



SPP3407D

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP3407D 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.

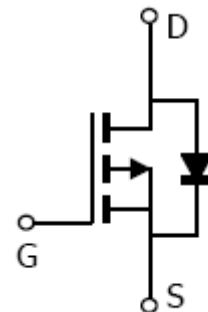
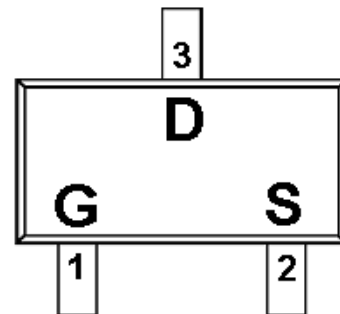
FEATURES

- ◆ $-30V/-4.0A, R_{DS(ON)}=70m\Omega @ V_{GS}=-10V$
- ◆ $-30V/-3.2A, R_{DS(ON)}=95m\Omega @ V_{GS}=-4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23 package design

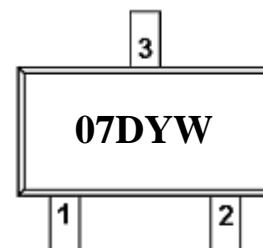
APPLICATIONS

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

PIN CONFIGURATION(SOT-23)



PART MARKING



Y : Year Code
W : Week Code



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PIN DESCRIPTION

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1 | G | Gate |
| 2 | S | Source |
| 3 | D | Drain |

ORDERING INFORMATION

| Part Number | Package | Part Marking |
|----------------|---------|--------------|
| SPP3407DS23RGB | SOT-23 | 07D |

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

※ SPP3407DS23RGB : Tape Reel ; Pb – Free; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

| Parameter | | Symbol | Typical | Unit |
|---|----------------------|------------------|---------|------|
| Drain-Source Voltage | | V _{DSS} | -30 | V |
| Gate –Source Voltage | | V _{GSS} | ±20 | V |
| Continuous Drain Current(T _J =150°C) | T _A =25°C | I _D | -3.6 | A |
| | T _A =70°C | | -3.0 | |
| Pulsed Drain Current | | I _{DM} | -15 | A |
| Continuous Source Current(Diode Conduction) | | I _S | -1.0 | A |
| Power Dissipation | T _A =25°C | P _D | 1.25 | W |
| | T _A =70°C | | 0.8 | |
| Operating Junction Temperature | | T _J | 150 | °C |
| Storage Temperature Range | | T _{STG} | -55/150 | °C |
| Thermal Resistance-Junction to Ambient | | R _{θJA} | 120 | °C/W |



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

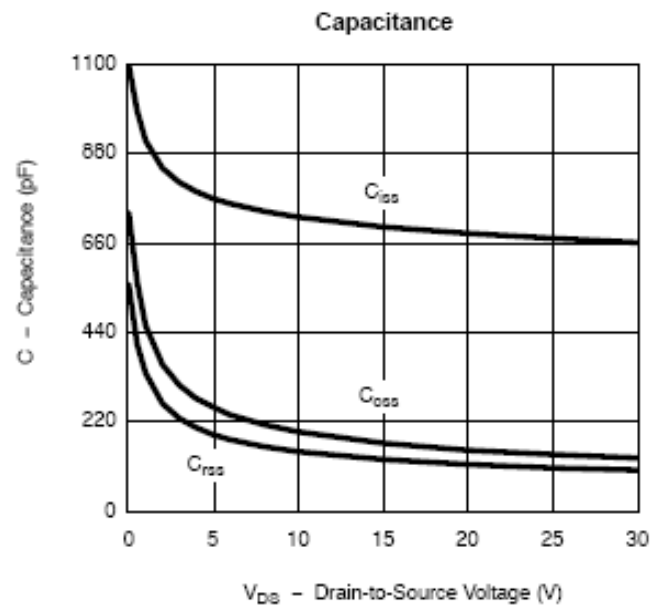
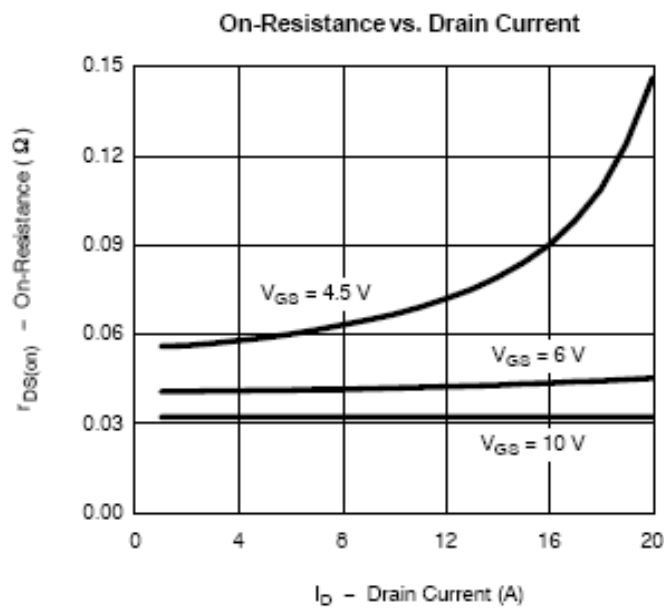
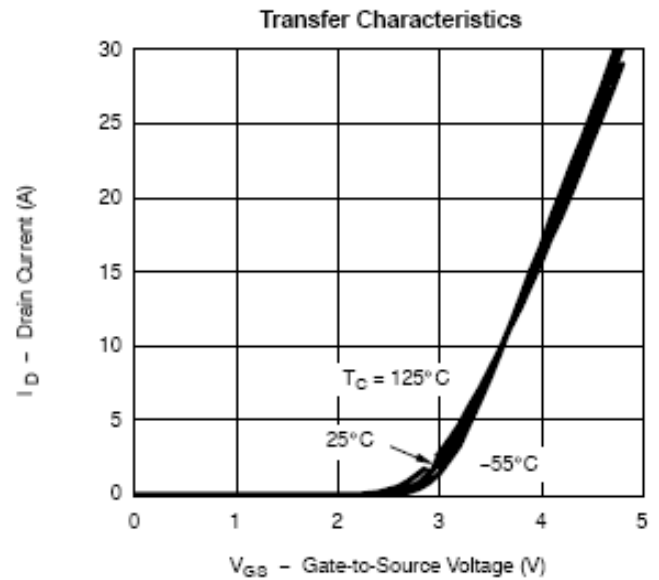
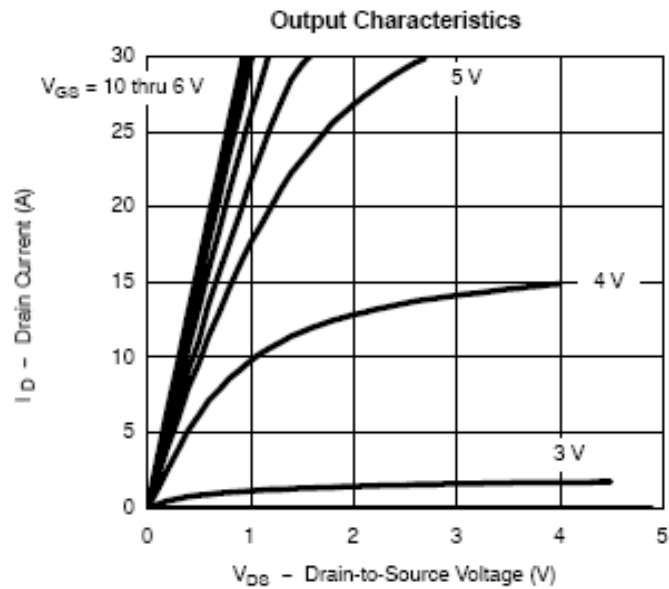
| Parameter | Symbol | Conditions | Min. | Typ | Max. | Unit |
|---------------------------------|----------------------|---|------|-------|-------|------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =-250uA | -30 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =-250uA | -0.8 | | -2.5 | |
| Gate Leakage Current | I _{GSS} | V _{DS} =0V, V _{GS} =±20V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =-24V, V _{GS} =0V | | | -1 | uA |
| | | V _{DS} =-24V, V _{GS} =0V T _J =55°C | | | -10 | |
| On-State Drain Current | I _{D(on)} | V _{DS} ≤ -5V, V _{GS} =-10V | -10 | | | A |
| Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =-10V, I _D =-4.0A | | 0.062 | 0.070 | Ω |
| | | V _{GS} =-4.5V, I _D =-3.2A | | 0.085 | 0.095 | |
| Forward Transconductance | g _{fs} | V _{DS} =-5.0V, I _D =-4.0A | | 10 | | S |
| Diode Forward Voltage | V _{SD} | I _S =-1.0A, V _{GS} =0V | | -0.8 | -1.2 | V |
| Dynamic | | | | | | |
| Total Gate Charge | Q _g | V _{DS} =-15V, V _{GS} =-10V I _D = -3.5A | | 10 | 18 | nC |
| Gate-Source Charge | Q _{gs} | | | 1.6 | | |
| Gate-Drain Charge | Q _{gd} | | | 3.0 | | |
| Input Capacitance | C _{iss} | V _{DS} =-15V, V _{GS} =0V f=1MHz | | 450 | | pF |
| Output Capacitance | C _{oss} | | | 95 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 55 | | |
| Turn-On Time | t _{d(on)} | V _{DD} =-15V, R _L =15Ω I _D =-1.0A, V _{GEN} =-10V R _G =6Ω | | 8 | 18 | nS |
| | t _r | | | 8 | 18 | |
| Turn-Off Time | t _{d(off)} | | | 25 | 50 | |
| | t _f | | | 25 | 35 | |



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TYPICAL CHARACTERISTICS

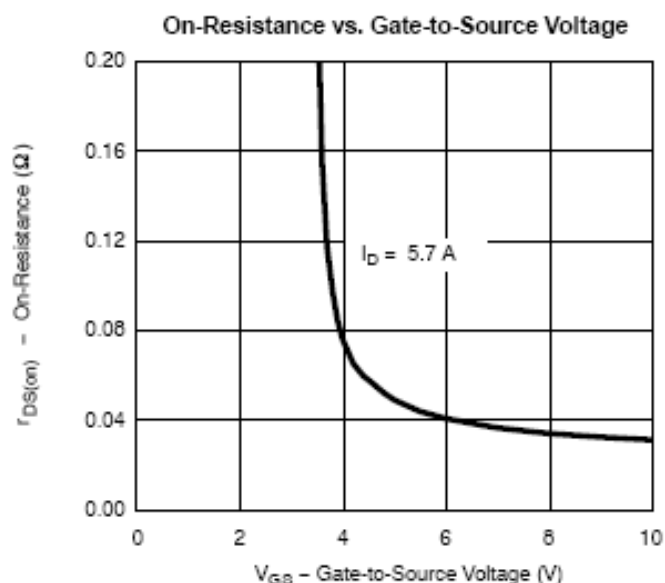
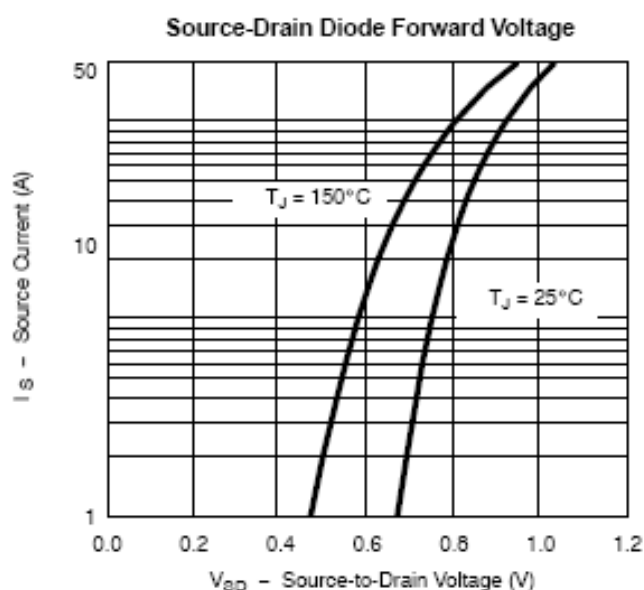
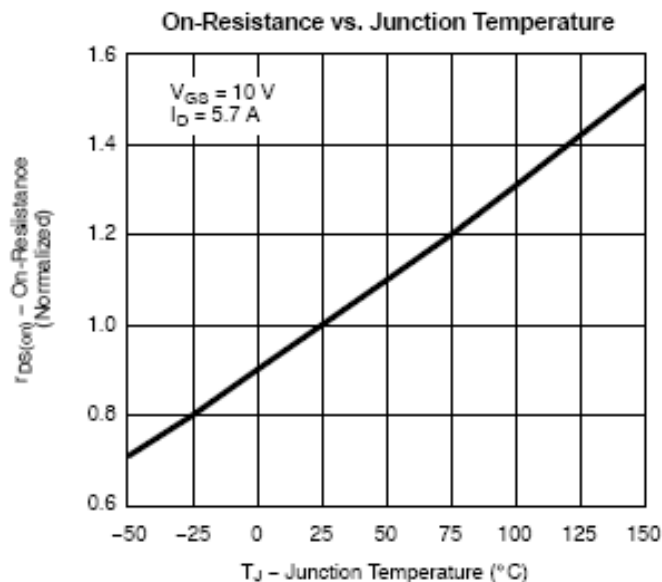
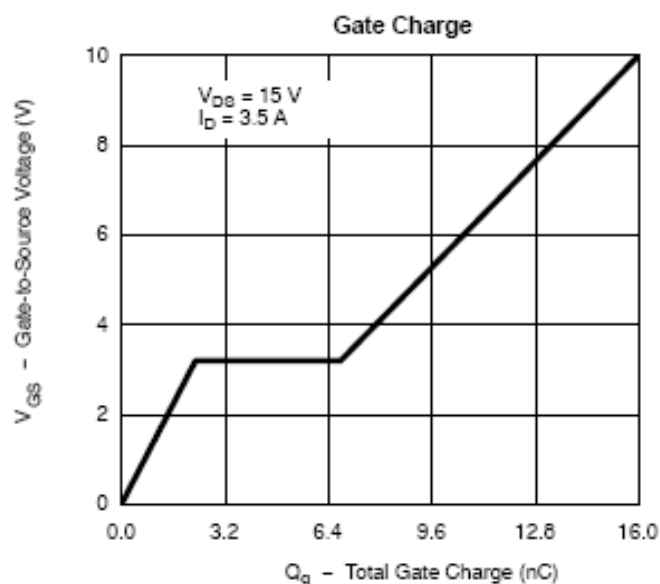




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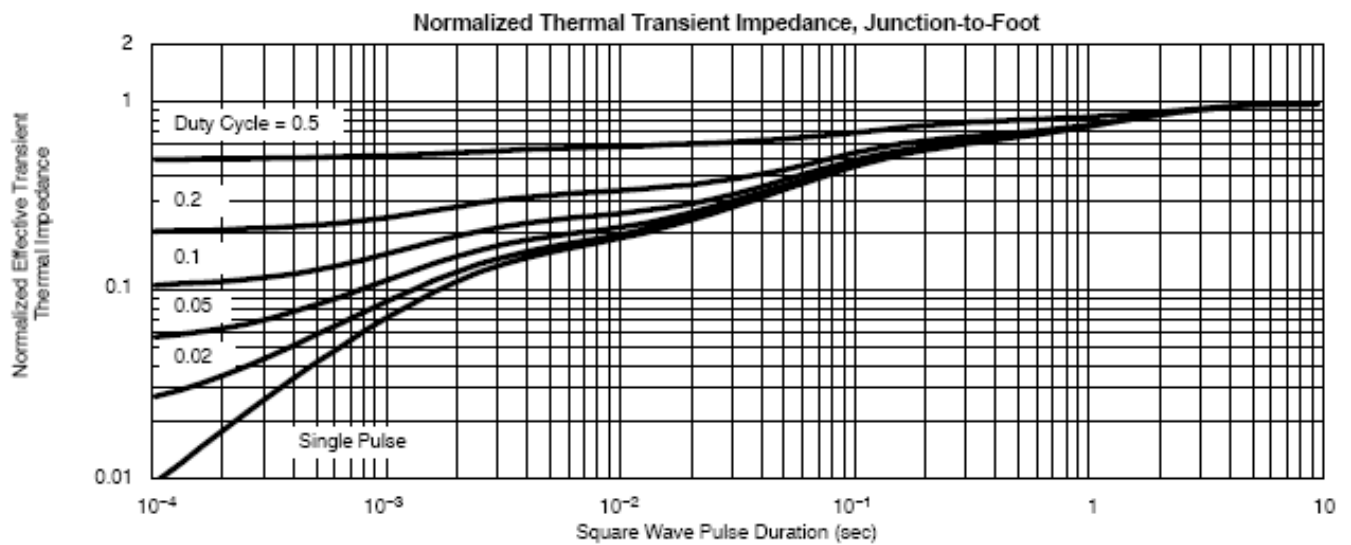
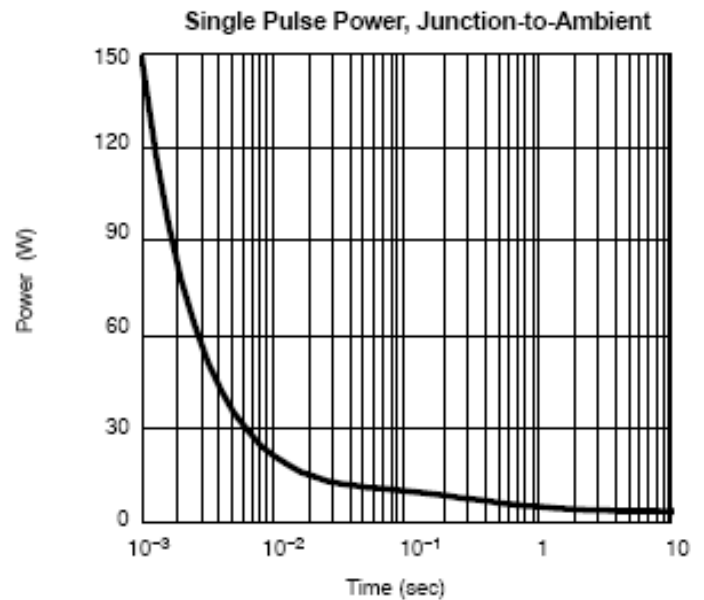
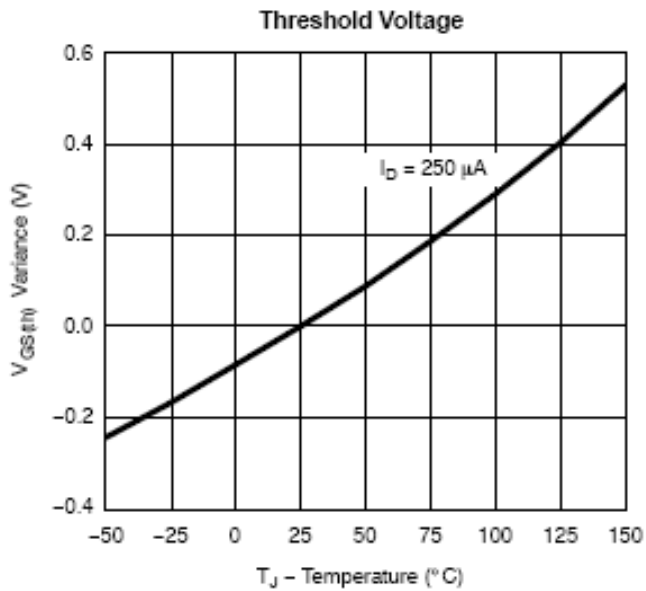




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TYPICAL CHARACTERISTICS





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