

5 é / Descriptions

SOT-23 .> / / x 6 3 MOS « | • ' ož  
P- CHANNEL MOSFET in a SOT-23 Plastic Package.

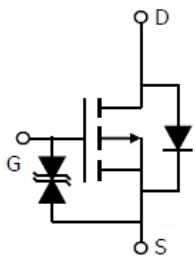
□ ª / Features

$V_{DS}=-20V$   $I_D=-4.0A$   
 $R_{DS(on)}@-4.5V$  0 42m , (Typ. 32m )  
 $R_{DS(on)}@-2.5V$  0 55m , (Typ. 43m )  
ESD Protected  
—)í D }ož HF Product.

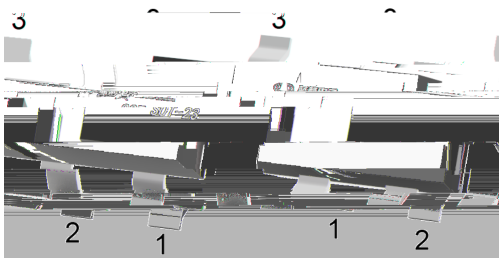
Đ ÷ / Applications

č ú • ¼ k P ' ož  
Load switch k Battery protection.

Ã W ] Ô · / Equivalent Circuit



• Ů - æ / Pinning



PIN1 y G                      PIN 2 y S                      PIN 3 y D

, M V / Marking

|         |        |
|---------|--------|
| Marking | .3415E |
|---------|--------|

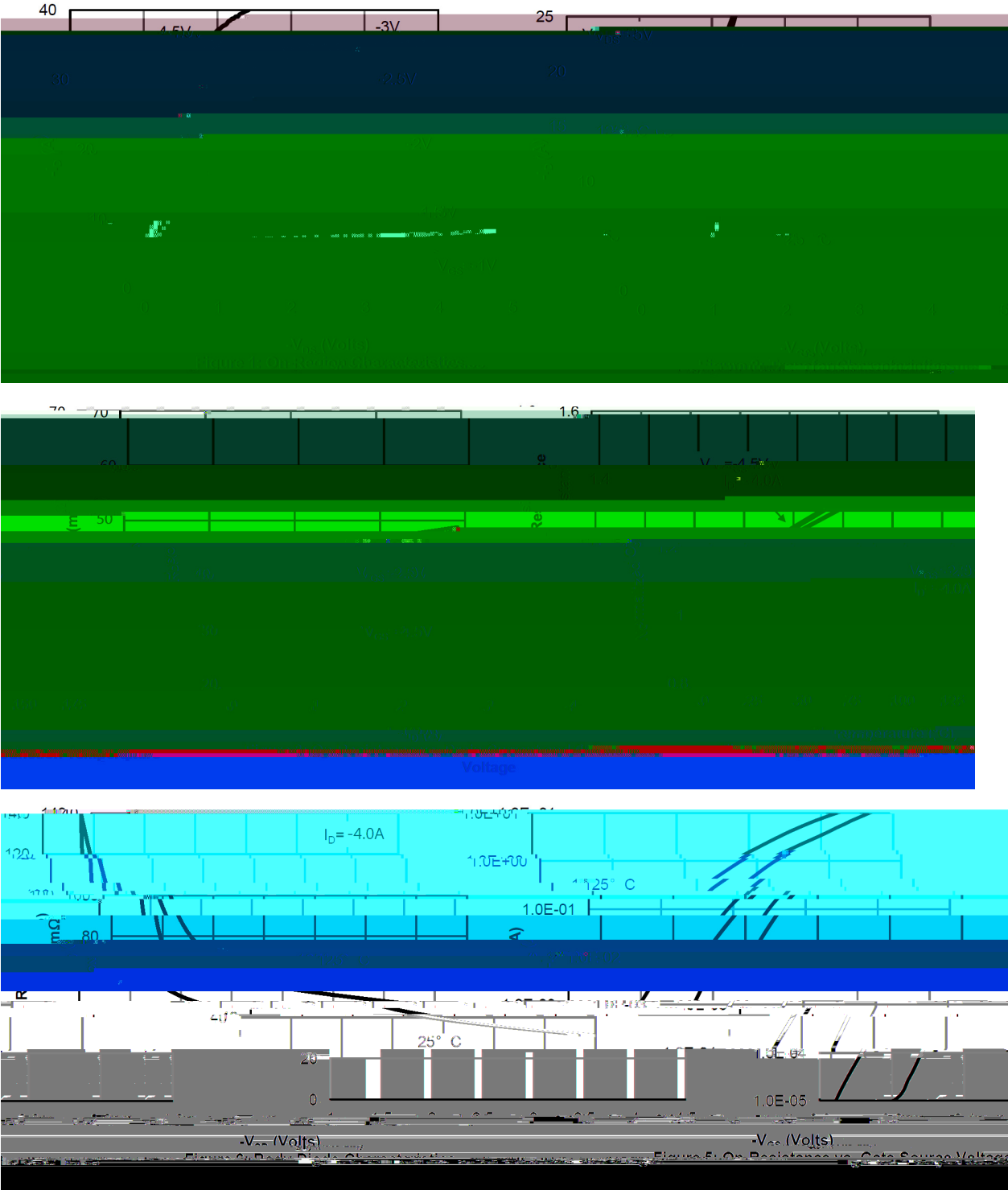
### 1. Absolute Maximum Ratings(Ta=25℃ ; )

| Parameter                                                          | Symbol                            | Rating      | Unit |
|--------------------------------------------------------------------|-----------------------------------|-------------|------|
| Drain-Source Voltage                                               | V <sub>DS</sub>                   | -20         | V    |
| Gate-Source Voltage                                                | V <sub>GS</sub>                   | ±10         | V    |
| Drain Current-Continuous                                           | I <sub>D</sub>                    | -4.0        | A    |
| Drain Current-Continuous(T <sub>A</sub> =70℃)                      | I <sub>D</sub>                    | -3.5        | A    |
| Drain Current-Pulsed                                               | I <sub>DM</sub>                   | -20         | A    |
| Maximum Power Dissipation                                          | P <sub>D</sub>                    | 1.2         | W    |
| Maximum Power Dissipation(T <sub>A</sub> =70℃)                     | P <sub>D</sub>                    | 0.9         | W    |
| Operating Junction Temperature Range and Storage Temperature Range | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |      |
| Thermal Resistance, Junction-to-Ambient                            | R <sub>JA</sub>                   | 105         | °C/W |

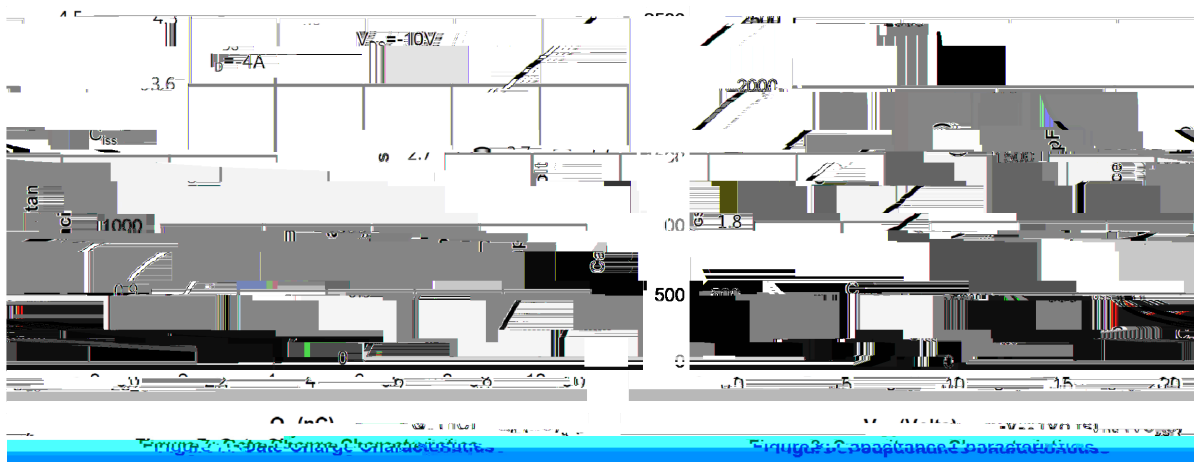
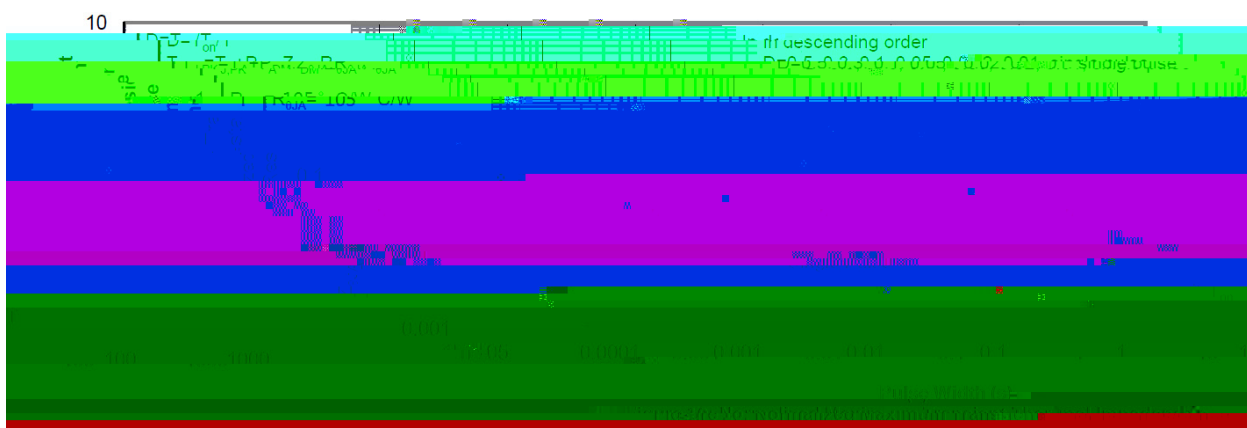
### 2. Electrical Characteristics(Ta=25℃ ; )

| Parameter                          | Symbol              | Test Conditions                                                                           | Min   | Typ  | Max  | Unit |
|------------------------------------|---------------------|-------------------------------------------------------------------------------------------|-------|------|------|------|
| Drain-Source Breakdown Voltage     | B <sub>VDS</sub>    | V <sub>GS</sub> =0V I <sub>D</sub> =-250 A                                                | -20   |      |      | V    |
| Zero Gate Voltage Drain Current    | I <sub>DSS</sub>    | V <sub>DS</sub> =-20V V <sub>GS</sub> =0V                                                 |       |      | -1   | μA   |
| Gate-Body Leakage                  | I <sub>GSS</sub>    | V <sub>GS</sub> =±10V V <sub>DS</sub> =0V                                                 |       |      | ±25  | μA   |
| Gate Threshold Voltage             | V <sub>TH</sub>     | V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 A                                   | -0.45 |      | -0.9 | V    |
| Drain-Source On-State Resistance   | R <sub>DS(ON)</sub> | V <sub>GS</sub> =-4.5V I <sub>D</sub> =-4.0A                                              |       | 32   | 42   | mΩ   |
|                                    |                     | V <sub>GS</sub> =-2.5V I <sub>D</sub> =-4.0A                                              |       | 43   | 55   |      |
| Input Capacitance                  | C <sub>iss</sub>    | V <sub>DS</sub> =-10V V <sub>GS</sub> =0V<br>f=1MHz                                       |       | 1420 |      | pF   |
| Output Capacitance                 | C <sub>oss</sub>    |                                                                                           |       | 210  |      |      |
| Reverse Transfer Capacitance       | C <sub>rss</sub>    |                                                                                           |       | 190  |      |      |
| Turn-On Delay Time                 | t <sub>d(on)</sub>  | V <sub>DS</sub> =-10V V <sub>GS</sub> =-4.5V<br>R <sub>GEN</sub> =3Ω R <sub>L</sub> =2.5Ω |       | 9.5  |      | ns   |
| Rise Time                          | t <sub>r</sub>      |                                                                                           |       | 17   |      |      |
| Turn-Off Delay Time                | t <sub>d(off)</sub> |                                                                                           |       | 94   |      |      |
| Fall Time                          | t <sub>f</sub>      |                                                                                           |       | 35   |      |      |
| Total Gate Charge                  | Q <sub>g</sub>      | V <sub>DS</sub> =-10V I <sub>DS</sub> =-4A<br>V <sub>GS</sub> =-4.5V                      |       | 17.2 |      | nC   |
| Gate-Source Charge                 | Q <sub>gs</sub>     |                                                                                           |       | 1.3  |      |      |
| Gate-Drain Charge                  | Q <sub>gd</sub>     |                                                                                           |       | 4.5  |      |      |
| Drain-Source Diode Forward Voltage | V <sub>SD</sub>     | V <sub>GS</sub> =0V I <sub>DS</sub> =-2.2A                                                |       |      | -1.0 | V    |
| Reverse Recovery Time              | t <sub>rr</sub>     | I <sub>F</sub> =-4A, dI/dt=100A/ s                                                        |       | 31   |      | ns   |
| Reverse Recovery Charge            | Q <sub>rr</sub>     | I <sub>F</sub> =-4A, dI/dt=100A/ s                                                        |       | 13.8 |      | nC   |

Ω ? d • Ž ¢ / Electrical Characteristic Curve



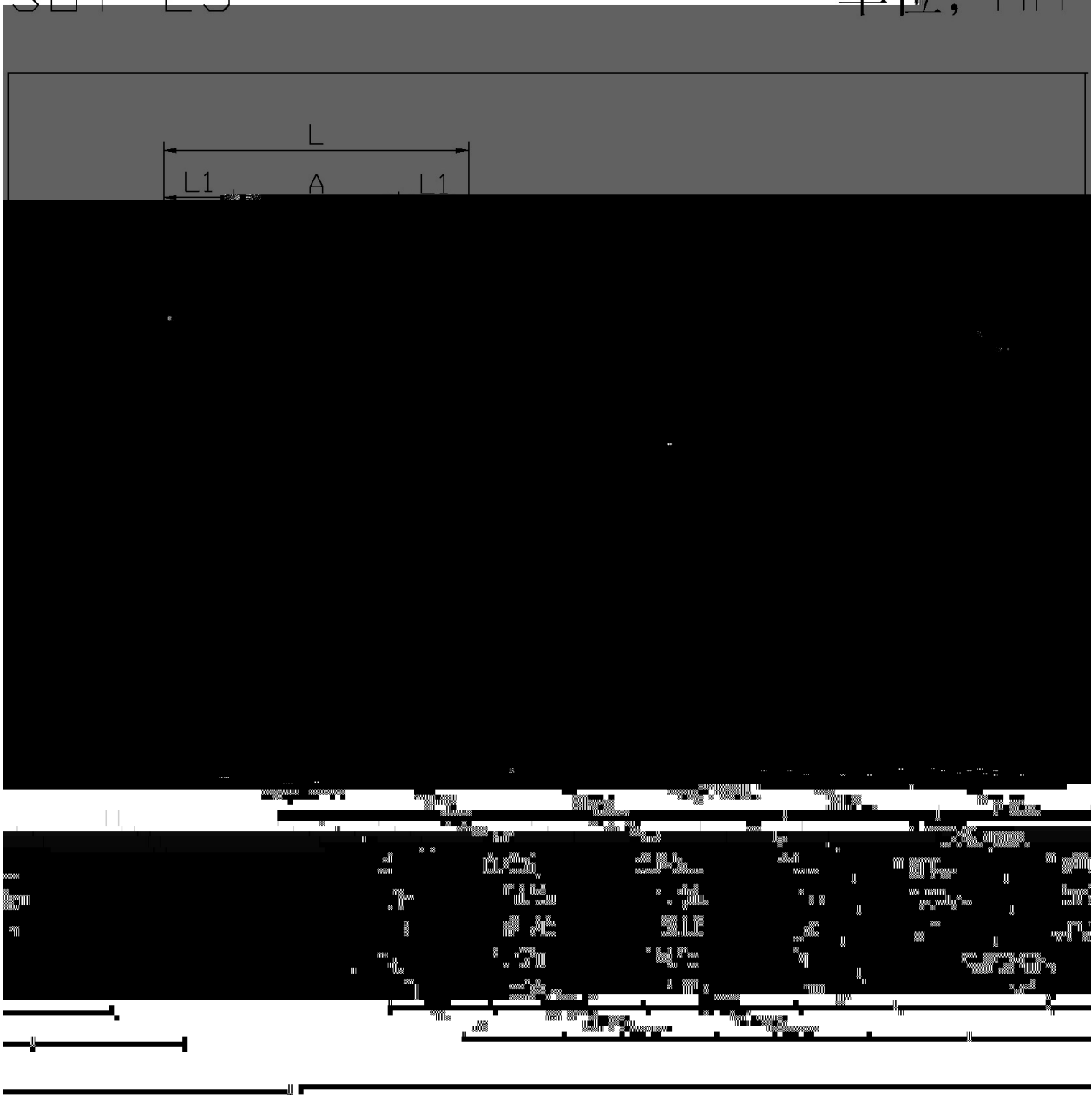
Electrical Characteristic Curve



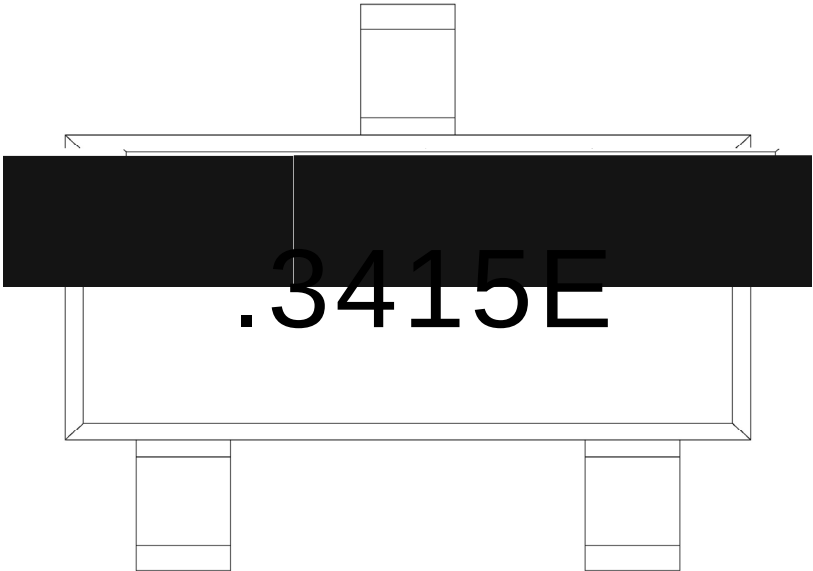
Ø □ = ) ☎ / Package Dimensions

SOT-23

单位: mm



, M y f / Marking Instructions



<sup>a</sup> ¢ y  
.3415E y      ° Z W A

Note:  
.3415E:      Product Type Code

ŠWD t... • Žč (x/ ) / :KSVKXGZ[XK 6XULORK LUX /8 8KLRU] 9URJKXOTM 6

|  |
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a ç y

10• Ä ½ “† 150 ½180 - k ž • 60 ½90sec;

20• Q > “† 245 r5 - k ž • 4 Ò 5 r0.5sec;

30•D N ò i Ò 0 ,† 2 ½10 - /sec.

Note:

1.Preheating:150~180 - , Time:60~90sec.

2.Peak Temp.:245 r5 - , Duration:5 r0.5sec.

3. Cooling Speed: 2~10 - /sec.

ÄD /Cã p ¯ »] / Resistance to Soldering Heat Test Conditions

“† y 260 r5 -

ž • y 10 r1 sec.

Temp.:260±5

Time:10±1 sec

G P á / Packaging SPEC.

2 & x / REEL

| Package Type<br>7>û ~ E | Units ;>û H      |                          |                       |                                |                        | Dimension ;>û p . (unit /Æmm³) |             |             |
|-------------------------|------------------|--------------------------|-----------------------|--------------------------------|------------------------|--------------------------------|-------------|-------------|
|                         | Units/Reel<br>/- | Reels/Inner Box<br>-- /- | Units/Inner Box<br>/- | Inner Boxes/Outer Box<br>- /1ç | Units/Outer Box<br>/1ç | Reel                           | Inner Box   | Outer Boxç  |
| SOT-23                  | 3,000            | 10                       | 30,000                | 6                              | 180,000                | 7 T×8                          | 180×120×180 | 390×385×205 |

„Đ y f / Notices

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