



SANYO Semiconductors

DATA SHEET

P-Channel Silicon MOSFET

FW156 — 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

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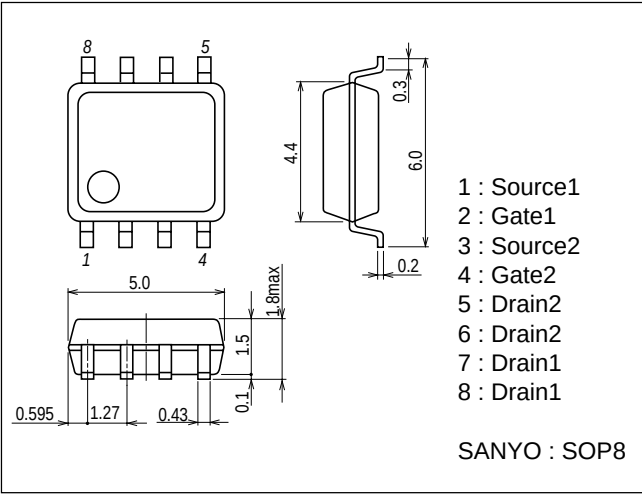
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		12		ns
Rise Time	t_r	See specified Test Circuit.		50		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		100		ns
Fall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

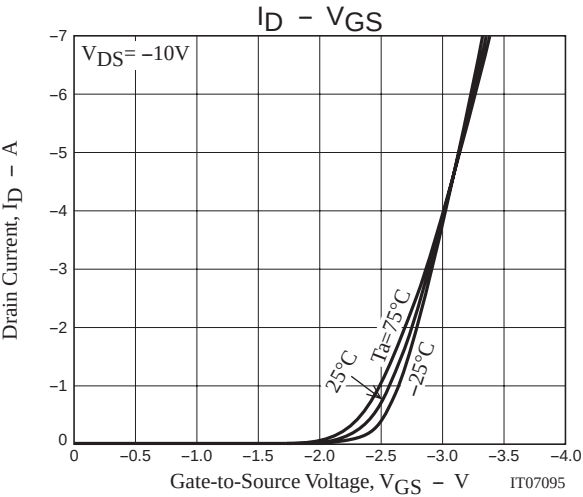
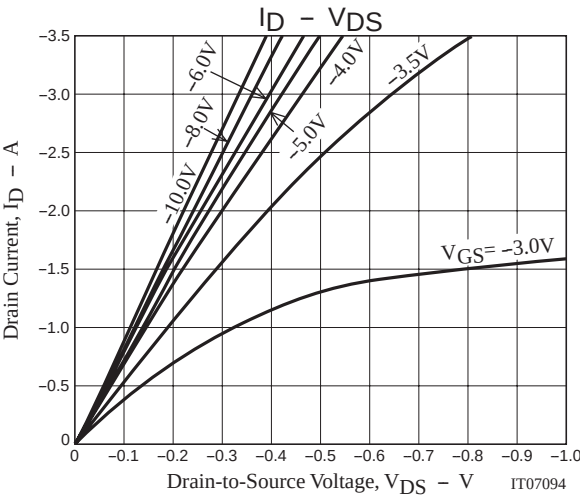
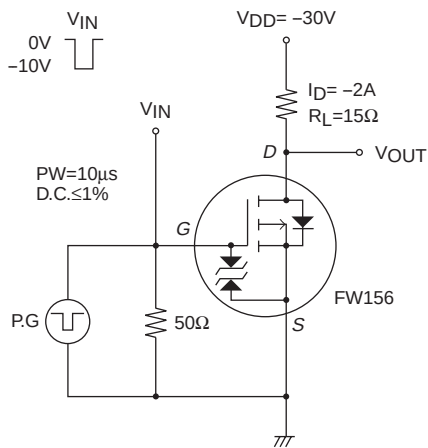
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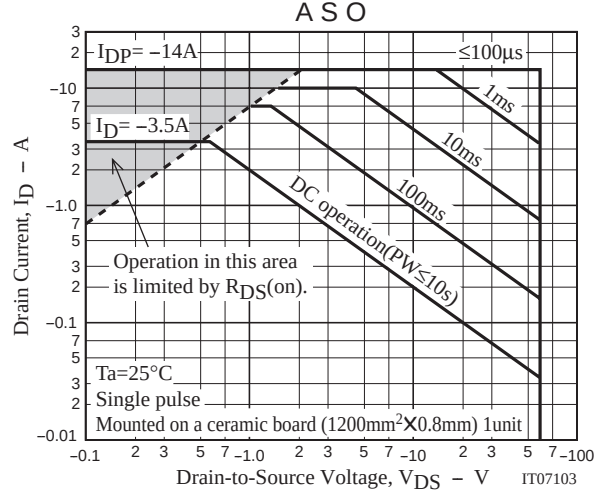
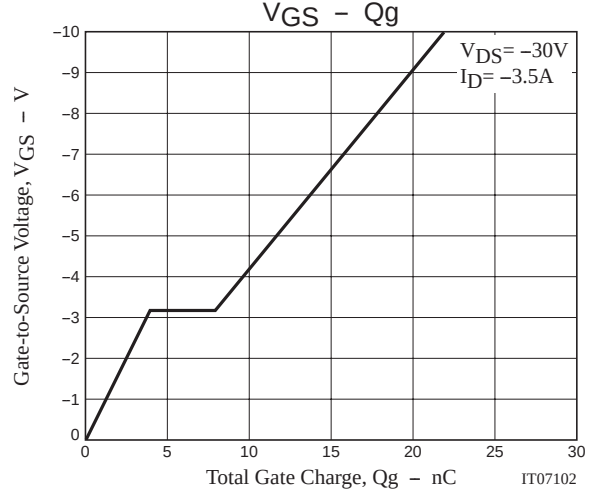
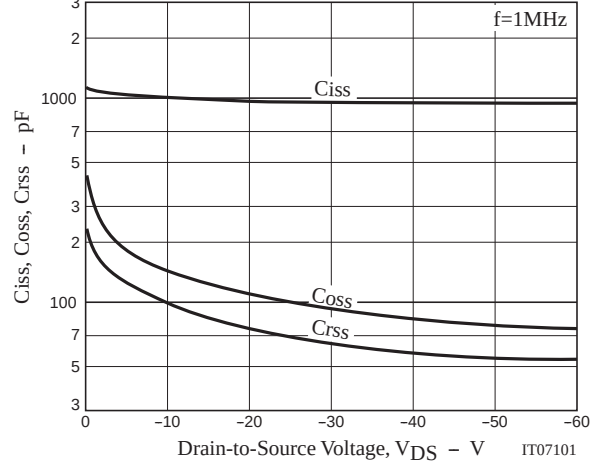
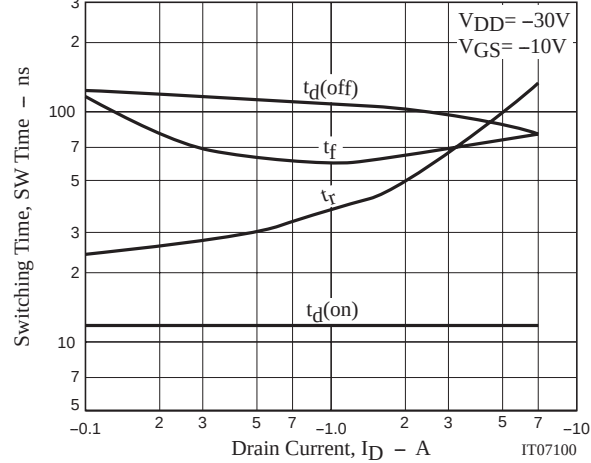
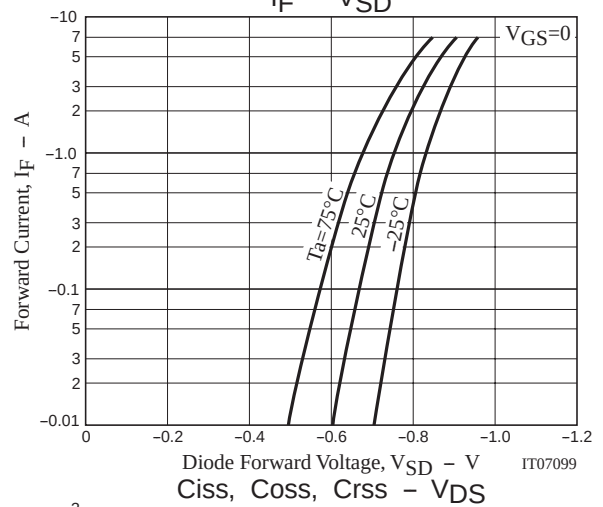
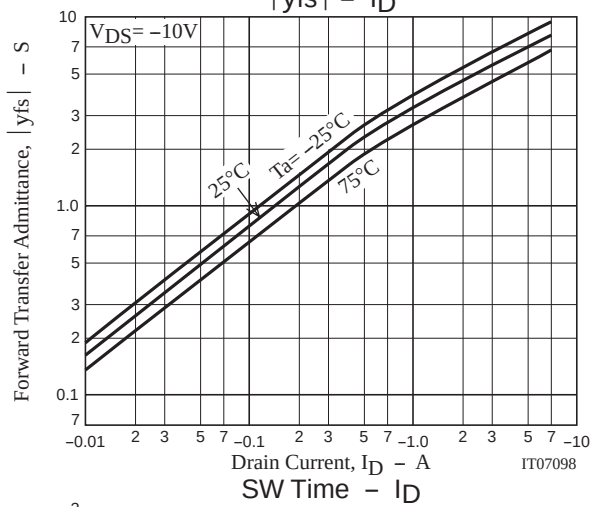
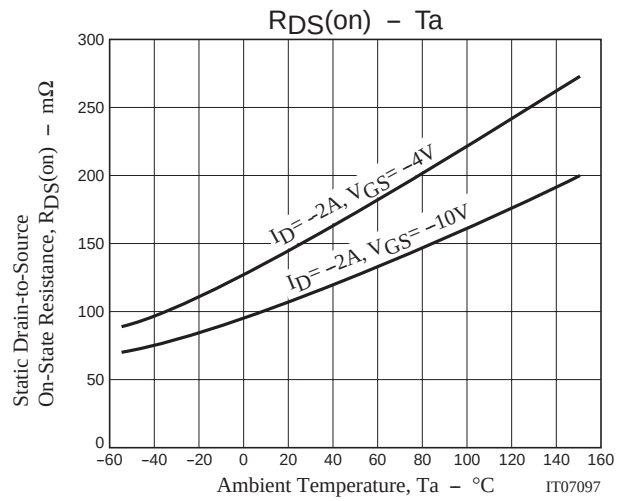
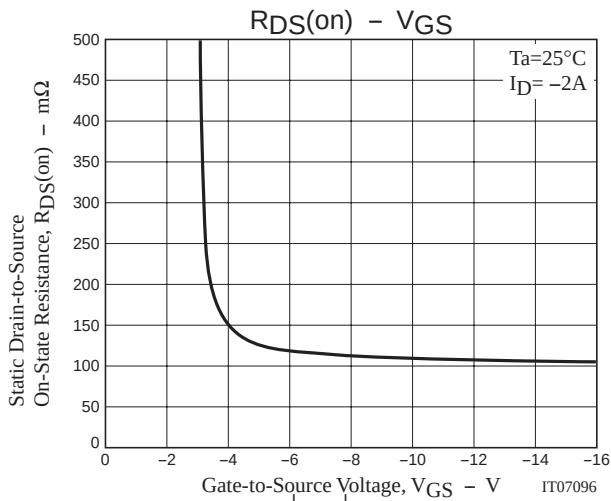
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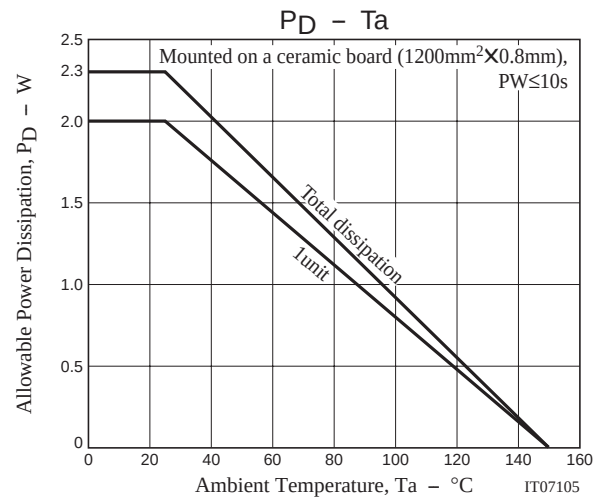
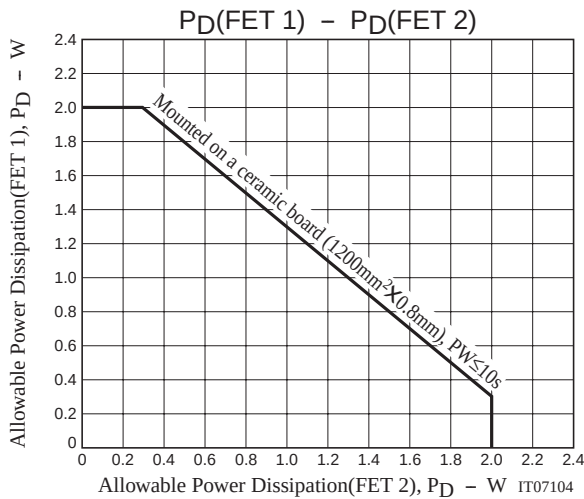
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Switching Time Test Circuit







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