



# SPN2622

## Dual N-Channel Enhancement Mode MOSFET

### DESCRIPTION

The SPN2622 is the Dual N-Channel enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching , low in-line power loss, and resistance to transients are needed.

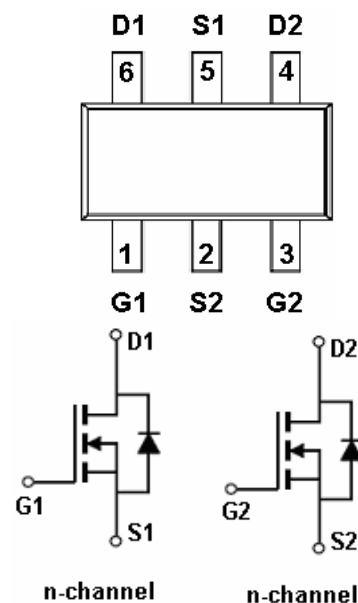
### FEATURES

- ◆ 20V/4.0A,  $R_{DS(ON)} = 80m\Omega @ V_{GS}=4.5V$
- ◆ 20V/3.4A,  $R_{DS(ON)} = 100m\Omega @ V_{GS}=2.5V$
- ◆ Super high density cell design for extremely low  $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23-6L package design

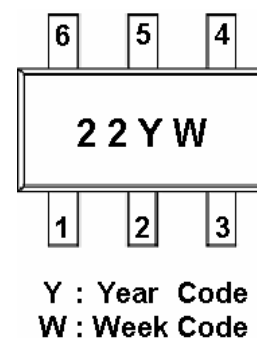
### APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

### PIN CONFIGURATION( SOT-23-6L )



### PART MARKING





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### PIN DESCRIPTION

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1   | G1     | Gate 1      |
| 2   | S2     | Source 2    |
| 3   | G2     | Gate 2      |
| 4   | D2     | Drain 2     |
| 5   | S1     | Source 1    |
| 6   | D1     | Drain1      |

### ORDERING INFORMATION

| Part Number   | Package   | Part Marking |
|---------------|-----------|--------------|
| SPN2622S26RGB | SOT-23-6L | 22YW         |

※ Week Code : A ~ Z( 1 ~ 26 ) ; a ~ z( 27 ~ 52 )

※ SPN2622S26RGB : Tape Reel ; Pb – Free; Halogen – Free

### ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

| Parameter                                       |                      | Symbol           | Typical | Unit |
|-------------------------------------------------|----------------------|------------------|---------|------|
| Drain-Source Voltage                            |                      | V <sub>DSS</sub> | 20      | V    |
| Gate –Source Voltage                            |                      | V <sub>GSS</sub> | ±12     | V    |
| Continuous Drain Current(T <sub>J</sub> =150°C) | T <sub>A</sub> =25°C | I <sub>D</sub>   | 4.0     | A    |
|                                                 | T <sub>A</sub> =70°C |                  | 3.4     |      |
| Pulsed Drain Current                            |                      | I <sub>DM</sub>  | 10      | A    |
| Continuous Source Current(Diode Conduction)     |                      | I <sub>S</sub>   | 1.6     | A    |
| Power Dissipation                               | T <sub>A</sub> =25°C | P <sub>D</sub>   | 1.25    | W    |
|                                                 | T <sub>A</sub> =70°C |                  | 0.8     |      |
| Operating Junction Temperature                  |                      | T <sub>J</sub>   | -55/150 | °C   |
| Storage Temperature Range                       |                      | T <sub>STG</sub> | -55/150 | °C   |
| Thermal Resistance-Junction to Ambient          |                      | R <sub>θJA</sub> | 105     | °C/W |



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### ELECTRICAL CHARACTERISTICS

(T<sub>A</sub>=25°C Unless otherwise noted)

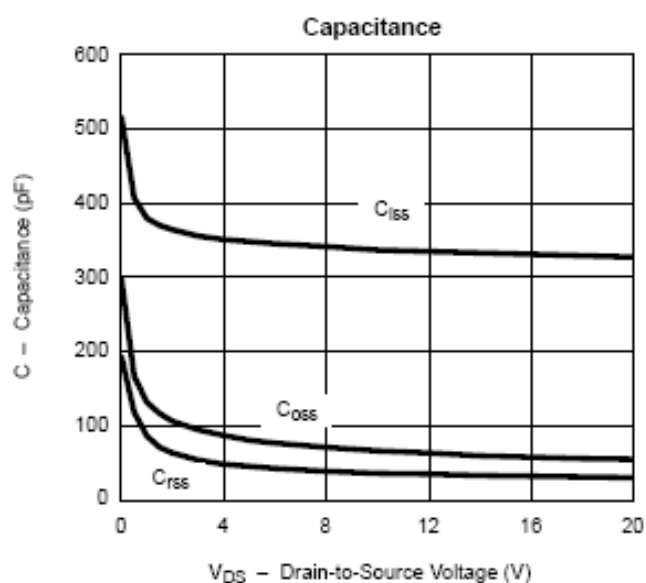
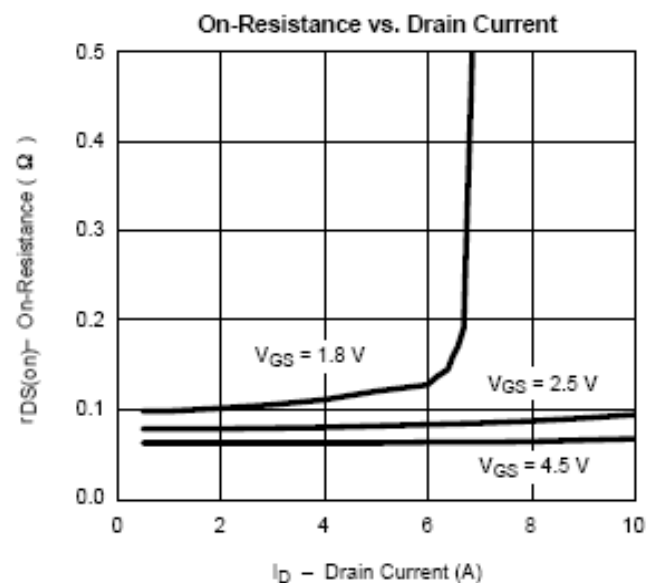
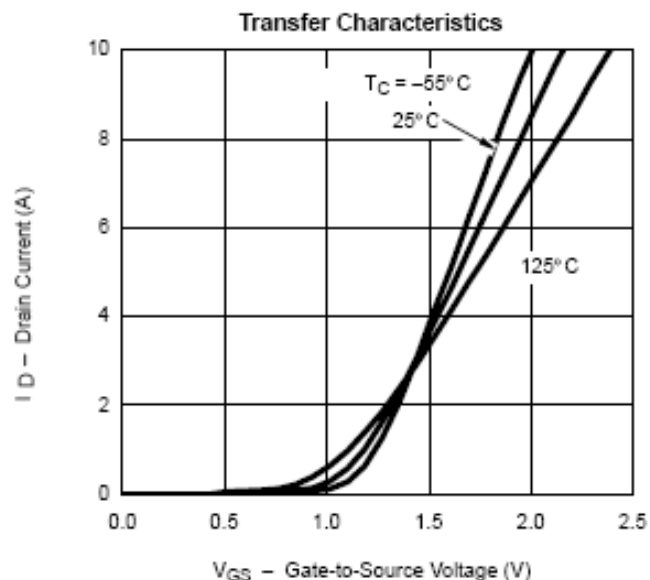
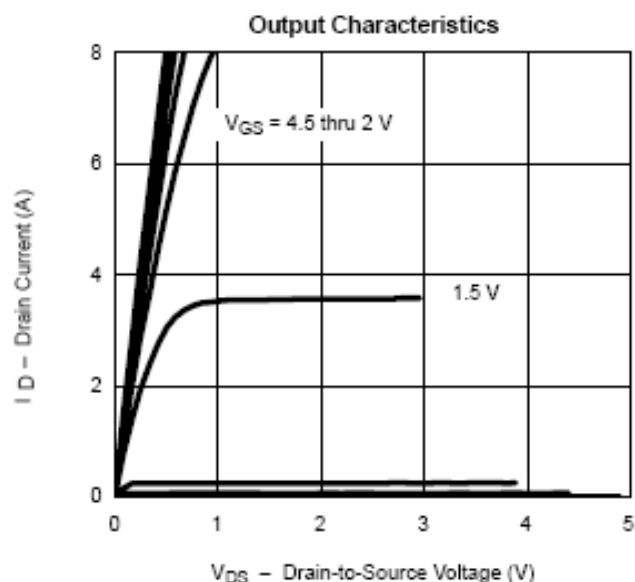
| Parameter                       | Symbol               | Conditions                                                                                                    | Min. | Typ   | Max.  | Unit |
|---------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------|------|-------|-------|------|
| <b>Static</b>                   |                      |                                                                                                               |      |       |       |      |
| Drain-Source Breakdown Voltage  | V <sub>(BR)DSS</sub> | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA                                                                    | 20   |       |       | V    |
| Gate Threshold Voltage          | V <sub>GS(th)</sub>  | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA                                                      | 0.4  |       | 1.0   |      |
| Gate Leakage Current            | I <sub>GSS</sub>     | V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V                                                                    |      |       | ±100  | nA   |
| Zero Gate Voltage Drain Current | I <sub>DSS</sub>     | V <sub>DS</sub> =20V, V <sub>GS</sub> =0V                                                                     |      |       | 1     | μA   |
|                                 |                      | V <sub>DS</sub> =20V, V <sub>GS</sub> =0V<br>T <sub>J</sub> =55°C                                             |      |       | 5     |      |
| On-State Drain Current          | I <sub>D(on)</sub>   | V <sub>DS</sub> ≤ 5V, V <sub>GS</sub> =4.5V                                                                   | 6    |       |       | A    |
| Drain-Source On-Resistance      | R <sub>DS(on)</sub>  | V <sub>GS</sub> =4.5V, I <sub>D</sub> =4.0A                                                                   |      | 0.060 | 0.080 | Ω    |
|                                 |                      | V <sub>GS</sub> =2.5V, I <sub>D</sub> =3.4A                                                                   |      | 0.075 | 0.100 |      |
| Forward Transconductance        | g <sub>fs</sub>      | V <sub>DS</sub> =5V, I <sub>D</sub> =-3.6A                                                                    |      | 10    |       | S    |
| Diode Forward Voltage           | V <sub>SD</sub>      | I <sub>S</sub> =1.6A, V <sub>GS</sub> =0V                                                                     |      | 0.8   | 1.2   | V    |
| <b>Dynamic</b>                  |                      |                                                                                                               |      |       |       |      |
| Total Gate Charge               | Q <sub>g</sub>       | V <sub>DS</sub> =6V, V <sub>GS</sub> =4.5V<br>I <sub>D</sub> =2.8A                                            |      | 4.8   | 8     | nC   |
| Gate-Source Charge              | Q <sub>gs</sub>      |                                                                                                               |      | 1.0   |       |      |
| Gate-Drain Charge               | Q <sub>gd</sub>      |                                                                                                               |      | 1.0   |       |      |
| Input Capacitance               | C <sub>iss</sub>     | V <sub>DS</sub> =6V, V <sub>GS</sub> =0V<br>f=1MHz                                                            |      | 485   |       | pF   |
| Output Capacitance              | C <sub>oss</sub>     |                                                                                                               |      | 85    |       |      |
| Reverse Transfer Capacitance    | C <sub>rss</sub>     |                                                                                                               |      | 40    |       |      |
| Turn-On Time                    | t <sub>d(on)</sub>   | V <sub>DD</sub> =6V, R <sub>L</sub> =6Ω<br>I <sub>D</sub> =1.0A, V <sub>GEN</sub> =4.5V<br>R <sub>G</sub> =6Ω |      | 8     | 14    | ns   |
|                                 | t <sub>r</sub>       |                                                                                                               |      | 12    | 18    |      |
| Turn-Off Time                   | t <sub>d(off)</sub>  |                                                                                                               |      | 30    | 35    |      |
|                                 | t <sub>f</sub>       |                                                                                                               |      | 12    | 16    |      |

### TYPICAL CHARACTERISTICS



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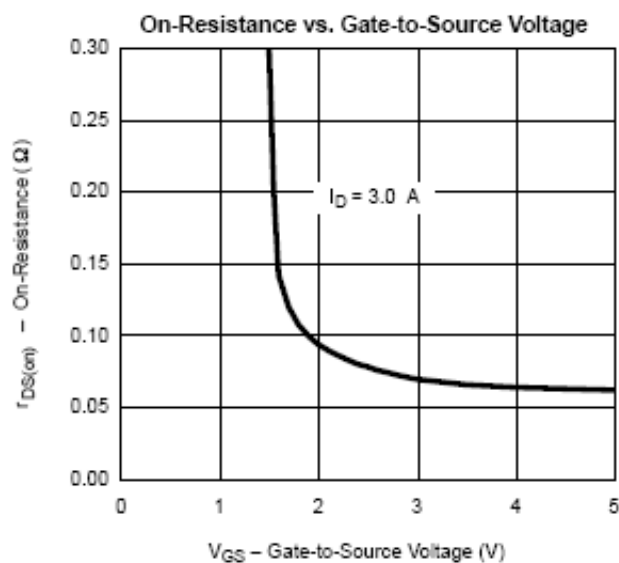
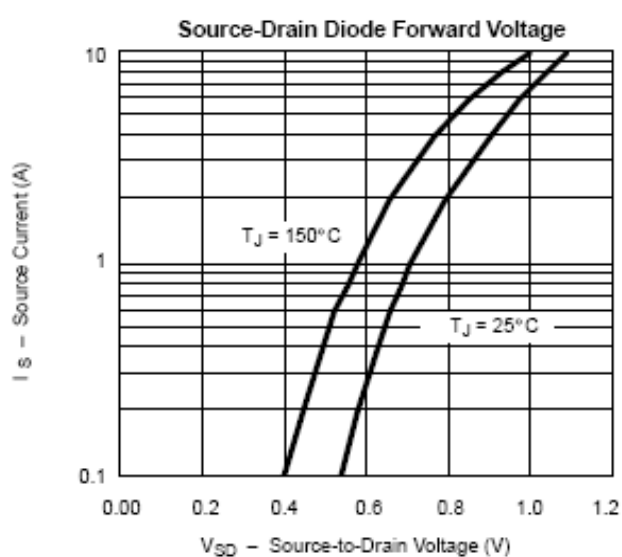
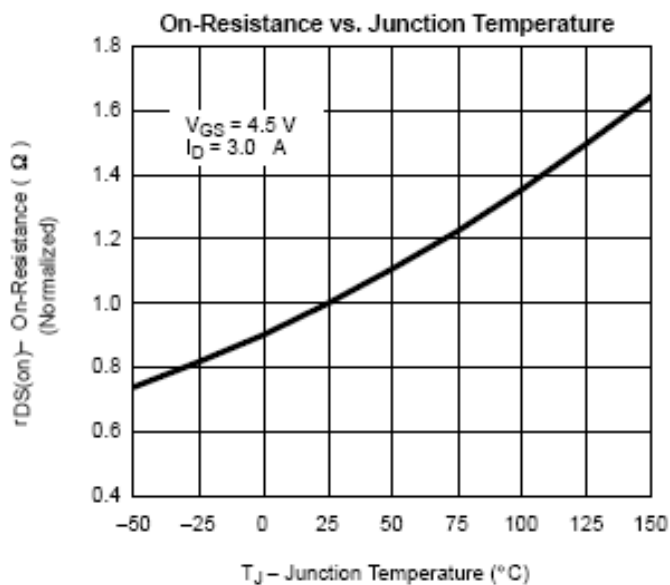
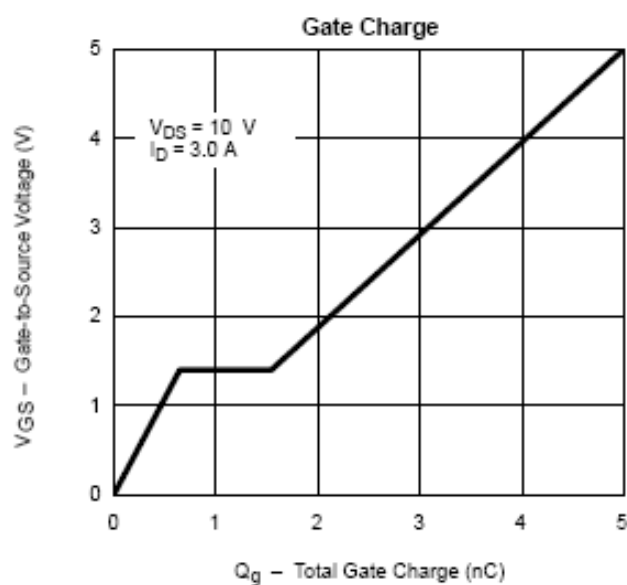


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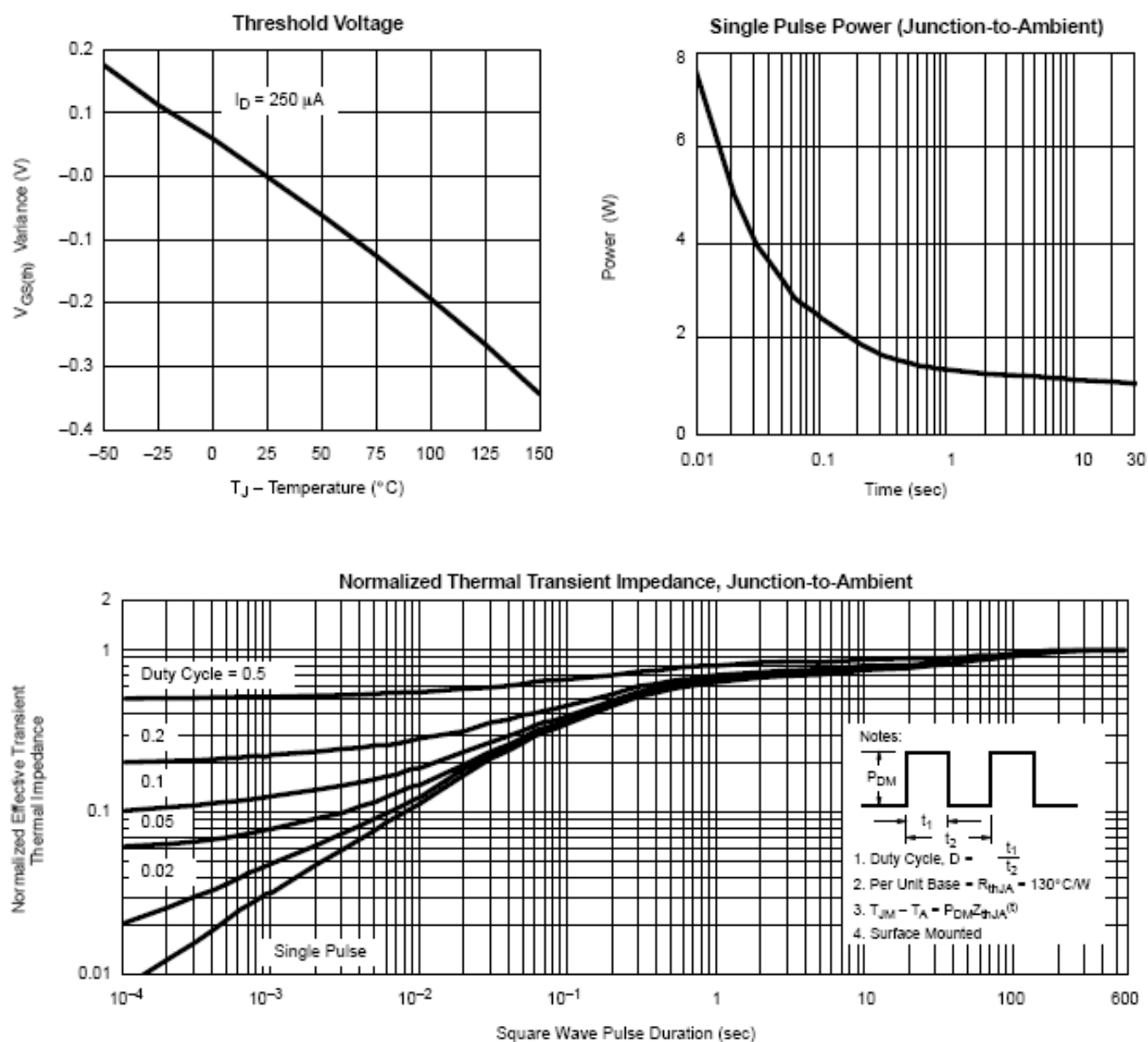


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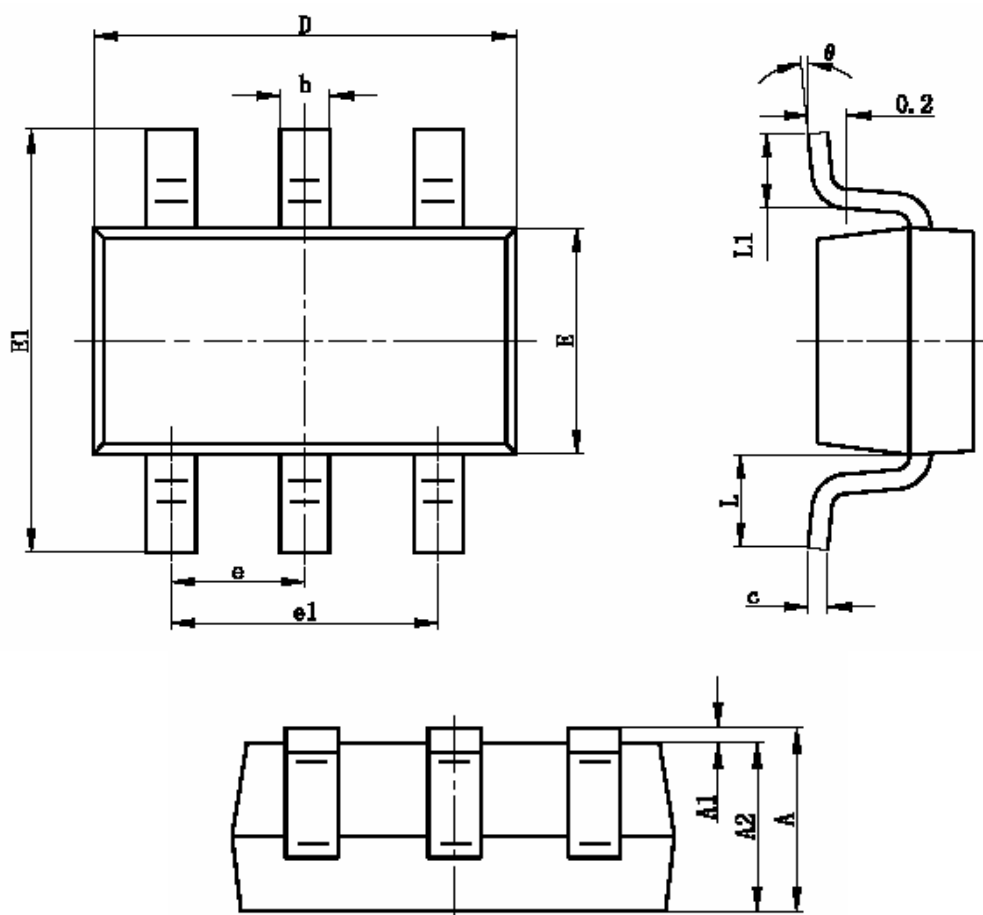


### SOT-23-6L PACKAGE OUTLINE



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## Dual N-Channel Enhancement Mode MOSFET



| 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                     | 0.400 | 0.012                | 0.016 |
| 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      | 0.950TYP                  |       | 0.037TYP             |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.700REF                  |       | 0.028REF             |       |
| L1     | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



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