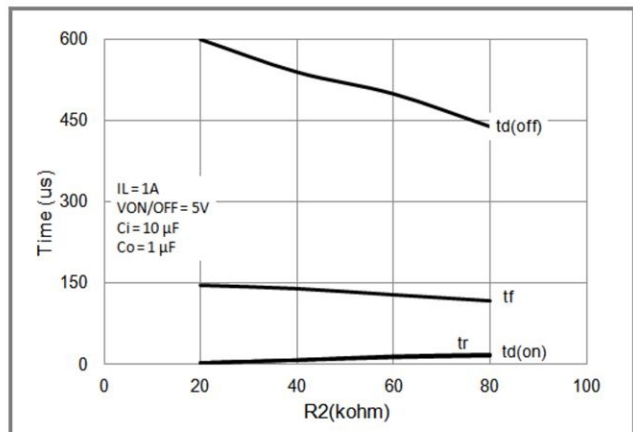
**Fig.9 Switching Variation R2 at Vin=3.3V, R1=20k $\Omega$**



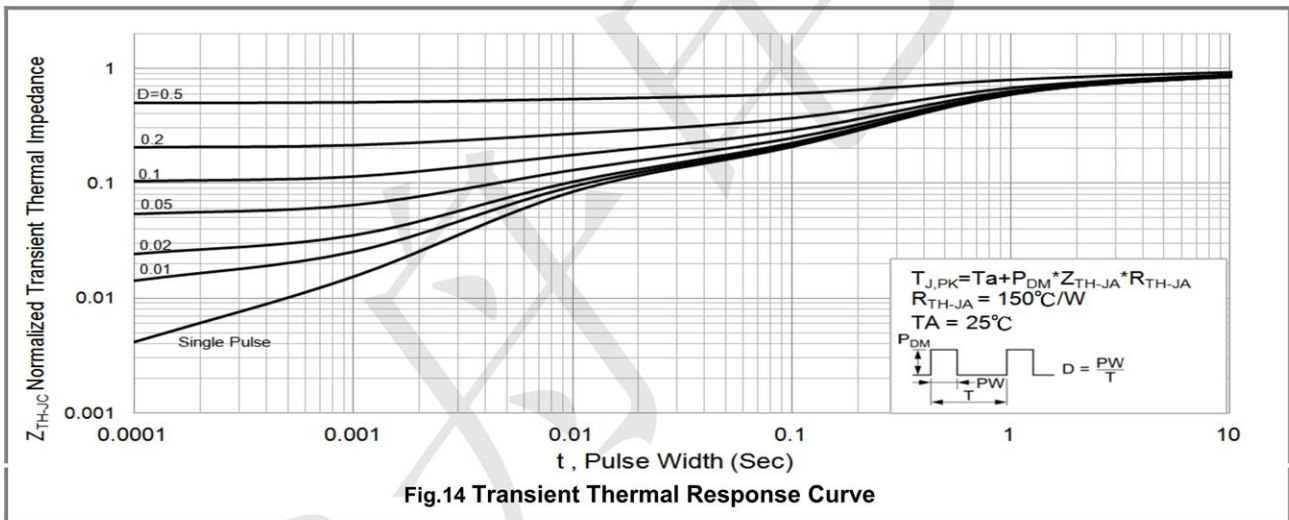
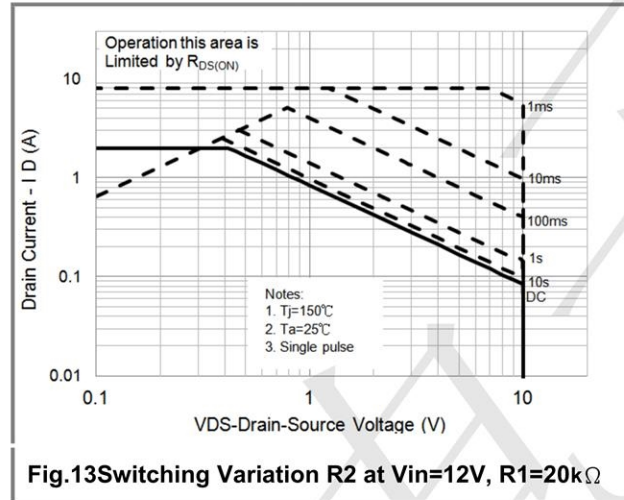
**Fig.10 Switching Variation R2 at Vin=2.5V, R1=20k $\Omega$**



**Fig.11 Switching Variation R2 at Vin=12V, R1=300k**

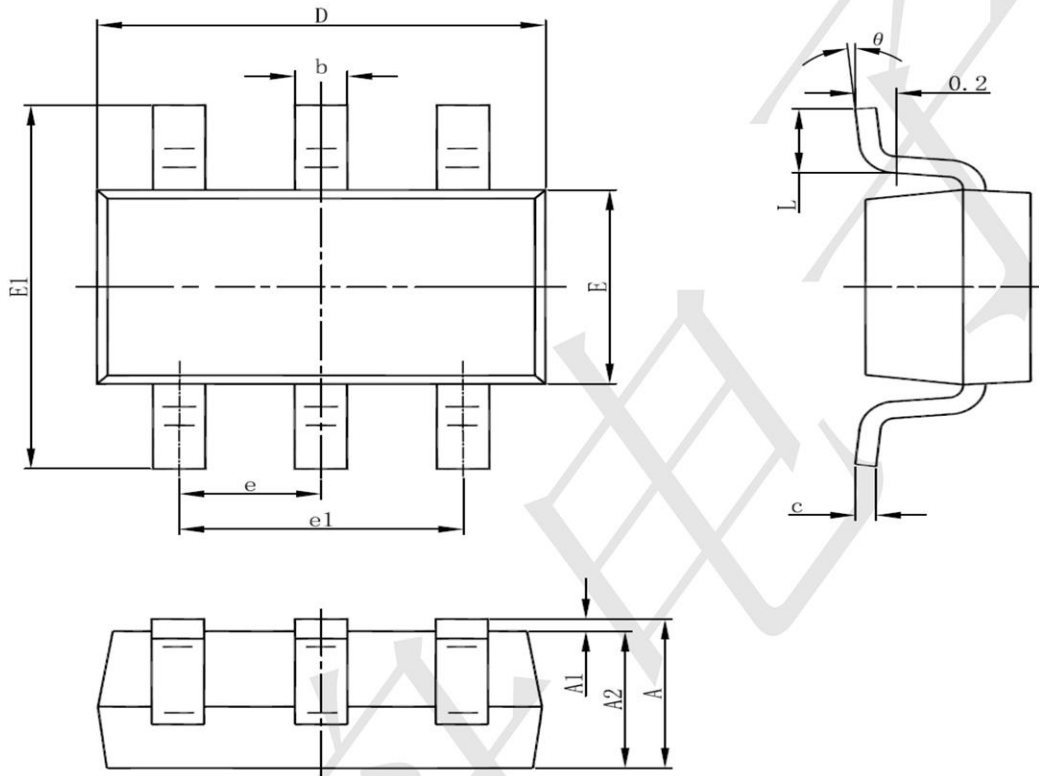


**Fig.12 Switching Variation R2 at Vin=5V, R1=300k**





**SOT23-6 Package Information**



| Symbol   | Dimensions In Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min                       | Max   | Min                  | Max   |
| A        | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 1.050                     | 1.150 | 0.041                | 0.045 |
| b        | 0.300                     | 0.500 | 0.012                | 0.020 |
| c        | 0.100                     | 0.200 | 0.004                | 0.008 |
| D        | 2.820                     | 3.020 | 0.111                | 0.119 |
| E        | 1.500                     | 1.700 | 0.059                | 0.067 |
| E1       | 2.650                     | 2.950 | 0.104                | 0.116 |
| e        | 0.950(BSC)                |       | 0.037(BSC)           |       |
| e1       | 1.800                     | 2.000 | 0.071                | 0.079 |
| L        | 0.300                     | 0.600 | 0.012                | 0.024 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |