



SPP9434

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP9434 is the P-Channel logic 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.

These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

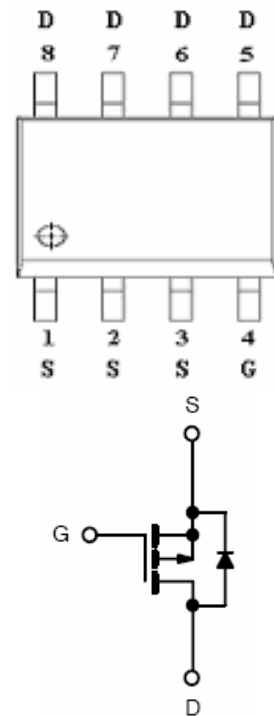
FEATURES

- ◆ -20V/-7.2 A, $R_{DS(ON)} = 40m\Omega @ V_{GS} = -4.5V$
- ◆ -20V/-5.2 A, $R_{DS(ON)} = 52m\Omega @ V_{GS} = -2.5V$
- ◆ -20V/-3.6 A, $R_{DS(ON)} = 62m\Omega @ V_{GS} = -1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOP-8P package design

APPLICATIONS

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

PIN CONFIGURATION(SOP – 8P)



PART MARKING





SPP9434

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PIN DESCRIPTION

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1 | S | Source |
| 2 | S | Source |
| 3 | S | Source |
| 4 | G | Gate |
| 5 | D | Drain |
| 6 | D | Drain |
| 7 | D | Drain |
| 8 | D | Drain |

ORDERING INFORMATION

| Part Number | Package | Part Marking |
|--------------|---------|--------------|
| SPP9434S8RG | SOP- 8P | SPP9434 |
| SPP9434S8RGB | SOP- 8P | SPP9434 |

※ SPP9434S8RG : 13" Tape Reel ; Pb – Free

※ SPP9434S8RGB : 13" Tape Reel ; Pb – Free ; Halogen - Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

| Parameter | Symbol | Typical | Unit |
|---|------------------|---------|------|
| Drain-Source Voltage | V _{DSS} | -20 | V |
| Gate –Source Voltage | V _{GSS} | ±12 | V |
| Continuous Drain Current(T _J =150°C) | I _D | TA=25°C | -7.6 |
| | | TA=70°C | -5.4 |
| Pulsed Drain Current | I _{DM} | -30 | A |
| Continuous Source Current(Diode Conduction) | I _S | -2.3 | A |
| Power Dissipation | P _D | TA=25°C | 2.8 |
| | | TA=70°C | 1.8 |
| Operating Junction Temperature | T _J | -55/150 | °C |
| Storage Temperature Range | T _{STG} | -55/150 | °C |
| Thermal Resistance-Junction to Ambient | R _{θJA} | 70 | °C/W |



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ELECTRICAL CHARACTERISTICS

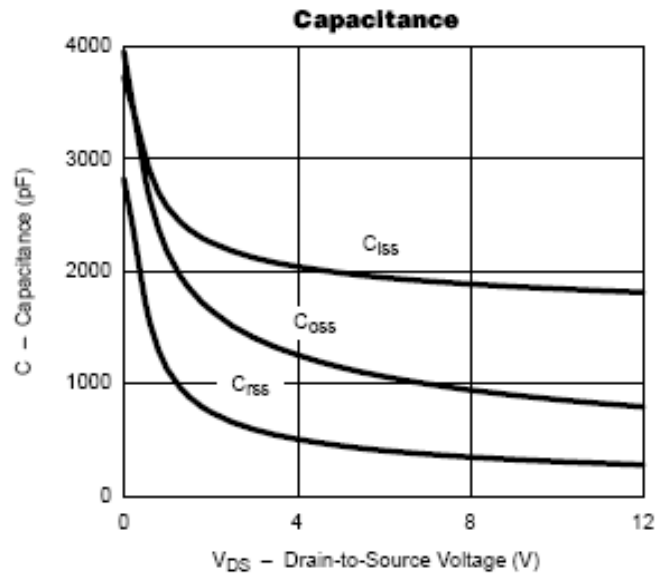
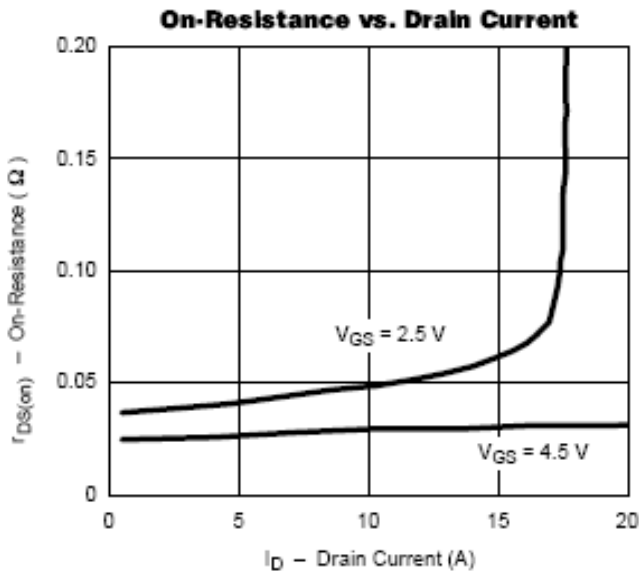
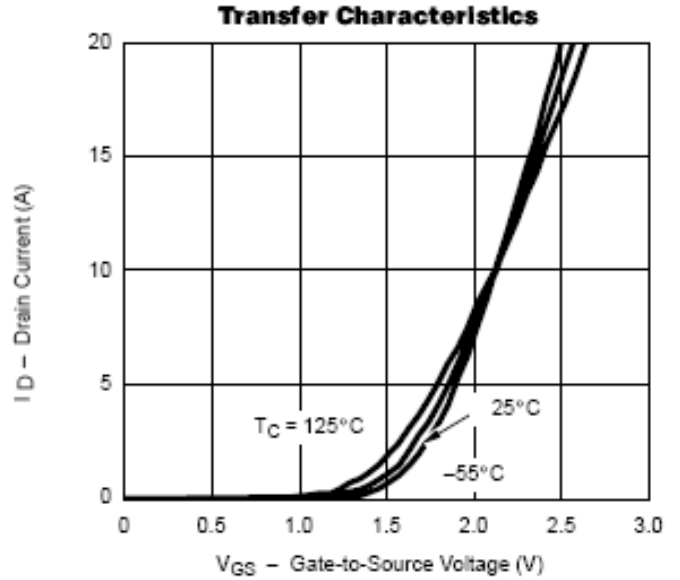
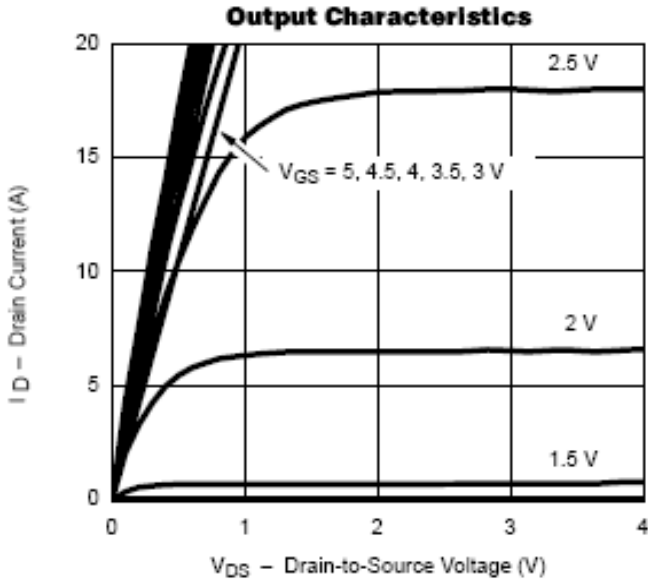
(TA=25°C Unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ | Max. | Unit |
|---------------------------------|----------------------|---|-------|-------|-------|------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =-250uA | -20 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =-250uA | -0.35 | | -0.9 | |
| Gate Leakage Current | I _{GSS} | V _{DS} =0V, V _{GS} =±12V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =-20V, V _{GS} =0V | | | -1 | uA |
| | | V _{DS} =-20V, V _{GS} =0V T _J =55°C | | | -10 | |
| On-State Drain Current | I _{D(on)} | V _{DS} ≤ -5V, V _{GS} =-4.5V | -10 | | | A |
| Drain-Source On-Resistance | R _{DSS(on)} | V _{GS} =- 4.5V, I _D =-7.2A | | 0.030 | 0.040 | Ω |
| | | V _{GS} =- 2.5V, I _D =-5.2A | | 0.040 | 0.052 | |
| | | V _{GS} =- 1.8V, I _D =-3.6A | | 0.050 | 0.062 | |
| Forward Transconductance | g _{fs} | V _{DS} =-5.0V, I _D =-6.2A | | 14 | | S |
| Diode Forward Voltage | V _{SD} | I _S =-2.5A, V _{GS} =0V | | -0.8 | -1.2 | V |
| Dynamic | | | | | | |
| Total Gate Charge | Q _g | V _{DS} =-10V, V _{GS} =-4.5V I _D =-6.4A | | 20 | 25 | nC |
| Gate-Source Charge | Q _{gs} | | | 4.5 | | |
| Gate-Drain Charge | Q _{gd} | | | 8.0 | | |
| Input Capacitance | C _{iss} | V _{DS} =-10V, V _{GS} =0V f=1MHz | | 700 | | pF |
| Output Capacitance | C _{oss} | | | 160 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 120 | | |
| Turn-On Time | t _{d(on)} | V _{DD} =-10V, R _L =6Ω I _D =-1.0A, V _{GEN} =-4.5V R _G =6Ω | | 20 | 30 | ns |
| | t _r | | | 40 | 65 | |
| Turn-Off Time | t _{d(off)} | | | 90 | 120 | |
| | t _f | | | 70 | 90 | |



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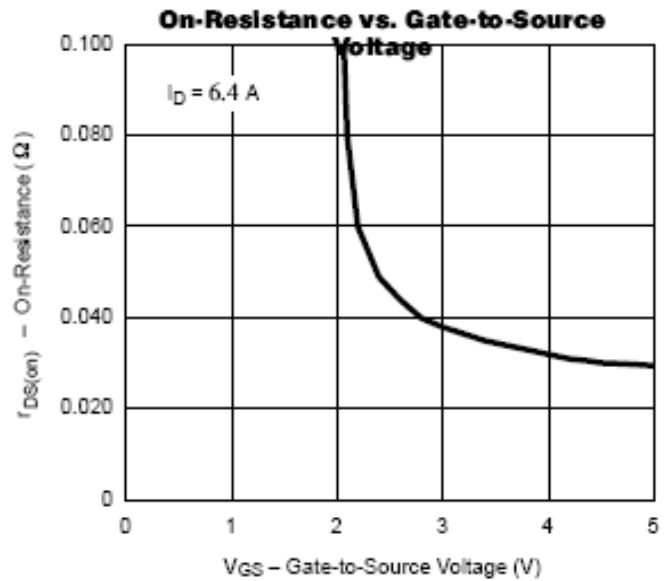
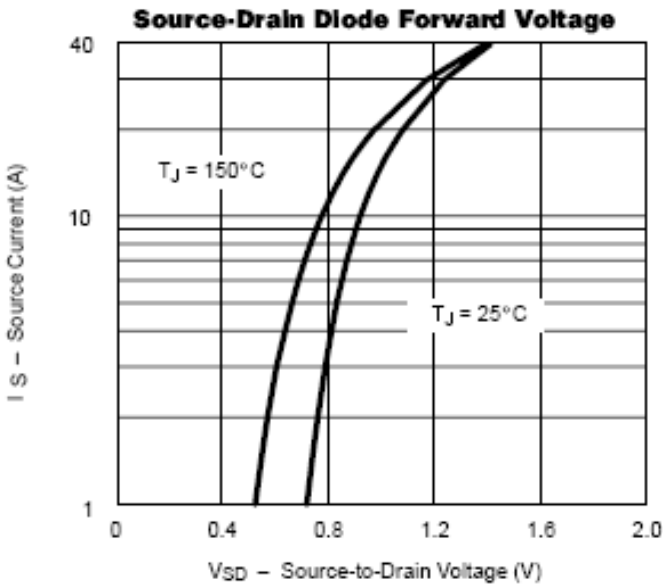
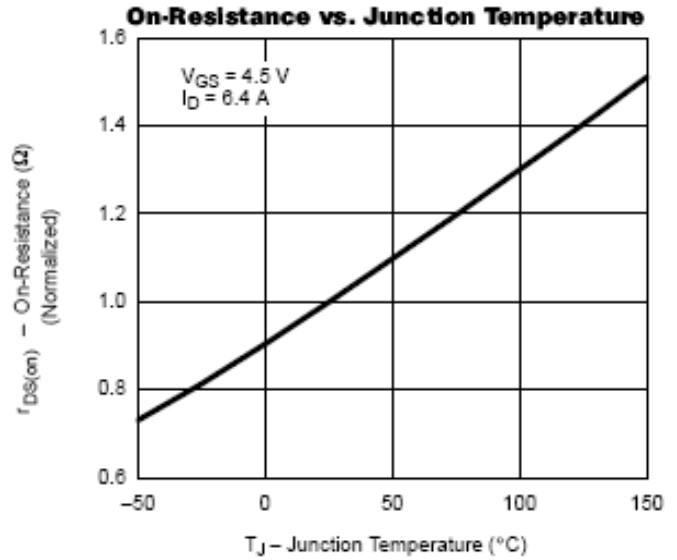
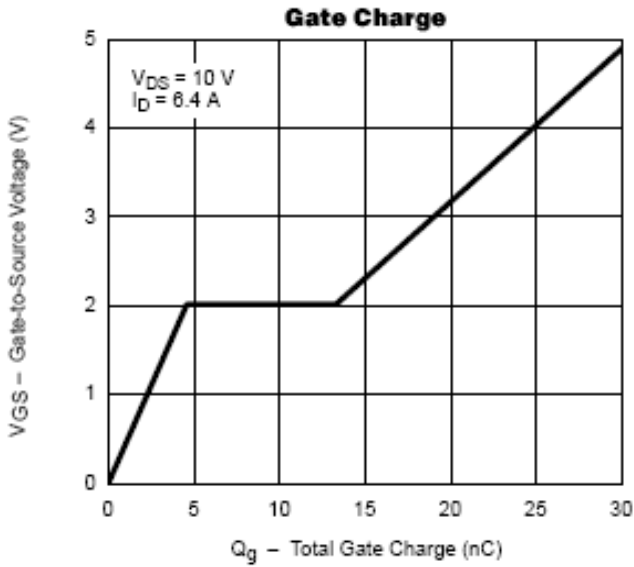
TYPICAL CHARACTERISTICS





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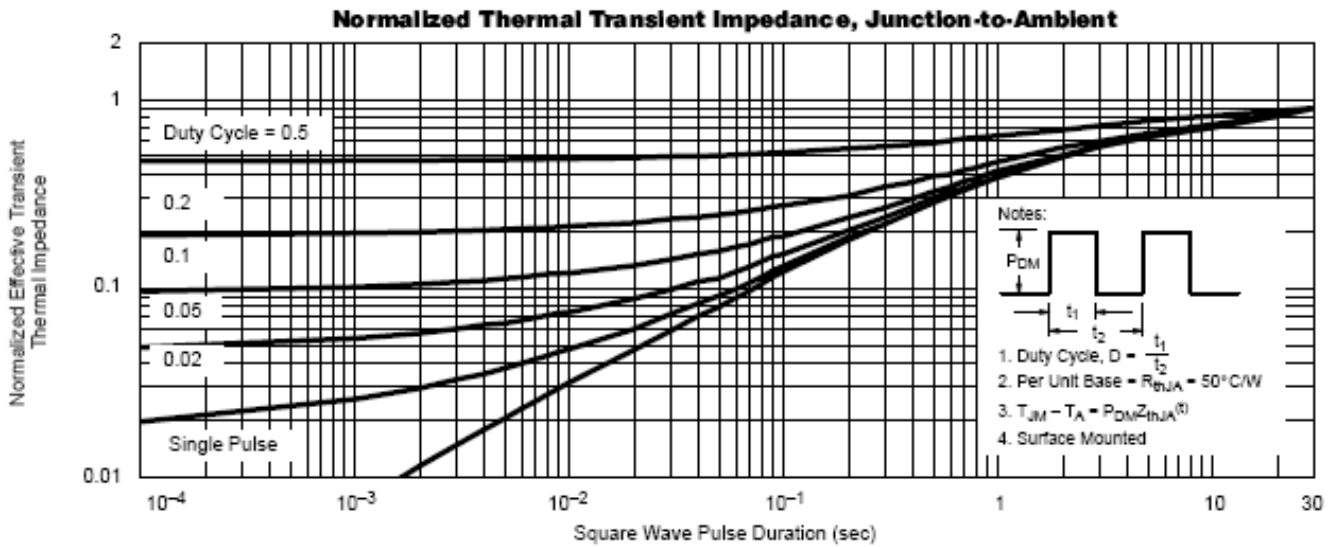
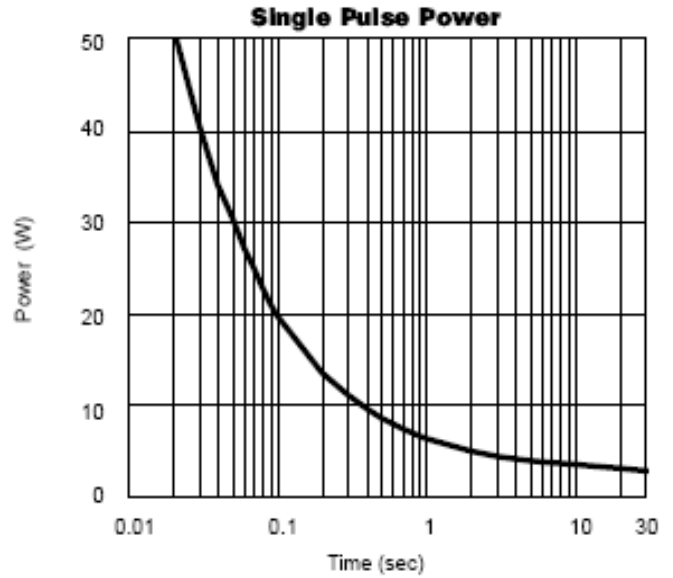
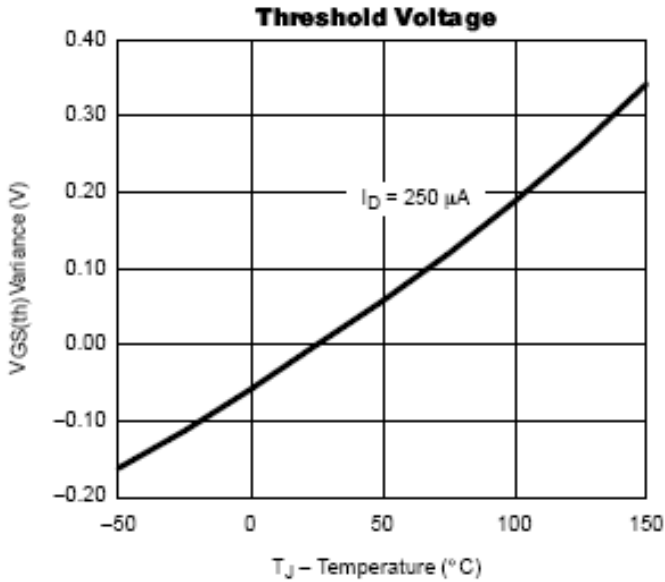
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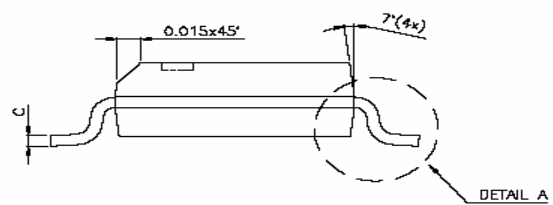
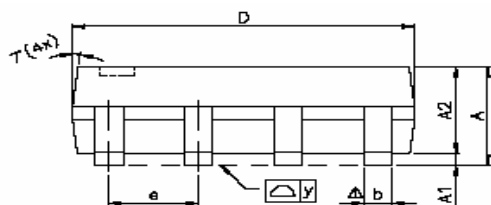
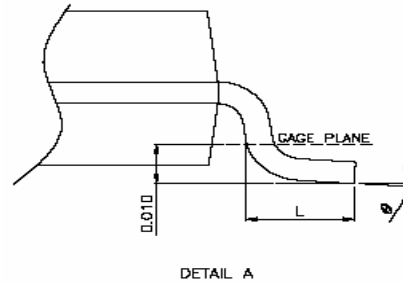
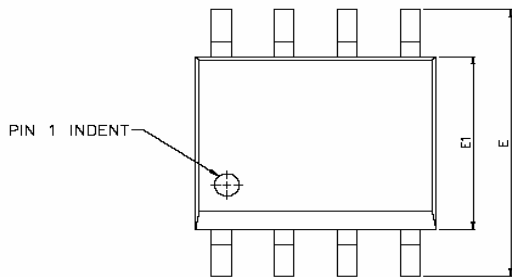
TYPICAL CHARACTERISTICS





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SOP- 8 PACKAGE OUTLINE



| 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 |
| Δ y | — | — | 0.076 | — | — | 0.003 |
| \varnothing | 0° | — | 8° | 0° | — | 8° |



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