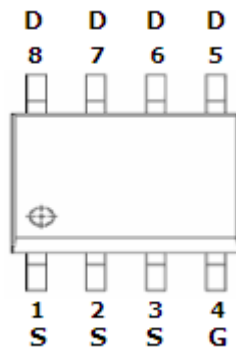
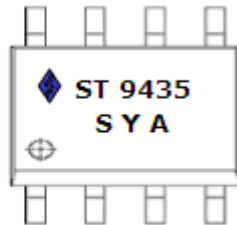


**DESCRIPTION**

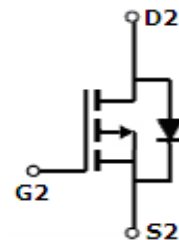
ST9435A is the P-Channel logic enhancement mode power field effect transistor which is produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as battery pack, notebook computer power management, and other battery powered circuits.

**PIN CONFIGURATION**  
**SOP-8**

**FEATURE**

- -30V/-5.6A,  $R_{DS(ON)} = 57m\Omega$  (Typ.) @  $V_{GS} = -10V$
- -30V/-5.0A,  $R_{DS(ON)} = 72m\Omega$  @  $V_{GS} = -6.0V$
- -30V/-4.4A,  $R_{DS(ON)} = 95m\Omega$  @  $V_{GS} = -4.5V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP-8 package design

**PART MARKING**  
**SOP-8**


S : Subcontractor Y : Year Code  
A : Process Code



P-Channel

**ORDERING INFORMATION**

| Part Number | Package | Part Marking |
|-------------|---------|--------------|
| ST9435AS8RG | SOP-8P  | ST9435A      |
| ST9435AS8TG | SOP-8P  | ST9435A      |

※ Process Code : A ~ Z ; a ~ z

※ ST9435AS8RG S8 : SOP-8 ; R : Tape Reel ; G : Pb - Free

※ ST9435AS8TG S8 : SOP-8 ; T : Tube ; G : Pb - Free



**ST9435A** 

P Channel Enhancement Mode MOSFET

- 5.6A

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

| Parameter                                    | Symbol | Typical         | Unit |
|--|--------|-----------------|------|
| Drain-Source Voltage                         | VDSS   | -30             | V    |
| Gate-Source Voltage                          | VGSS   | ±20             | V    |
| Continuous Drain Current<br>(TJ=150°C)       | ID     | TA=25°C<br>-6.5 | A    |
|  |        | TA=70°C<br>-4.6 |      |
| Pulsed Drain Current                         | IDM    | -30             | A    |
| Continuous Source Current (Diode Conduction) | IS     | -2.3            | A    |
| Power Dissipation                            | PD     | TA=25°C<br>2.5  | W    |
|  |        | TA=70°C<br>1.6  |      |
| Operation Junction Temperature               | TJ     | 150             | °C   |
| Storage Temperature Range                    | TSTG   | -55/150         | °C   |
| Thermal Resistance-Junction to Ambient       | RθJA   | 70              | °C/W |



**ST9435A** 

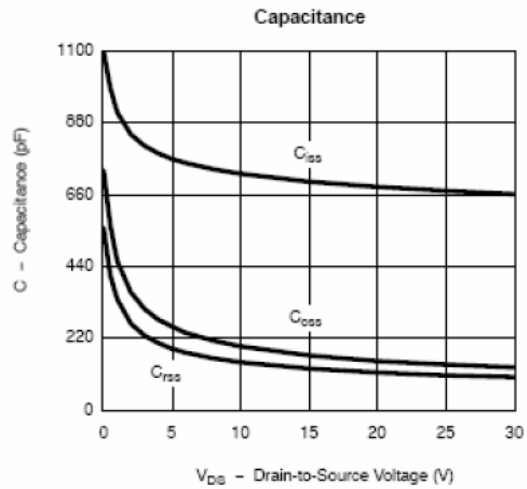
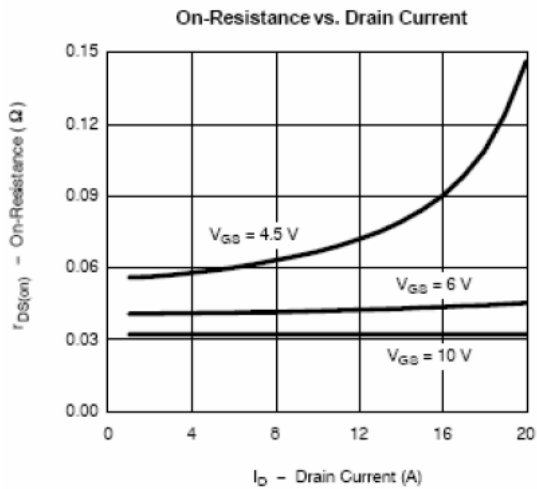
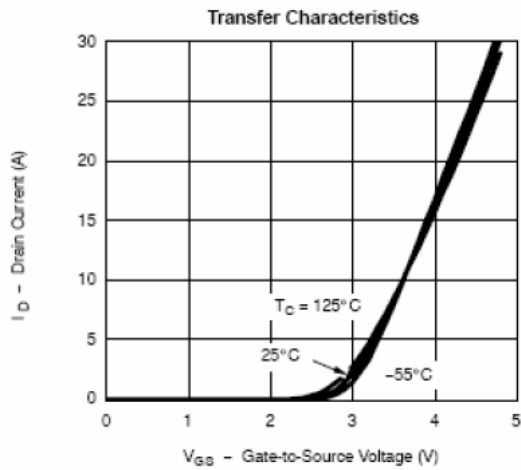
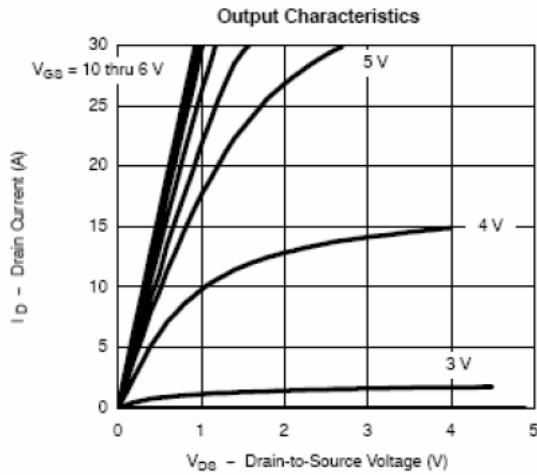
P Channel Enhancement Mode MOSFET

- 5.6A

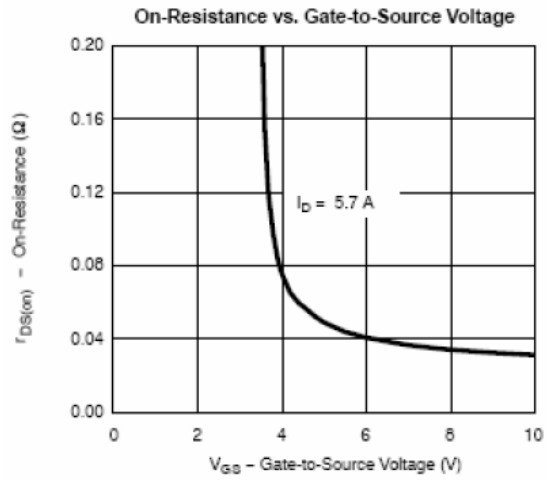
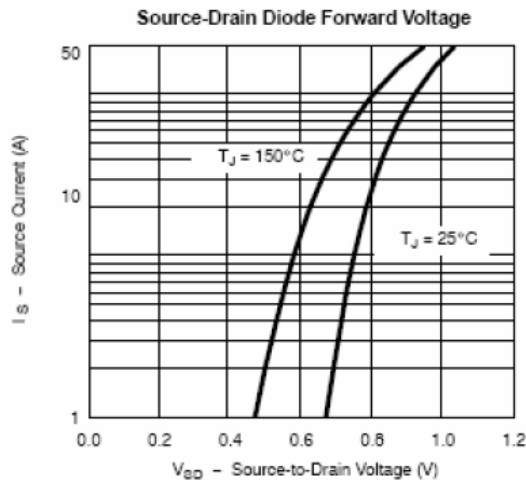
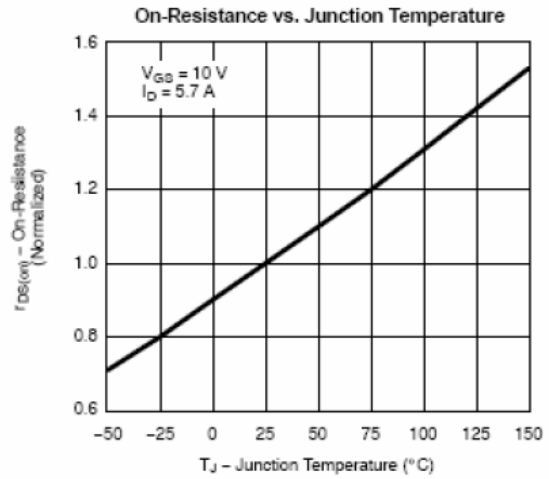
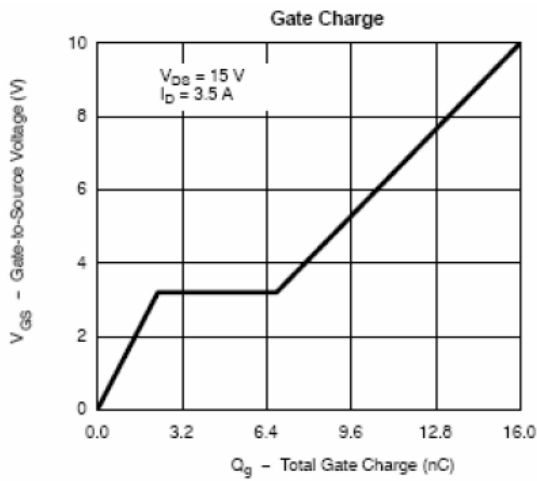
**ELECTRICAL CHARACTERISTICS ( Ta = 25°C Unless otherwise noted )**

| Parameter                       | Symbol                | Condition   | Min  | Typ   | Max       | Unit     |
|---------------------------------|-----------------------|---|------|-------|-----------|----------|
| <b>Static</b>                   |                       |   |      |       |           |          |
| Drain-Source Breakdown Voltage  | $V_{(BR)DSS}$         | $V_{GS}=0V, I_D=-250\mu A$  | -30  |       |           | V        |
| Gate Threshold Voltage          | $V_{GS(th)}$          | $V_{DS}=V_{GS}, I_D=-250\mu A$  | -1.0 |       | -3.0      | V        |
| Gate Leakage Current            | $I_{GSS}$             | $V_{DS}=0V, V_{GS}=\pm 20V$   |      |       | $\pm 100$ | nA       |
| Zero Gate Voltage Drain Current | $I_{DSS}$             | $V_{DS}=-24V, V_{GS}=0V$  |      |       | -1        | uA       |
|                                 |                       | $V_{DS}=-24V, V_{GS}=0V$<br>$T_J=85^\circ C$                            |      |       | -5        |          |
| On-State Drain Current          | $I_{D(on)}$           | $V_{DS}=-5V, V_{GS}=-4.5V$  | -10  |       |           | A        |
| Drain-source On-Resistance      | $R_{DS(on)}$          | $V_{GS}=-10V, I_D=-5.6A$  |      | 0.057 |           | $\Omega$ |
|                                 |                       | $V_{GS}=-6.0V, I_D=-5.0A$   |      | 0.072 |           |          |
|                                 |                       | $V_{GS}=-4.5V, I_D=-4.4A$   |      | 0.095 |           |          |
| Forward Transconductance        | $g_{fs}$              | $V_{DS}=-15V, I_D=-5.7V$  |      | 13    |           | S        |
| Diode Forward Voltage           | $V_{SD}$              | $I_S=-2.3A, V_{GS}=0V$  |      | -0.8  | -1.2      | V        |
| <b>Dynamic</b>                  |                       |   |      |       |           |          |
| Total Gate Charge               | $Q_g$                 | $V_{DS}=-15V, V_{GS}=-10V$<br>$I_D=-3.5A$                               |      | 16    | 24        | nC       |
| Gate-Source Charge              | $Q_{gs}$              |   |      | 2.3   |           |          |
| Gate-Drain Charge               | $Q_{gd}$              |   |      | 4.5   |           |          |
| Input Capacitance               | $C_{iss}$             | $V_{DS}=-15V, V_{GS}=0V$<br>$f=1MHz$                                    |      | 680   |           | pF       |
| Output Capacitance              | $C_{oss}$             |   |      | 120   |           |          |
| Reverse Transfer Capacitance    | $C_{rss}$             |   |      | 75    |           |          |
| Turn-On Time                    | $t_{d(on)}$<br>$t_r$  | $V_{DD}=-15V, R_L=15\Omega$<br>$I_D=-1A, V_{GEN}=-10V$<br>$R_G=6\Omega$ |      | 14    | 25        | nS       |
|                                 |                       |   |      | 16    | 26        |          |
| Turn-Off Time                   | $t_{d(off)}$<br>$t_f$ |   |      | 43    | 70        |          |
|                                 |                       |   |      | 30    | 52        |          |

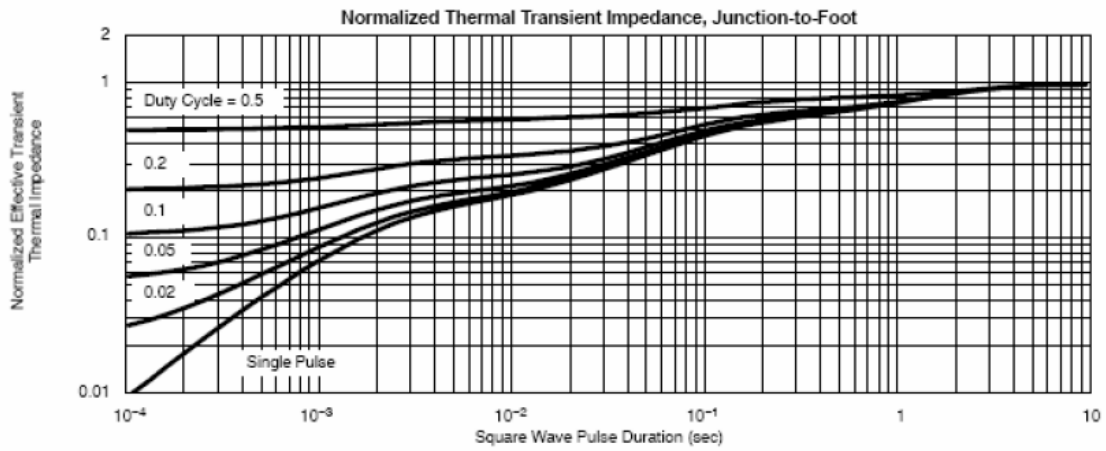
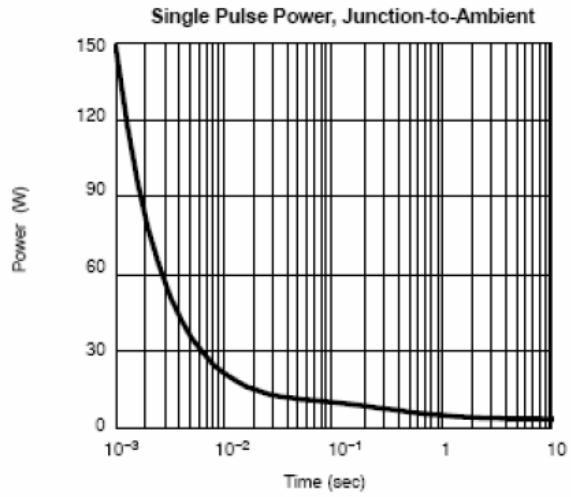
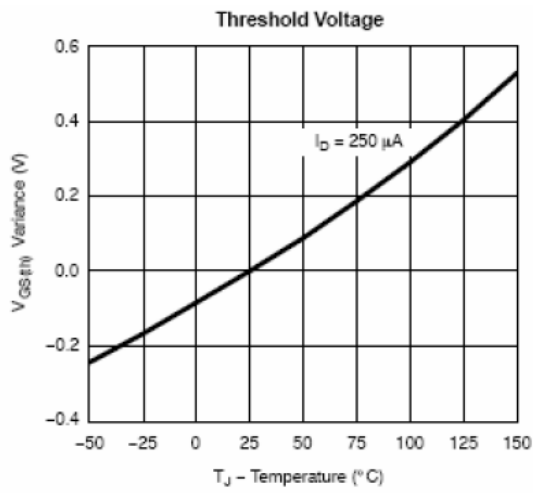
**TYPICAL CHARACTERISTICS**



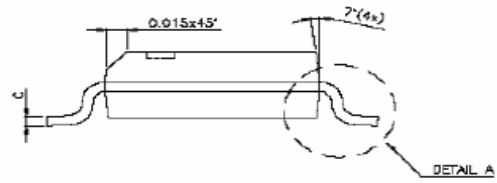
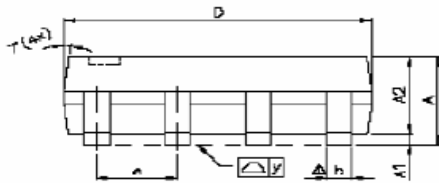
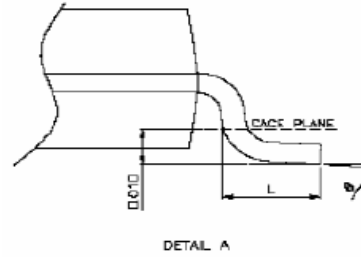
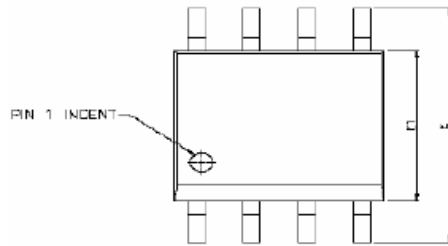
**TYPICAL CHARACTERISTICS**



**TYPICAL CHARACTERISTICS**



**PACKAGE OUTLINE SOP-8P**



| SYMBOLS    | DIMENSIONS IN MILLIMETERS |      |       | DIMENSIONS IN INCHES |       |        |
|------------|---------------------------|------|-------|----------------------|-------|--------|
|            | MIN                       | NOM  | MAX   | MIN                  | NOM   | MAX    |
| A          | 1.47                      | 1.60 | 1.73  | 0.058                | 0.063 | 0.068  |
| A1         | 0.10                      | —    | 0.25  | 0.004                | —     | 0.010  |
| A2         | —                         | 1.45 | —     | —                    | 0.057 | —      |
| b          | 0.33                      | 0.41 | 0.51  | 0.013                | 0.016 | 0.020  |
| C          | 0.19                      | 0.20 | 0.25  | 0.0075               | 0.008 | 0.0098 |
| D          | 4.80                      | 4.85 | 4.95  | 0.189                | 0.191 | 0.195  |
| E          | 5.80                      | 6.00 | 6.20  | 0.228                | 0.236 | 0.244  |
| E1         | 3.80                      | 3.90 | 4.00  | 0.150                | 0.154 | 0.157  |
| e          | —                         | 1.27 | —     | —                    | 0.050 | —      |
| L          | 0.38                      | 0.71 | 1.27  | 0.015                | 0.028 | 0.050  |
| $\Delta$ y | —                         | —    | 0.076 | —                    | —     | 0.003  |
| $\phi$     | 0°                        | —    | 8°    | 0°                   | —     | 8°     |