

## General Description

These Power MOSFETs are produced using Cmos's proprietary, planar stripe, DMOS technology. These devices are well suited for high efficiency switching DC/DC converters.

## Features

- P-Channel MOSFET
- Improved dv/dt capability
- 100% avalanche tested
- RoHS Compliant

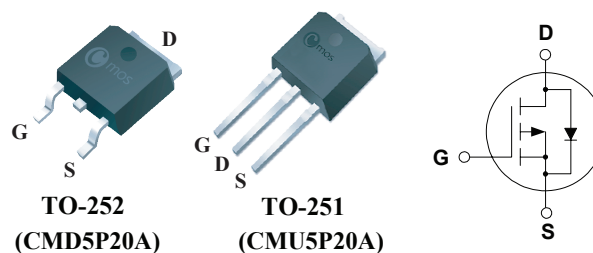
## Product Summary

| BVDSS | R <sub>DS(on)</sub> max. | ID  |
|-------|--------------------------|-----|
| -200V | 1.7Ω                     | -5A |

## Applications

- DC-DC converters
- Motor control

## TO-252/251 Pin Configuration



## Absolute Maximum Ratings (T<sub>A</sub>=25 °C Unless Otherwise Noted)

| Symbol                                | Parameter                                  | Rating     | Units |
|---------------------------------------|--------------------------------------------|------------|-------|
| V <sub>DS</sub>                       | Drain-Source Voltage                       | -200       | V     |
| V <sub>GS</sub>                       | Gate-Source Voltage                        | ±20        | V     |
| I <sub>D</sub> @T <sub>C</sub> =25°C  | Continuous Drain Current                   | -5         | A     |
| I <sub>D</sub> @T <sub>C</sub> =100°C | Continuous Drain Current                   | -3.2       | A     |
| I <sub>DM</sub>                       | Pulsed Drain Current                       | -20        | A     |
| EAS                                   | Single Pulse Avalanche Energy <sup>1</sup> | 205        | mJ    |
| P <sub>D</sub> @T <sub>C</sub> =25°C  | Total Power Dissipation                    | 35         | W     |
| T <sub>STG</sub>                      | Storage Temperature Range                  | -55 to 150 | °C    |
| T <sub>J</sub>                        | Operating Junction Temperature Range       | 150        | °C    |

## Thermal Data

| Symbol           | Parameter                           | Typ. | Max. | Unit |
|------------------|-------------------------------------|------|------|------|
| R <sub>θJA</sub> | Thermal Resistance Junction-ambient | ---  | 110  | °C/W |
| R <sub>θJC</sub> | Thermal Resistance Junction-case    | ---  | 3.57 | °C/W |

### Electrical Characteristics (T<sub>J</sub>=25°C , unless otherwise noted)

| Symbol              | Parameter                         | Conditions                                                                                                                     | Min. | Typ. | Max. | Unit |
|---------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage    | V <sub>GS</sub> =0V , I <sub>D</sub> =-250μA                                                                                   | -200 | ---  | ---  | V    |
| R <sub>DS(ON)</sub> | Static Drain-Source On-Resistance | V <sub>GS</sub> =-10V , I <sub>D</sub> =-2.5A                                                                                  | ---  | 1.4  | 1.7  | Ω    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage            | V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> = -250μA                                                                     | -2.0 | ---  | -4.0 | V    |
| I <sub>DSS</sub>    | Drain-Source Leakage Current      | V <sub>DS</sub> =-200V , V <sub>GS</sub> =0V                                                                                   | ---  | ---  | -1   | μA   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current       | V <sub>GS</sub> =±20V , V <sub>DS</sub> =0V                                                                                    | ---  | ---  | ±100 | nA   |
| g <sub>fs</sub>     | Forward Transconductance          | V <sub>DS</sub> =-10V , I <sub>D</sub> =-2.5A                                                                                  | ---  | 2.7  | ---  | S    |
| R <sub>g</sub>      | Gate Resistance                   | V <sub>DS</sub> =0V , V <sub>GS</sub> =0V , f=1MHz                                                                             | ---  | 2.7  | ---  | Ω    |
| Q <sub>g</sub>      | Total Gate Charge                 | V <sub>DS</sub> =-100V , I <sub>D</sub> =-1A<br>V <sub>GS</sub> =-10V<br>(Note 2)                                              | ---  | 11   | ---  | nC   |
| Q <sub>gs</sub>     | Gate-Source Charge                |                                                                                                                                | ---  | 2.5  | ---  |      |
| Q <sub>gd</sub>     | Gate-Drain Charge                 |                                                                                                                                | ---  | 5    | ---  |      |
| T <sub>d(on)</sub>  | Turn-On Delay Time                | V <sub>DD</sub> =-100V , V <sub>GS</sub> =-10V<br>I <sub>D</sub> = -1A , R <sub>G</sub> =1Ω , R <sub>L</sub> =100Ω<br>(Note 2) | ---  | 10   | ---  | ns   |
| T <sub>r</sub>      | Rise Time                         |                                                                                                                                | ---  | 12   | ---  |      |
| T <sub>d(off)</sub> | Turn-Off Delay Time               |                                                                                                                                | ---  | 30   | ---  |      |
| T <sub>f</sub>      | Fall Time                         |                                                                                                                                | ---  | 15   | ---  |      |
| C <sub>iss</sub>    | Input Capacitance                 | V <sub>DS</sub> =-25V , V <sub>GS</sub> =0V , f=1MHz                                                                           | ---  | 250  | ---  | pF   |
| C <sub>oss</sub>    | Output Capacitance                |                                                                                                                                | ---  | 60   | ---  |      |
| C <sub>rss</sub>    | Reverse Transfer Capacitance      |                                                                                                                                | ---  | 35   | ---  |      |

### Diode Characteristics

| Symbol          | Parameter                 | Conditions                                                       | Min. | Typ.  | Max. | Unit |
|-----------------|---------------------------|------------------------------------------------------------------|------|-------|------|------|
| I <sub>S</sub>  | Continuous Source Current | V <sub>G</sub> =V <sub>D</sub> =0V , Force Current               | ---  | ---   | -5   | A    |
| I <sub>SM</sub> | Pulsed Source Current     |                                                                  | ---  | ---   | -20  | A    |
| V <sub>SD</sub> | Diode Forward Voltage     | V <sub>GS</sub> =0V , I <sub>S</sub> =-5A , T <sub>J</sub> =25°C | ---  | -1.16 | -2.0 | V    |

Note :

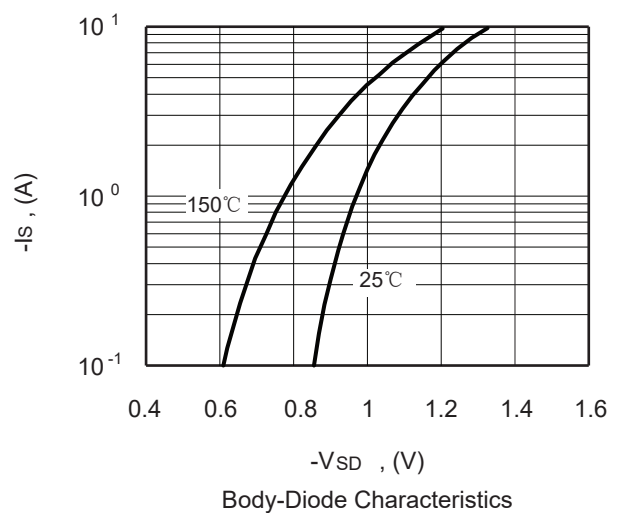
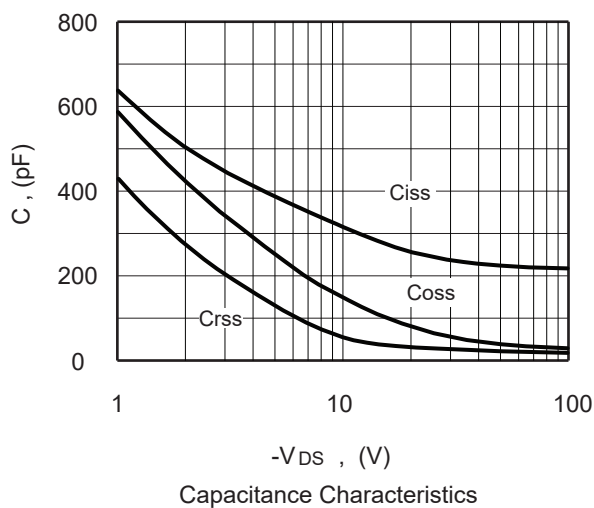
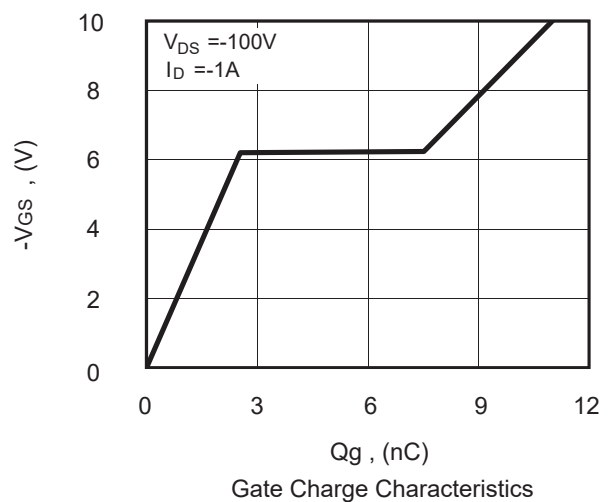
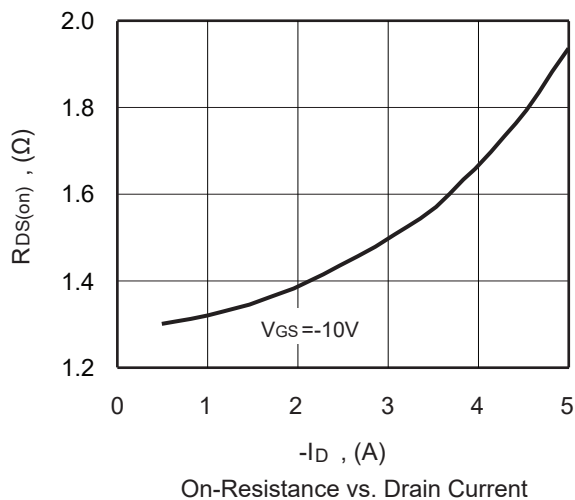
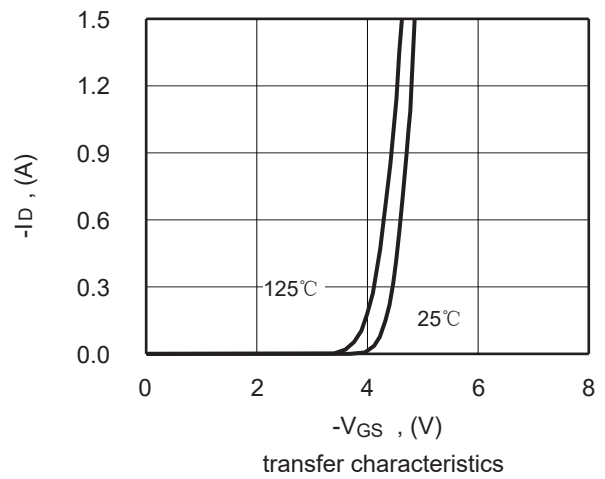
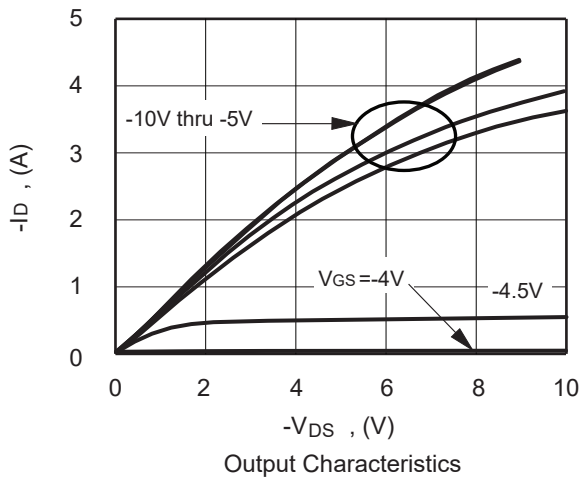
- 1.The EAS data shows Max. rating . The test condition is V<sub>DD</sub>=-80V , V<sub>GS</sub>=-10V , L=30mH , I<sub>AS</sub>=-3.7A.
2. Defined by design, not subject to production.

This product has been designed and qualified for the counsumer market.

Cmos assumes no liability for customers' product design or applications.

Cmos reserver the right to improve product design ,functions and reliability withtout notice.Please refer to the latest version of specification.

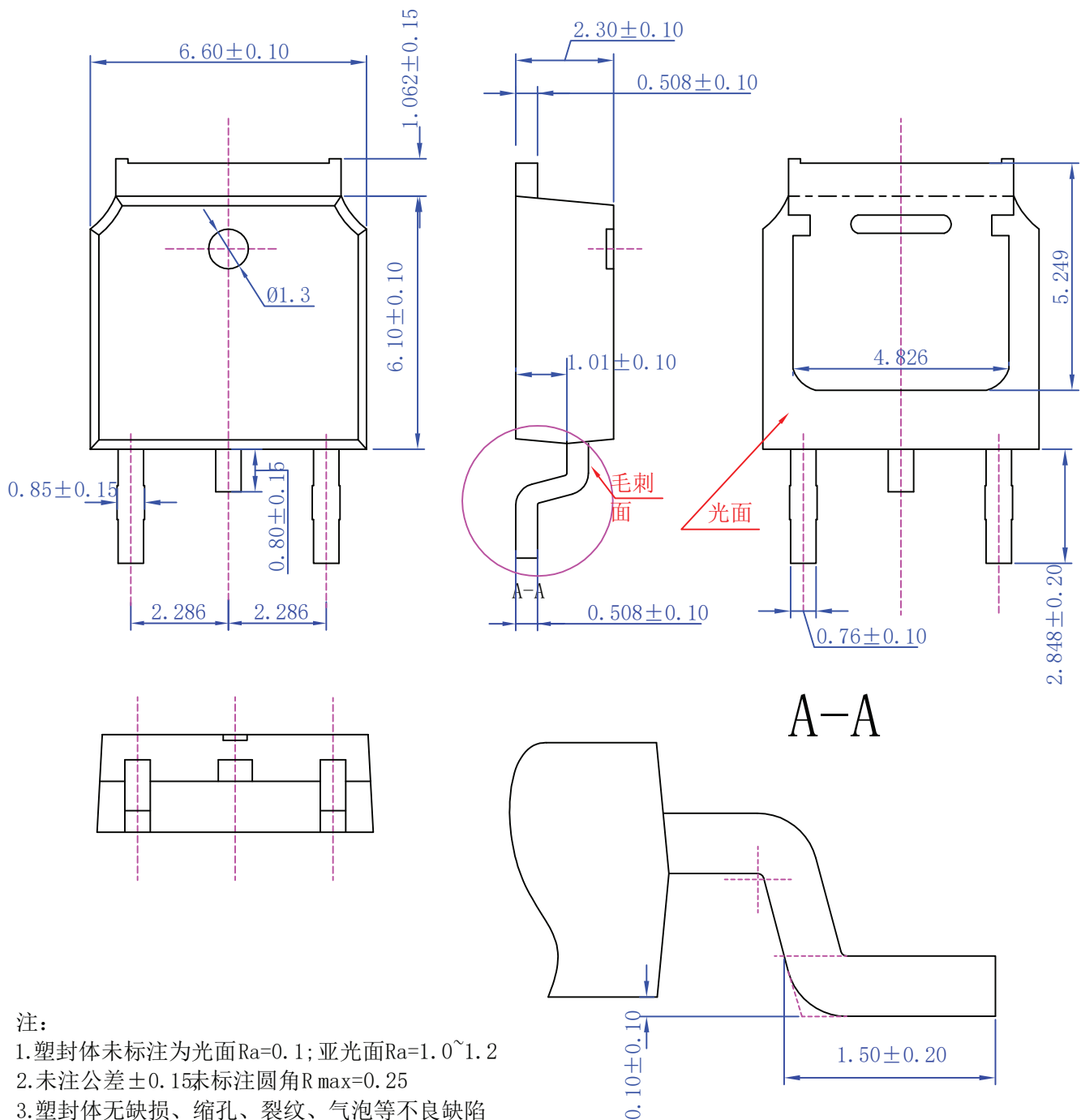
## Typical Characteristics



## Package Dimension

TO-252

Unit :mm



注:

1. 塑封体未标注为光面 $R_a=0.1$ ; 亚光面 $R_a=1.0 \sim 1.2$
2. 未注公差 $\pm 0.15$ 未标注圆角 $R_{max}=0.25$
3. 塑封体无缺损、缩孔、裂纹、气泡等不良缺陷
4. 标注单位mm
5. 顶针孔不允许凸出塑封体表面

## Package Dimension

TO-251A

Unit :mm

