

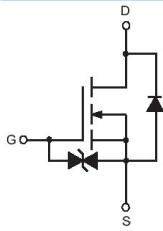
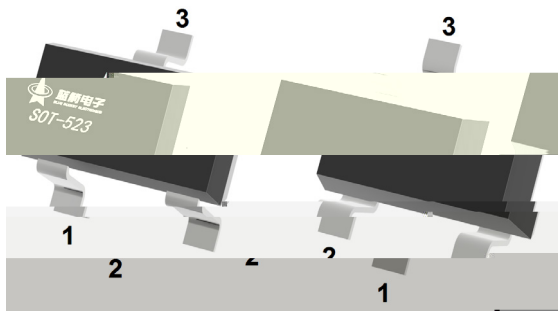
**/ Descriptions**

SOT-523          N          MOS

N-CHANNEL MOSFET in a SOT-523 Plastic Package.

**/ Features****/ Applications**

Load Switching, Low Current Inverters, Low Current DC/DC Converters.

**/ Equivalent Circuit****/ Pinning**

PIN1   G

PIN 2   S

PIN 3   D

**/ Marking**

See Marking Instructions.

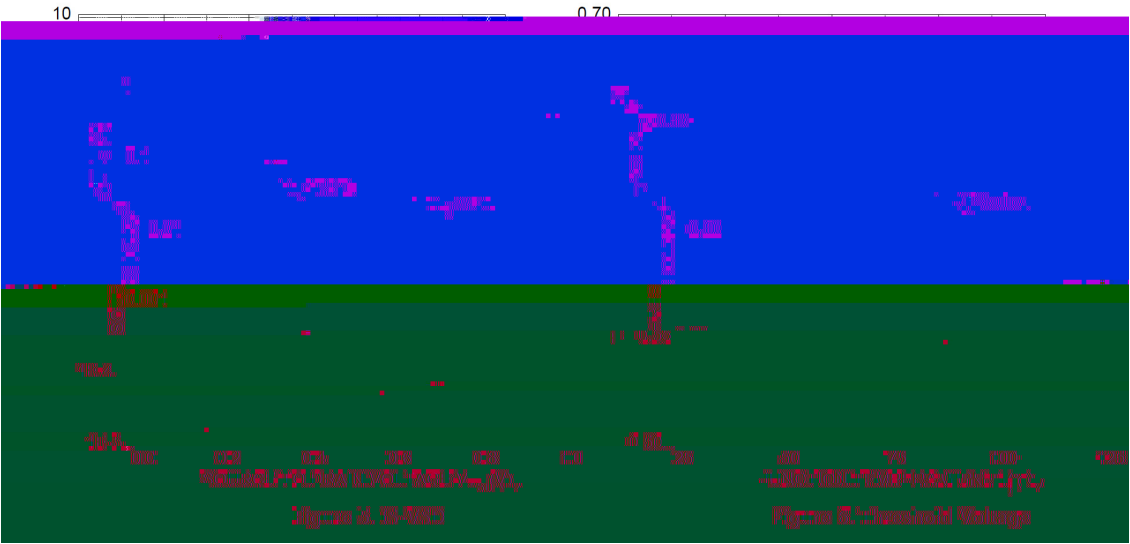
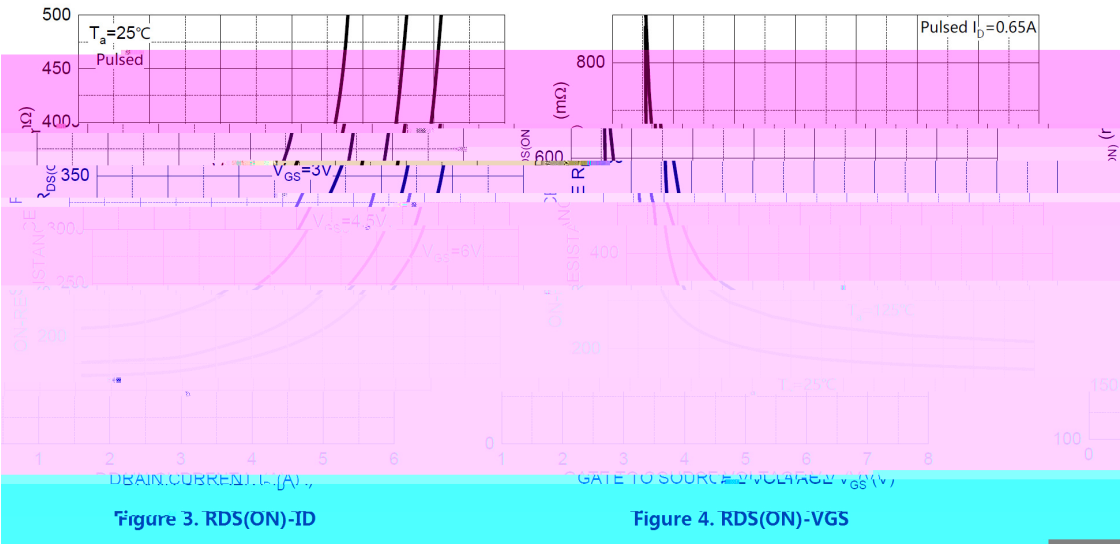
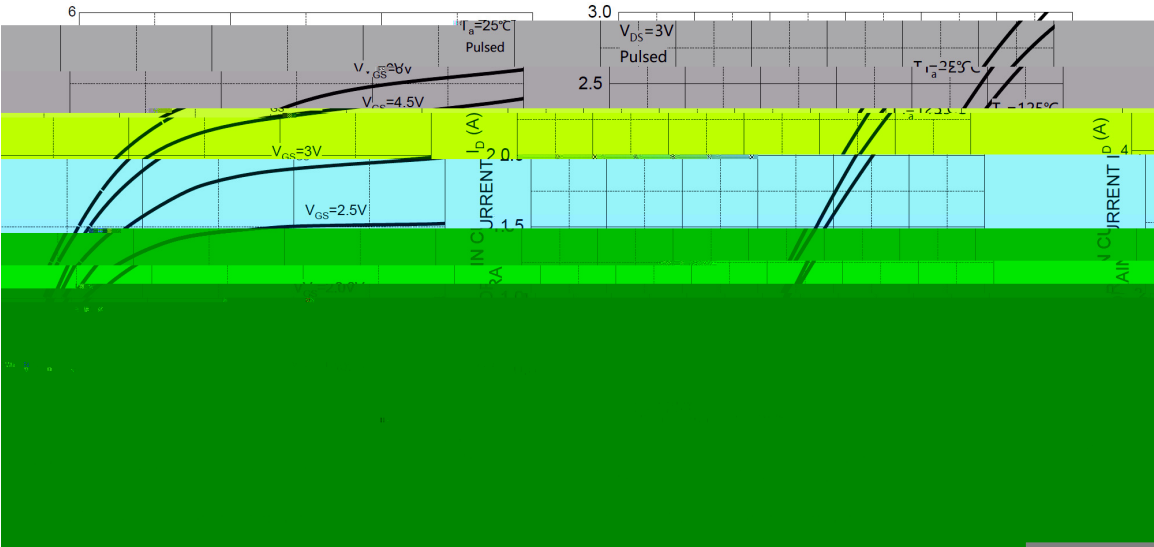
## / Absolute Maximum Ratings(Ta=25 )

| Parameter                                   | Symbol    | Rating  | Unit |
|---------------------------------------------|-----------|---------|------|
| Drain-Source Voltage                        | $V_{DS}$  | 20      | V    |
| Gate-Source Voltage                         | $V_{GS}$  | 12      | V    |
| Drain Current                               | $I_D$     | 0.75    | A    |
| Drain Current – Pulsed                      | $I_{DM}$  | 3.0     | A    |
| Power Dissipation                           | $P_D$     | 0.15    |      |
| Junction Temperature Range                  |           | 150     |      |
| Storage Temperature Range                   | $T_{stg}$ | -55 150 |      |
| Thermal Resistance from Junction to Ambient |           | 833     |      |

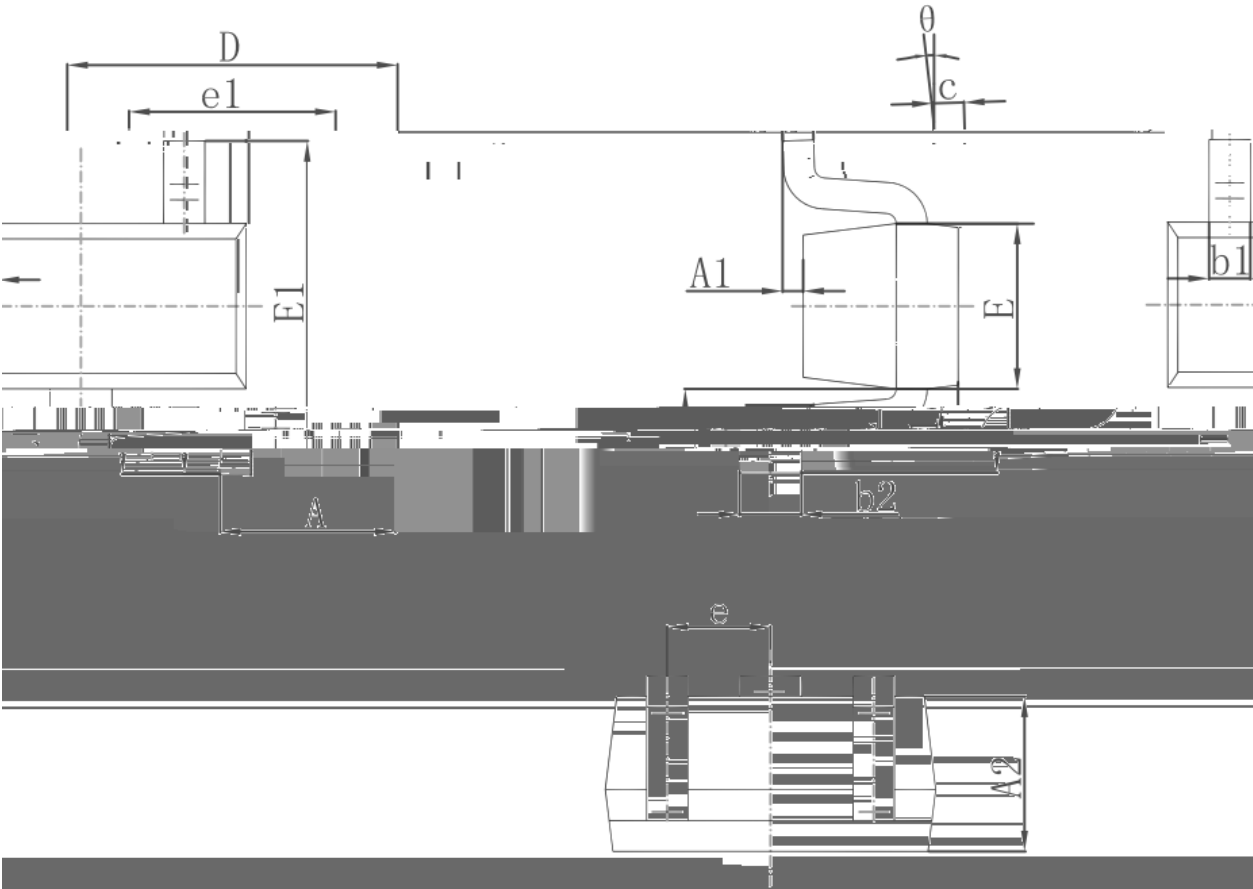
## / Electrical Characteristics(Ta=25 )

| Parameter                          | Symbol          | Test Conditions                                             | Min | Typ  | Max      | Unit       |
|------------------------------------|-----------------|-------------------------------------------------------------|-----|------|----------|------------|
| Drain–Source Breakdown Voltage     | $V_{DSS}$       | $V_{GS}=0$ $I_D=250\mu A$                                   | 20  |      |          | V          |
| Zero Gate Voltage Drain Current    | $I_{DSS}$       | $V_{GS}=0$ $V_{DS}=20V$                                     |     |      | 1        | $\mu A$    |
| Gate–Body Leakage                  | $I_{GSS}$       | $V_{DS}=0V$ $V_{GS}=\pm 10V$                                |     |      | $\pm 10$ | $\mu A$    |
| Gate Threshold Voltage             | $V_{GS(th)}$    | $V_{DS}=V_{GS}$ $I_D=250\mu A$                              | 0.4 | 0.7  | 1.0      | V          |
| Static Drain-Source On-Resistance  | $R_{DS(on)(1)}$ | $V_{GS}=4.5V$ $I_D=650mA$                                   |     | 170  | 380      | m $\Omega$ |
|                                    | $R_{DS(on)(2)}$ | $V_{GS}=2.5V$ $I_D=550mA$                                   |     | 230  | 450      | m $\Omega$ |
|                                    | $R_{DS(on)(3)}$ | $V_{GS}=1.8V$ $I_D=450mA$                                   |     | 330  | 590      | m $\Omega$ |
| Drain-Source Diode Forward Voltage | $V_{SD}$        | $V_{GS}=0V$ $I_S=150mA$                                     |     |      | 1.2      | V          |
| Input Capacitance                  | $C_{iss}$       | $V_{DS}=10V$ $V_{GS}=0V$<br>$f=1.0MHz$                      |     | 55   |          | pF         |
| Output Capacitance                 | $C_{oss}$       |                                                             |     | 15   |          |            |
| Reverse Transfer Capacitance       | $C_{rss}$       |                                                             |     | 10   |          |            |
| Total Gate Charge                  | $Q_g$           | $V_{GS}=4.5V$ , $V_{DS}=10V$ ,<br>$I_D=0.65A$               |     | 0.8  |          | nC         |
| Gate Source Charge                 | $Q_{gs}$        |                                                             |     | 0.2  |          |            |
| Gate Drain Charge                  | $Q_{gd}$        |                                                             |     | 0.01 |          |            |
| Turn-On Delay Time                 | $t_{d(on)}$     | $V_{GS}=4.5V$ $V_{DS}=10V$<br>$I_D=0.5A$ $R_{GEN}=10\Omega$ |     | 6.7  |          | ns         |
| Turn-On Rise Time                  | $t_r$           |                                                             |     | 4.8  |          |            |
| Turn-Off Delay Time                | $t_{d(off)}$    |                                                             |     | 17.3 |          |            |
| Turn-Off Fall Time                 | $t_f$           |                                                             |     | 7.4  |          |            |

/ Electrical Characteristic Curve



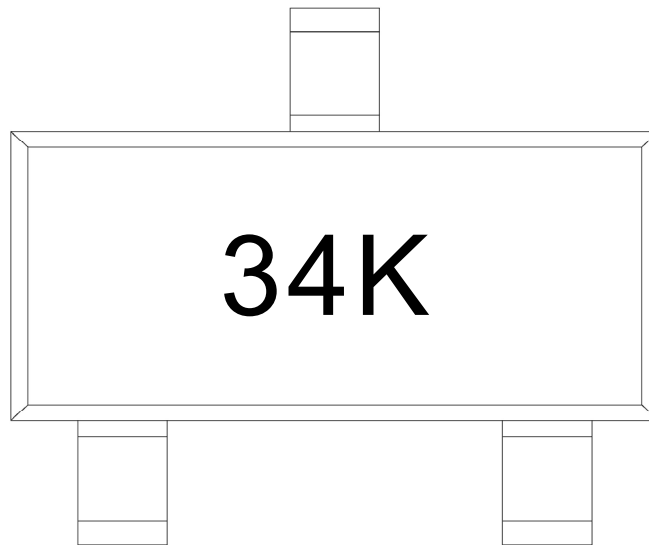
/ Package Dimensions



| Dimensions In Inches |       | Symbol | Dimensions In Millimeters |       |
|----------------------|-------|--------|---------------------------|-------|
| Min.                 | Max.  |        | Min.                      | Max.  |
| 0.028                | 0.035 | A      | 0.700                     | 0.900 |
| 0.000                | 0.004 | A1     | 0.000                     | 0.100 |
| 0.028                | 0.031 | A2     | 0.700                     | 0.800 |
| 0.000                | 0.014 | b1     | 0.000                     | 0.350 |
| 0.000                | 0.004 | b2     | 0.000                     | 0.008 |
| 0.000                | 0.004 | c      | 0.000                     | 0.008 |
| 0.000                | 0.004 | D      | 0.000                     | 0.008 |
| 0.000                | 0.004 | E1     | 0.000                     | 0.008 |
| 0.000                | 0.004 | L      | 0.000                     | 0.008 |
| 0.000                | 0.004 | e1     | 0.000                     | 0.008 |
| 0.000                | 0.004 | theta  | 0.000                     | 0.008 |



**/ Marking Instructions**



34K

Note:

34K:      Product Type Code

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- Note:

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

2. Peak Temp.: 245 5 , Duration: 5 0.5sec.

3. Cooling Speed: 2~10 /sec.
- 1 150 180 60 90sec;

2 245 5 5 0.5sec;

3 2 10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.: 260±5 Time: 10±1 sec

/ Packaging SPEC.

/ REEL

| Package Type | Units | Dimension (unit mm <sup>3</sup> ) |
|--------------|-------|-----------------------------------|
|              |       |                                   |