



FW156 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- For DC / DC converters, Motor drives, Inverters.
- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|--|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -60 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | -3.5 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -14 | A |
| Allowable Power Dissipation | P _D | Mounted on a ceramic board (1200mm ² ×0.8mm) 1unit, PW≤10s | 2.0 | W |
| Total Dissipation | P _T | Mounted on a ceramic board (1200mm ² ×0.8mm), PW≤10s | 2.3 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|---|---------|-----|------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V _{(BR)DSS} | I _D =-1mA, V _{GS} =0 | -60 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-60V, V _{GS} =0 | | | -1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} = ±16V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-10V, I _D =-1mA | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-10V, I _D =-2A | 3 | 4.6 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-2A, V _{GS} =-10V | | 110 | 145 | mΩ |
| | R _{DS(on)2} | I _D =-2A, V _{GS} =-4V | | 150 | 210 | mΩ |
| Input Capacitance | C _{iss} | V _{DS} =-20V, f=1MHz | | 990 | | pF |
| Output Capacitance | C _{oss} | V _{DS} =-20V, f=1MHz | | 110 | | pF |
| Reverse Transfer Capacitance | C _{rss} | V _{DS} =-20V, f=1MHz | | 76 | | pF |

Marking : W156

Continued on next page.

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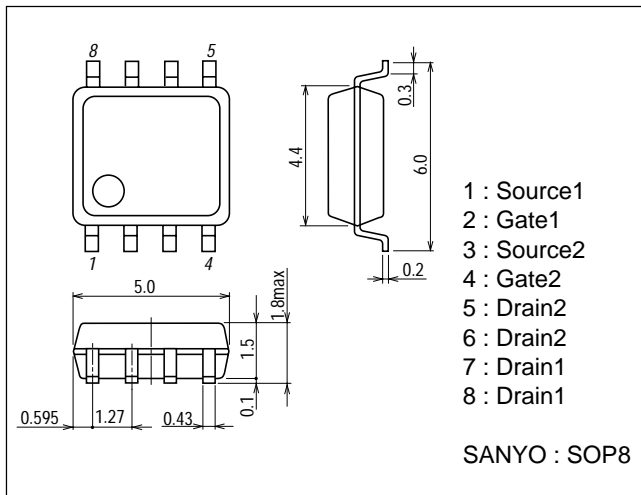
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|---------------------------------------|---------|-------|------|------|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 12 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 50 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 100 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 65 | | ns |
| Total Gate Charge | Qg | $V_{DS}=-30V, V_{GS}=-10V, I_D=-3.5A$ | | 22 | | nC |
| Gate-to-Source Charge | Qgs | $V_{DS}=-30V, V_{GS}=-10V, I_D=-3.5A$ | | 4 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | $V_{DS}=-30V, V_{GS}=-10V, I_D=-3.5A$ | | 4 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=-3.5A, V_{GS}=0$ | | -0.86 | -1.2 | V |

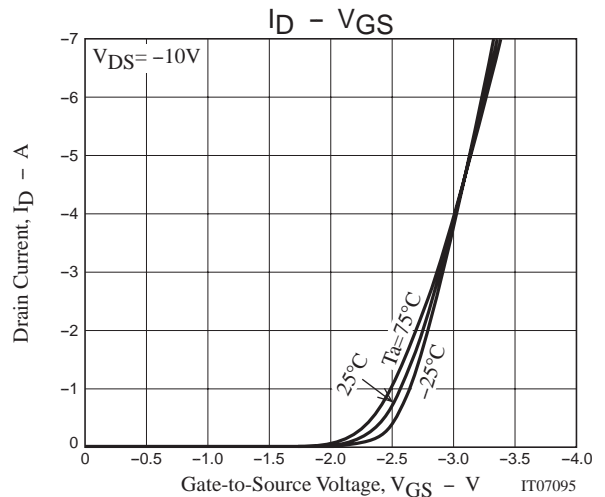
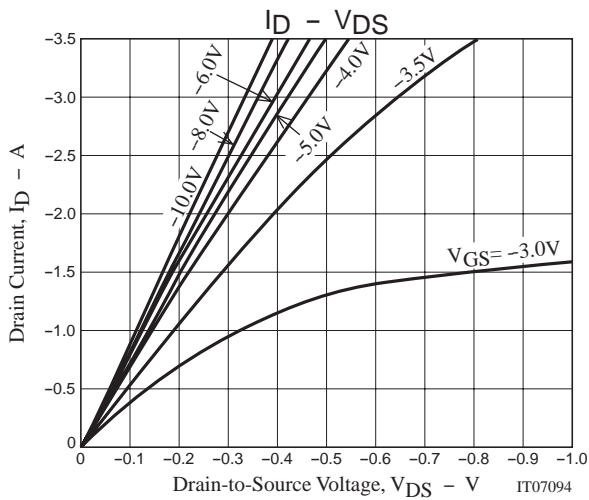
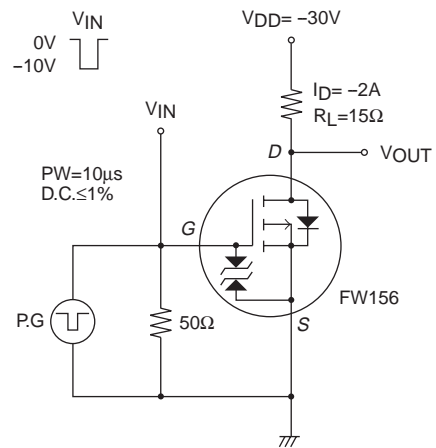
Package Dimensions

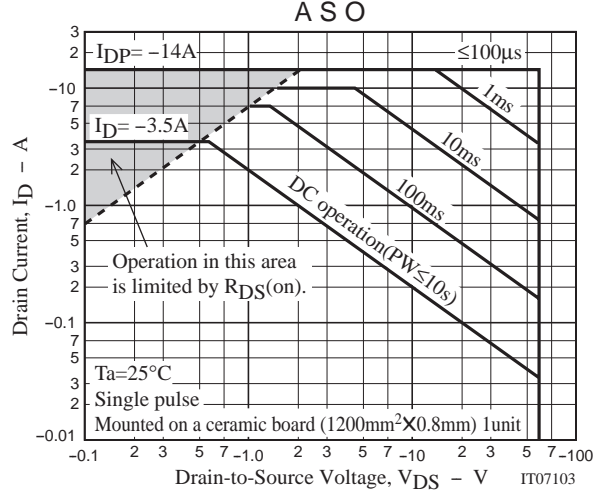
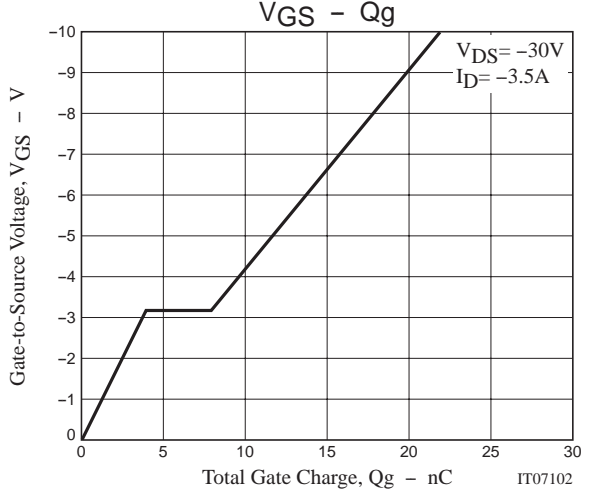
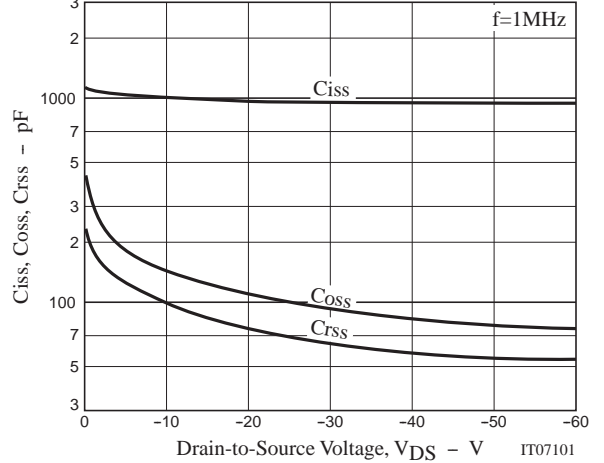
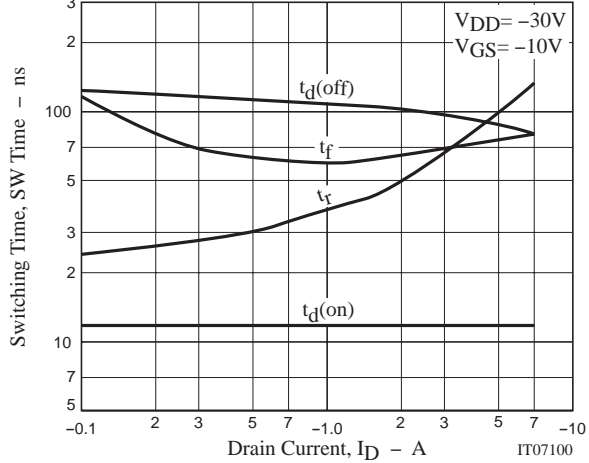
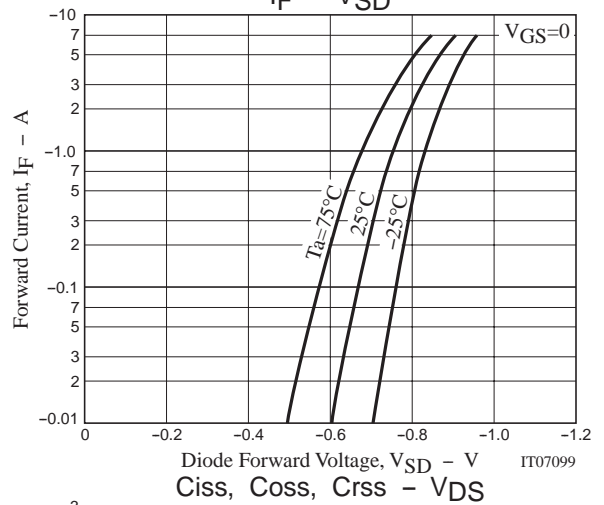
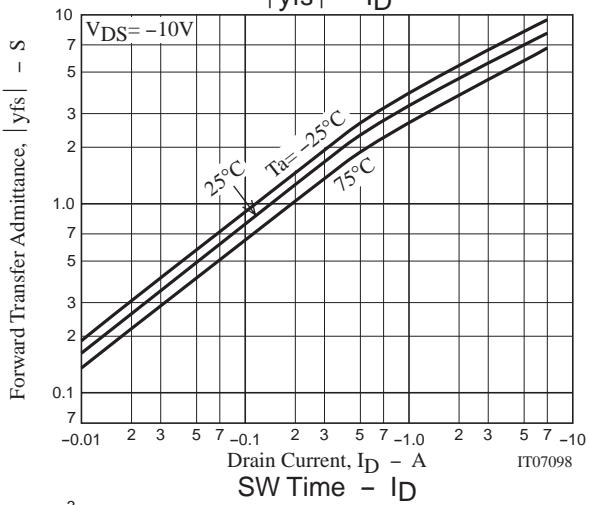
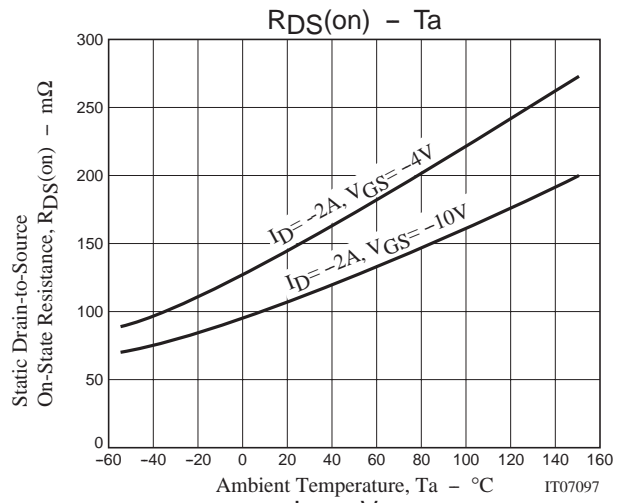
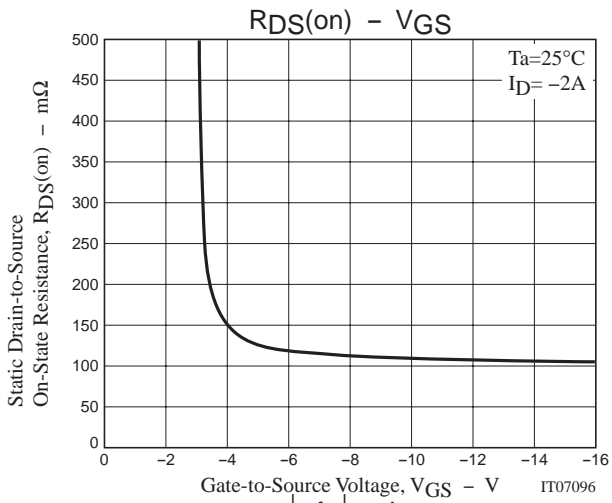
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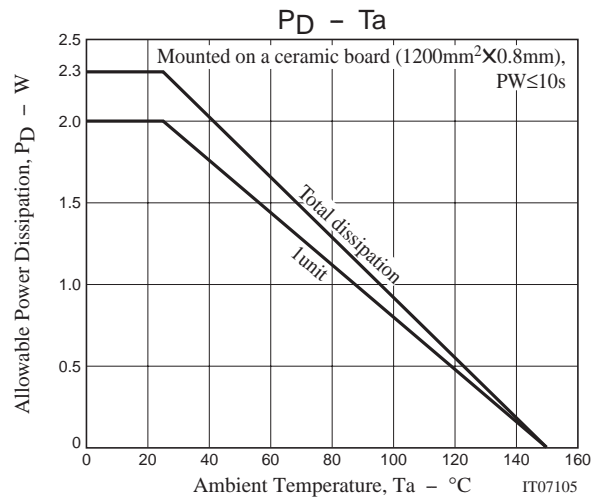
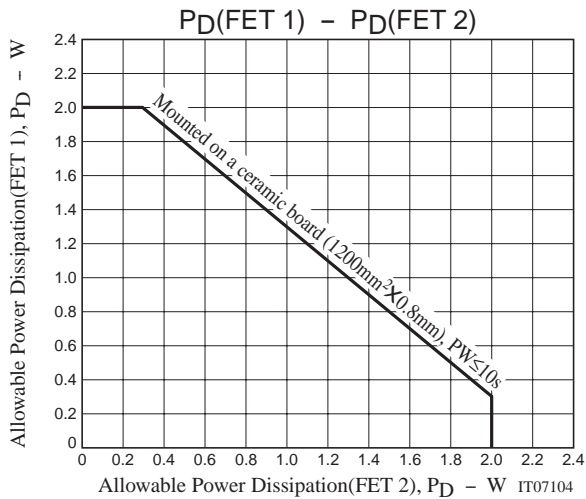
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Switching Time Test Circuit







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