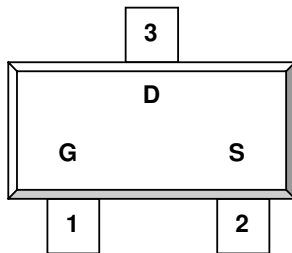




### DESCRIPTION

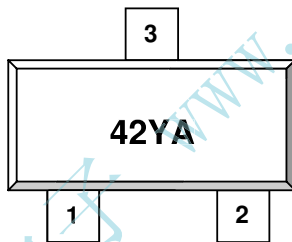
The G2342SRG is the N-Channel logic enhancement mode power field effect transistor is produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other batter powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

### PIN CONFIGURATION SOT-23



1.Gate 2.Source 3.Drain

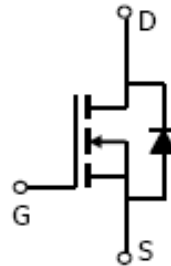
### PART MARKING SOT-23



Y: Year Code A: Process Code

### FEATURE

- 20V/6.0A,  $R_{DS(ON)} = 35m\Omega$  (Typ.) @ $V_{GS} = 10V$
- 20V/5.0A,  $R_{DS(ON)} = 48m\Omega$  @ $V_{GS} = 4.5V$
- 20V/4.5A,  $R_{DS(ON)} = 90m\Omega$  @ $V_{GS} = 2.5V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and Maximum DC current capability
- SOT-23 package design



### ORDERING INFORMATION

| Part Number | Package | Part Marking |
|-------------|---------|--------------|
| G2342SRG    | SOT-23  | 42YA         |

- ※ Process Code : A ~ Z ; a ~ z
- ※ G2342SRG ; S : SOT23 R : TapeReel ; G:Pb-Fr


**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C Unless otherwise noted )**

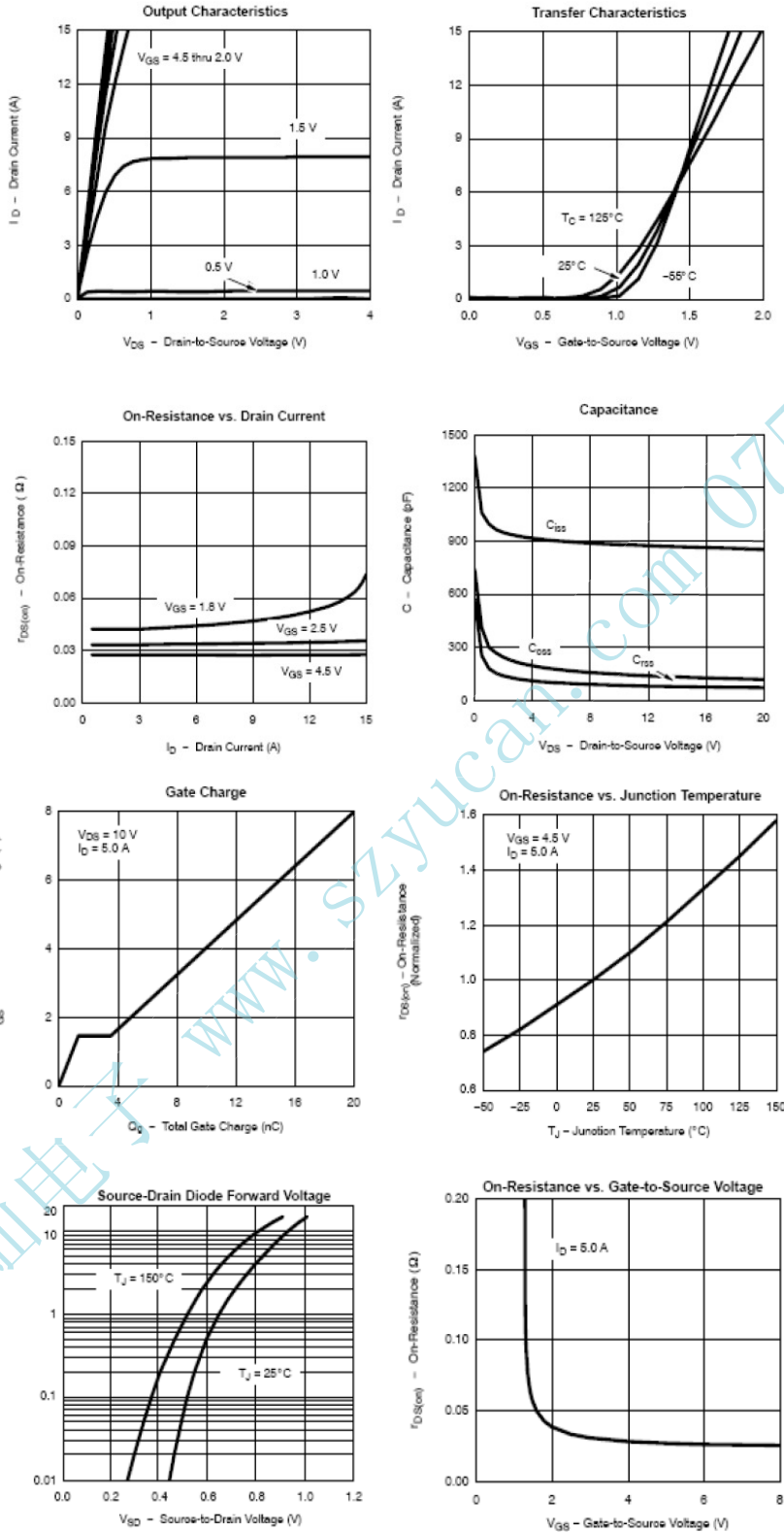
| Parameter  | Symbol           | Typical                      | Unit |
|--|------------------|------------------------------|------|
| Drain-Source Voltage                             | V <sub>DSS</sub> | 20                           | V    |
| Gate-Source Voltage                              | V <sub>GSS</sub> | ±12                          | V    |
| Continuous Drain Current (T <sub>J</sub> =150°C) | I <sub>D</sub>   | T <sub>A</sub> =25°C<br>6.0  | A    |
|  |                  | T <sub>A</sub> =70°C<br>3.0  |      |
| Pulsed Drain Current                             | I <sub>DM</sub>  | 10                           | A    |
| Continuous Source Current (Diode Conduction)     | I <sub>S</sub>   | 1.0                          | A    |
| Power Dissipation                                | P <sub>D</sub>   | T <sub>A</sub> =25°C<br>1.25 | W    |
|  |                  | T <sub>A</sub> =70°C<br>0.8  |      |
| Operation Junction Temperature                   | T <sub>J</sub>   | 150                          | °C   |
| Storage Temperature Range                        | T <sub>STG</sub> | -55/150                      | °C   |
| Thermal Resistance-Junction to Ambient           | R <sub>θJA</sub> | 140                          | °C/W |


**ELECTRICAL CHARACTERISTICS** ( Ta = 25°C Unless otherwise noted )

| Parameter                       | Symbol                | Condition   | Min | Typ                     | Max       | Unit     |
|---------------------------------|-----------------------|---|-----|-------------------------|-----------|----------|
| <b>Static</b>                   |                       |   |     |                         |           |          |
| Drain-Source Breakdown Voltage  | $V_{(BR)DSS}$         | $V_{GS}=0V, I_D=250\mu A$   | 20  |                         |           | V        |
| Gate Threshold Voltage          | $V_{GS(th)}$          | $V_{DS}=V_{GS}, I_D=250\mu A$   | 0.4 |                         | 1.2       | V        |
| Gate Leakage Current            | $I_{GSS}$             | $V_{DS}=0V, V_{GS}=\pm 20V$   |     |                         | $\pm 100$ | nA       |
| Zero Gate Voltage Drain Current | $I_{DSS}$             | $V_{DS}=20V, V_{GS}=0V$   |     |                         | 1         | uA       |
|                                 |                       | $V_{DS}=20V, V_{GS}=0V$<br>$T_J=85^\circ C$                                   |     |                         | 10        |          |
| Drain-source On-Resistance      | $R_{DS(on)}$          | $V_{GS}=10V, I_D=6.0A$<br>$V_{GS}=4.5V, I_D=5.0A$<br>$V_{GS}=2.5V, I_D=4.5A$  |     | 0.035<br>0.048<br>0.090 |           | $\Omega$ |
| Forward Transconductance        | $g_{fs}$              | $V_{DS}=15V, I_D=5.0A$  |     | 30                      |           | S        |
| Diode Forward Voltage           | $V_{SD}$              | $I_S=1.7A, V_{GS}=0V$   |     | 0.9                     | 1.2       | V        |
| <b>Dynamic</b>                  |                       |   |     |                         |           |          |
| Total Gate Charge               | $Q_g$                 | $V_{DS}=10V$<br>$V_{GS}=4.5V$<br>$I_D=5A$                                     |     | 10                      | 13        | nC       |
| Gate-Source Charge              | $Q_{gs}$              |   |     | 1.4                     |           |          |
| Gate-Drain Charge               | $Q_{gd}$              |   |     | 2.1                     |           |          |
| Input Capacitance               | $C_{iss}$             | $V_{DS}=10V$<br>$V_{GS}=0V$<br>$F=1MHz$                                       |     | 600                     |           | pF       |
| Output Capacitance              | $C_{oss}$             |   |     | 120                     |           |          |
| Reverse Transfer Capacitance    | $C_{rss}$             |   |     | 100                     |           |          |
| Turn-On Time                    | $t_{d(on)}$<br>$t_r$  | $V_{DD}=10V$<br>$R_L=10\Omega$<br>$I_D=1A$<br>$V_{GEN}=4.5V$<br>$R_G=6\Omega$ |     | 15                      | 25        | nS       |
|                                 |                       |   |     | 40                      | 60        |          |
| Turn-Off Time                   | $t_{d(off)}$<br>$t_f$ |   |     | 45                      | 65        |          |
|                                 |                       |   |     | 30                      | 40        |          |

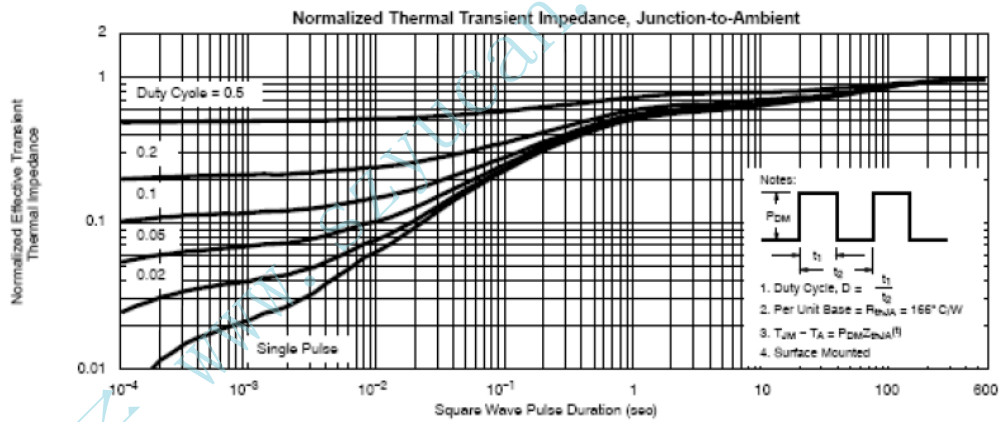
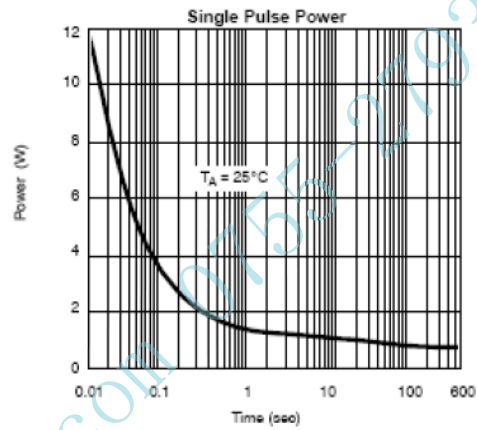
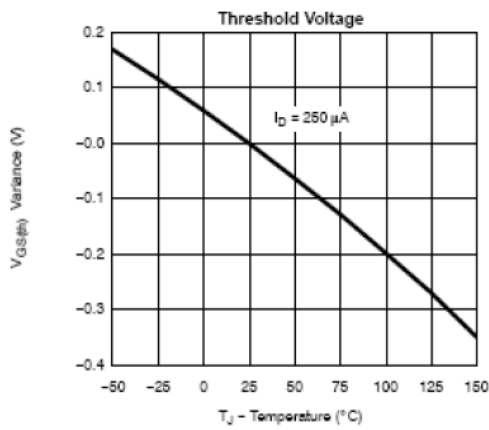


### TYPICAL CHARACTERISTICS (25°C Unless noted)



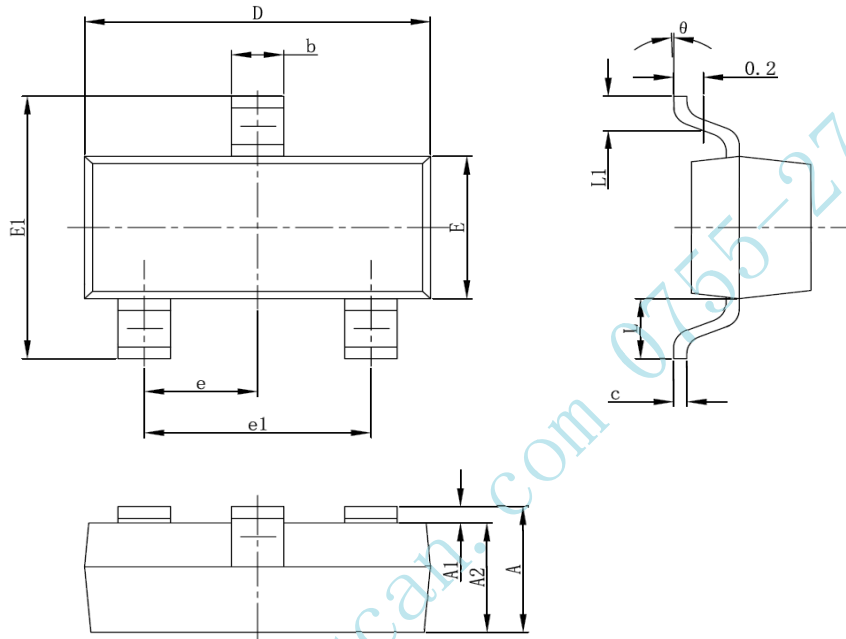


TYPICAL CHARACTERISTIC





### SOT-23 PACKAGE OUTLINE



| Symbol   | Dimensions In Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min                       | Max   | Min                  | Max   |
| A        | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                     | 1.000 | 0.035                | 0.039 |
| b        | 0.300                     | 0.500 | 0.012                | 0.020 |
| c        | 0.080                     | 0.150 | 0.003                | 0.006 |
| D        | 2.800                     | 3.000 | 0.110                | 0.118 |
| E        | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1       | 2.250                     | 2.550 | 0.089                | 0.100 |
| e        | 0.950TYP                  |       | 0.037TYP             |       |
| e1       | 1.800                     | 2.000 | 0.071                | 0.079 |
| L        | 0.550REF                  |       | 0.022REF             |       |
| L1       | 0.300                     | 0.500 | 0.012                | 0.020 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |