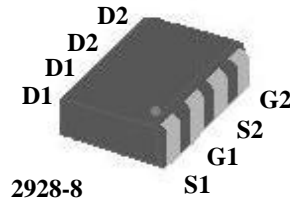




- ▼ Capable of 2.5V gate drive
- ▼ Lower on-resistance
- ▼ Surface mount package

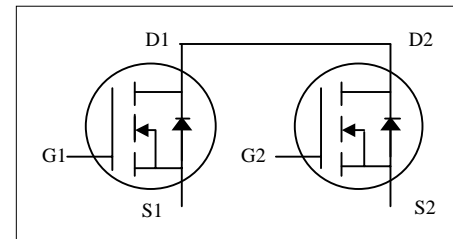


| | |
|--------------|--------------|
| BV_{DSS} | 30V |
| $R_{DS(ON)}$ | 40m Ω |
| I_D | 4.8A |

Description

Advanced Power MOSFETs utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.

The 2928-8 J-lead package provides good on-resistance performance and space saving like TSOP-6.



Absolute Maximum Ratings

| Symbol | Parameter | Rating | Units |
|--------------------------|---------------------------------------|------------|---------------|
| V_{DS} | Drain-Source Voltage | 30 | V |
| V_{GS} | Gate-Source Voltage | ± 12 | V |
| $I_D @ T_A = 25^\circ C$ | Continuous Drain Current ³ | 4.8 | A |
| $I_D @ T_A = 70^\circ C$ | Continuous Drain Current ³ | 3.8 | A |
| I_{DM} | Pulsed Drain Current ¹ | 20 | A |
| $P_D @ T_A = 25^\circ C$ | Total Power Dissipation | 1.39 | W |
| | Linear Derating Factor | 0.01 | W/ $^\circ C$ |
| T_{STG} | Storage Temperature Range | -55 to 150 | $^\circ C$ |
| T_J | Operating Junction Temperature Range | -55 to 150 | $^\circ C$ |

Thermal Data

| Symbol | Parameter | Value | Unit |
|-------------|---|-------|--------------|
| R_{thj-a} | Maximum Thermal Resistance, Junction-ambient ³ | 90 | $^\circ C/W$ |



AP2422GY

Electrical Characteristics @T_j=25°C(unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|-------------------------------------|---|--|------|------|------|-------|
| BV _{DSS} | Drain-Source Breakdown Voltage | V _{GS} =0V, I _D =250uA | 30 | - | - | V |
| ΔBV _{DSS} /ΔT _j | Breakdown Voltage Temperature Coefficient | Reference to 25°C, I _D =1mA | - | 0.02 | - | V/°C |
| R _{DS(ON)} | Static Drain-Source On-Resistance ² | V _{GS} =10V, I _D =5A | - | - | 32 | mΩ |
| | | V _{GS} =4.5V, I _D =4A | - | - | 40 | mΩ |
| | | V _{GS} =2.5V, I _D =2A | - | - | 60 | mΩ |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =V _{GS} , I _D =250uA | 0.5 | - | 1.2 | V |
| g _{fs} | Forward Transconductance | V _{DS} =5V, I _D =4A | - | 9 | - | S |
| I _{DSS} | Drain-Source Leakage Current (T _j =25°C) | V _{DS} =30V, V _{GS} =0V | - | - | 1 | uA |
| | Drain-Source Leakage Current (T _j =70°C) | V _{DS} =24V, V _{GS} =0V | - | - | 10 | uA |
| I _{GSS} | Gate-Source Leakage | V _{GS} =±12V | - | - | ±100 | nA |
| Q _g | Total Gate Charge ² | I _D =4A | - | 8 | 13 | nC |
| Q _{gs} | Gate-Source Charge | V _{DS} =25V | - | 1.3 | - | nC |
| Q _{gd} | Gate-Drain ("Miller") Charge | V _{GS} =4.5V | - | 4 | - | nC |
| t _{d(on)} | Turn-on Delay Time ² | V _{DS} =15V | - | 10 | - | ns |
| t _r | Rise Time | I _D =1A | - | 11 | - | ns |
| t _{d(off)} | Turn-off Delay Time | R _G =3.3Ω, V _{GS} =5V | - | 17 | - | ns |
| t _f | Fall Time | R _D =15Ω | - | 5 | - | ns |
| C _{iss} | Input Capacitance | V _{GS} =0V | - | 480 | 770 | pF |
| C _{oss} | Output Capacitance | V _{DS} =25V | - | 90 | - | pF |
| C _{rss} | Reverse Transfer Capacitance | f=1.0MHz | - | 70 | - | pF |
| R _g | Gate Resistance | f=1.0MHz | - | 1.5 | 2.3 | Ω |

Source-Drain Diode

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|-----------------|------------------------------------|---|------|------|------|-------|
| V _{SD} | Forward On Voltage ² | I _S =1.1A, V _{GS} =0V | - | - | 1.3 | V |
| t _{rr} | Reverse Recovery Time ² | I _S =4A, V _{GS} =0V, | - | 18 | - | ns |
| Q _{rr} | Reverse Recovery Charge | dI/dt=100A/μs | - | 10 | - | nC |

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in² copper pad of FR4 board , t <5sec ; 155°C/W at steady state.

THIS PRODUCT IS AN ELECTROSTATIC SENSITIVE, PLEASE HANDLE WITH CAUTION.

THIS PRODUCT HAS BEEN QUALIFIED FOR CONSUMER MARKET. APPLICATIONS OR USES AS CRITERIAL COMPONENT IN LIFE SUPPORT DEVICE OR SYSTEM ARE NOT AUTHORIZED.

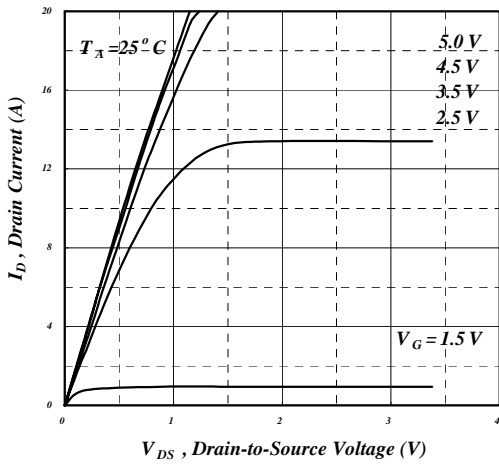


Fig 1. Typical Output Characteristics

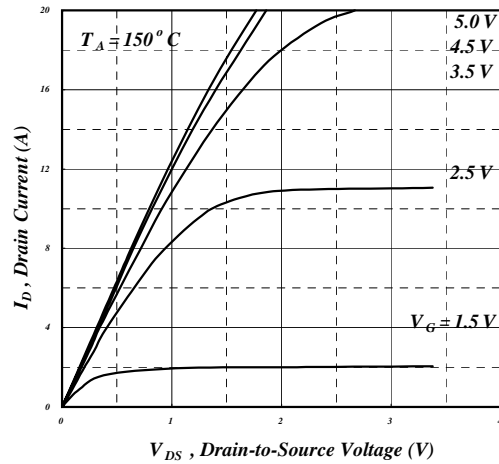


Fig 2. Typical Output Characteristics

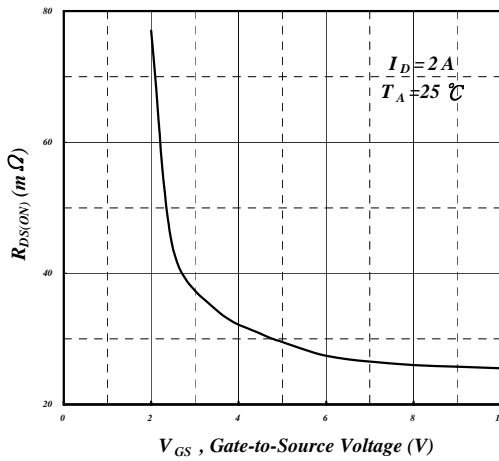


Fig 3. On-Resistance v.s. Gate Voltage

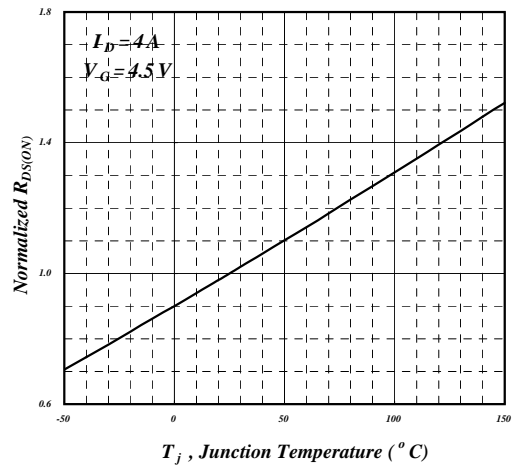


Fig 4. Normalized On-Resistance v.s. Junction Temperature

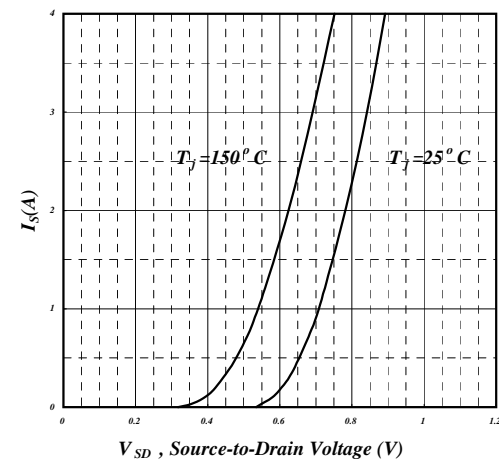


Fig 5. Forward Characteristic of Reverse Diode

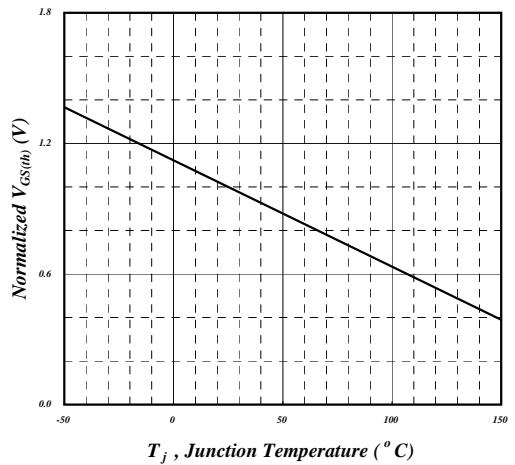


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

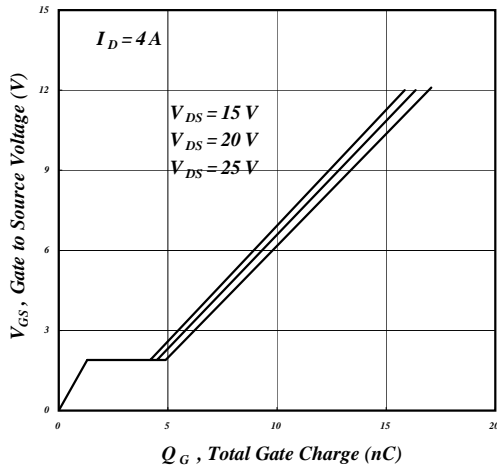


Fig 7. Gate Charge Characteristics

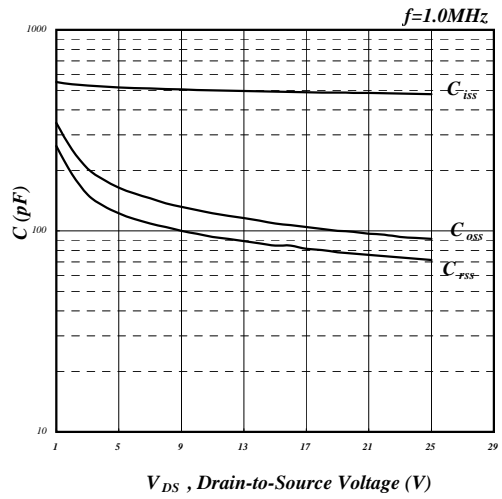


Fig 8. Typical Capacitance Characteristics

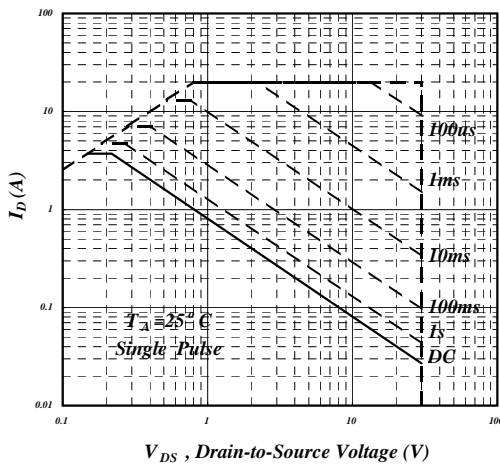


Fig 9. Maximum Safe Operating Area

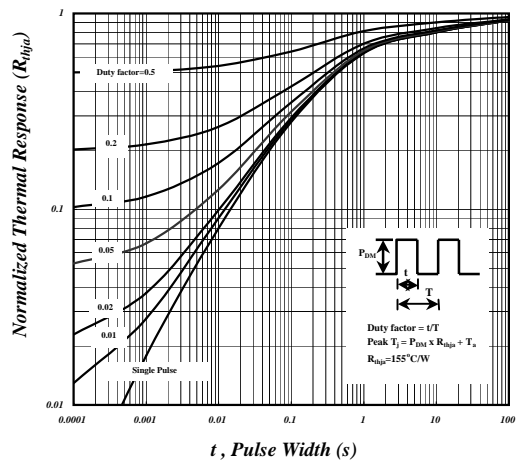


Fig 10. Effective Transient Thermal Impedance

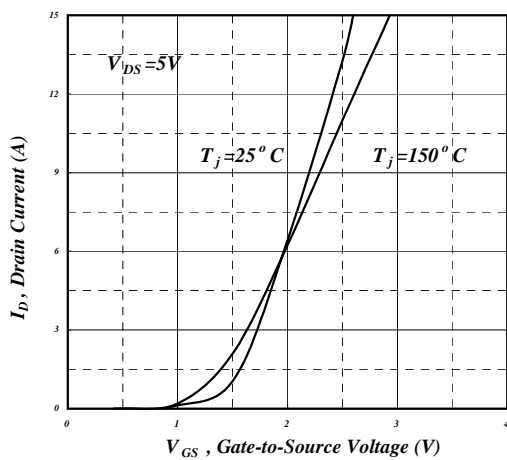


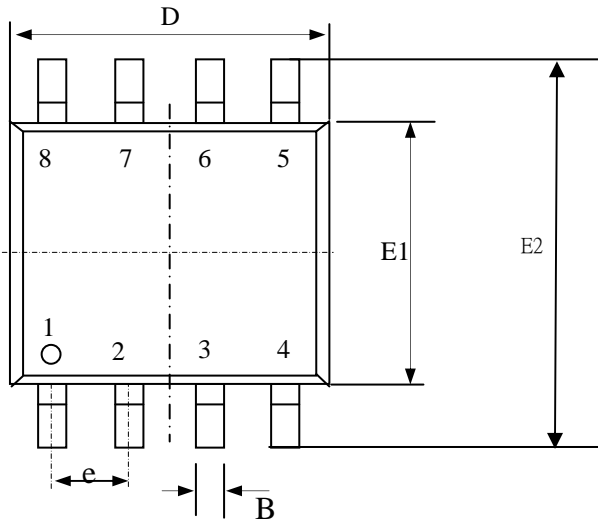
Fig 11. Transfer Characteristics



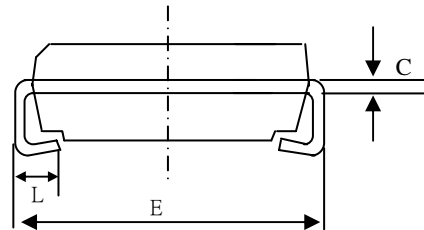
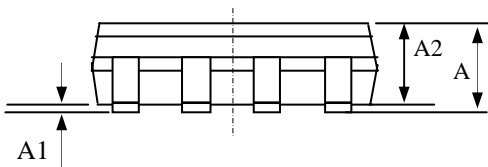
Fig 12. Gate Charge Waveform



Package Outline : 2928-8

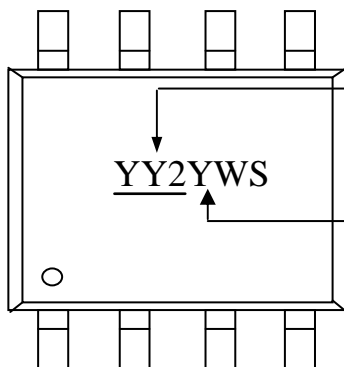


| SYMBOLS | Millimeters | | |
|---------|-------------|------|------|
| | MIN | NOM | MAX |
| E | 2.50 | ---- | 3.00 |
| E1 | 2.30 | 2.40 | 2.50 |
| E2 | 2.65 | 2.85 | 3.05 |
| L | 0.30 | 0.45 | 0.60 |
| A | 0.93 | --- | 1.10 |
| A1 | 0.01 | --- | 0.10 |
| A2 | 0.92 | --- | 1.00 |
| D | 2.95 | 3.05 | 3.10 |
| B | 0.25 | 0.32 | 0.40 |
| C | 0.10 | 0.15 | 0.20 |
| e | 0.65BSC | | |



- 1.All Dimensions Are in Millimeters.
- 2.Dimension Does Not Include Mold Protrusions.

Part Marking Information & Packing : 2928-8



Part Number

YY2YWS

Date Code (YWS)

Y : Last Digit Of The Year

W : Week

S : Sequence