

Ordering number:ENN5991A

P-Channel Silicon MOSFET



**FSS104**

**DC/DC Converter Applications**

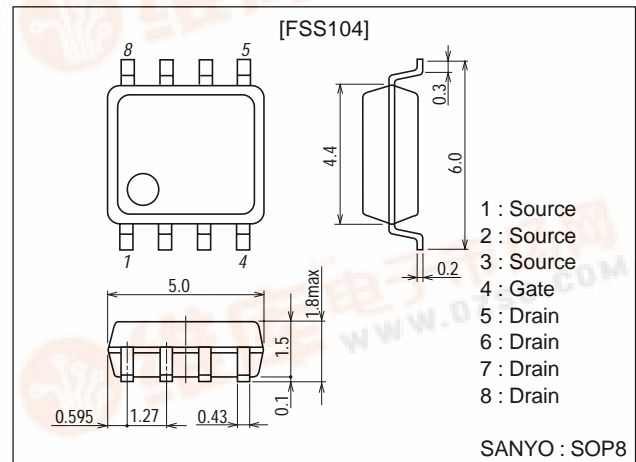
**Features**

- Low ON resistance.
- Ultrahigh-speed switching.
- 4V drive.

**Package Dimensions**

unit:mm

2116



**Specifications**

**Absolute Maximum Ratings** at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-6	A
Drain Current (pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-32	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1200mm²×0.8mm)	2.0	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.0		-2.5	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-6A	6	9		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-6A, V <sub>GS</sub> =-10V		30	38	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-3A, V <sub>GS</sub> =-4V		62	85	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		1100		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		640		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		310		pF

Marking : S104

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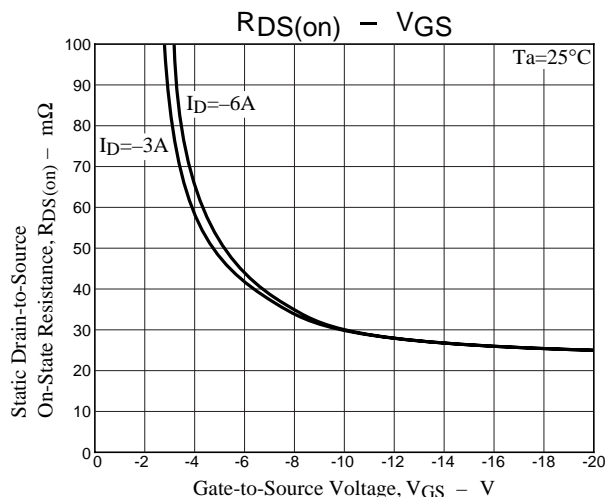
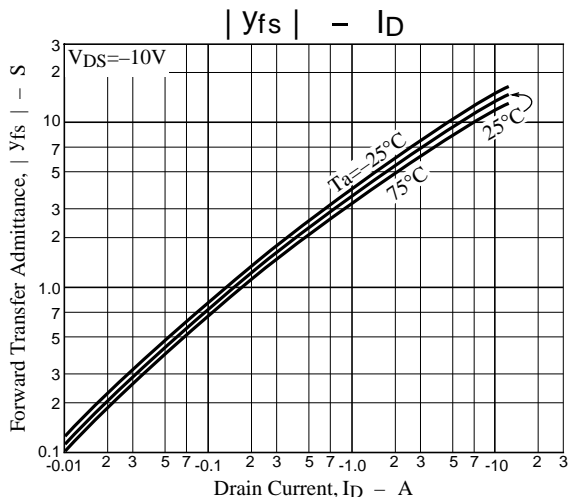
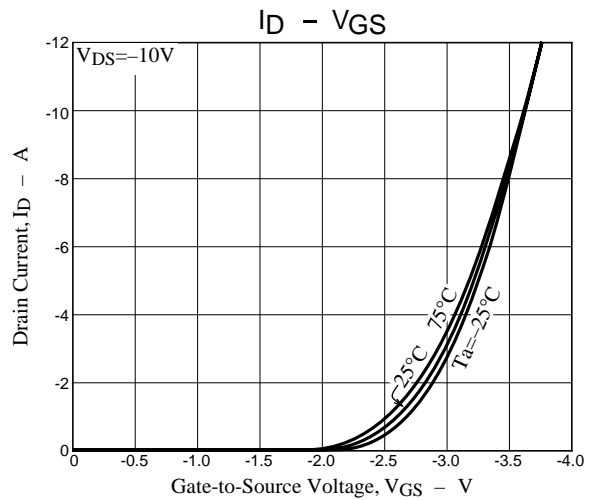
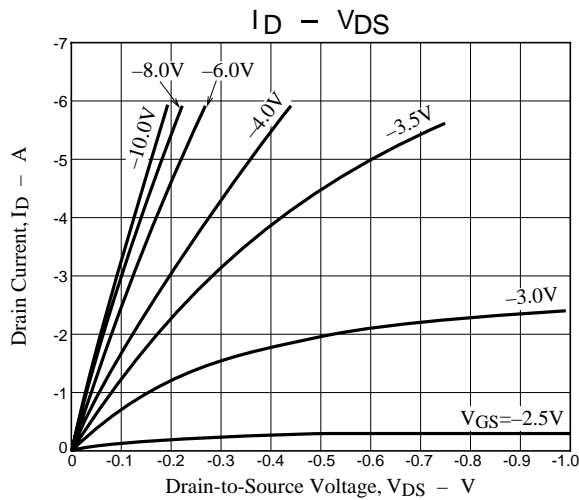
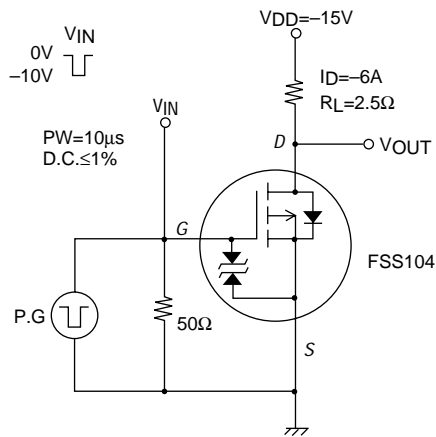


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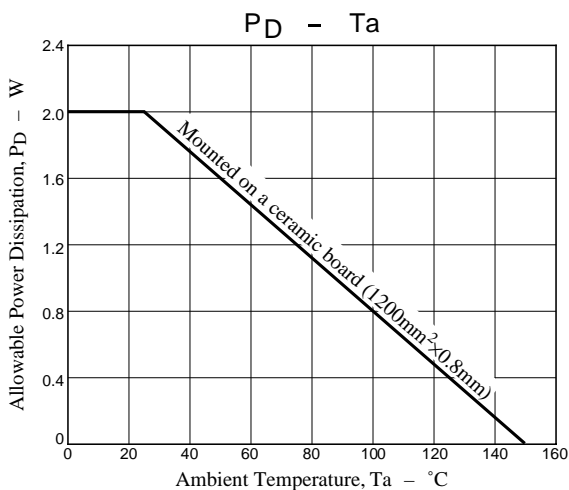
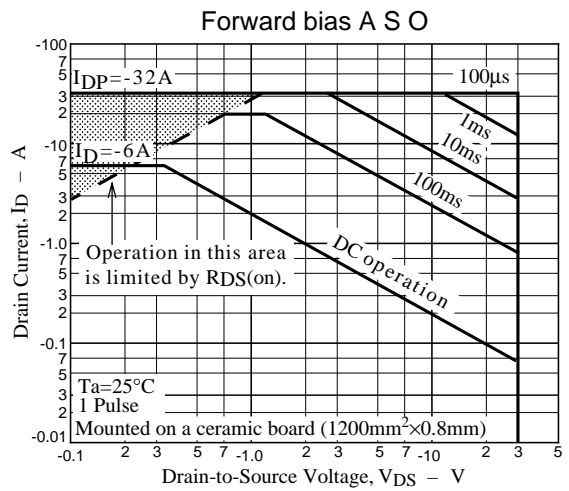
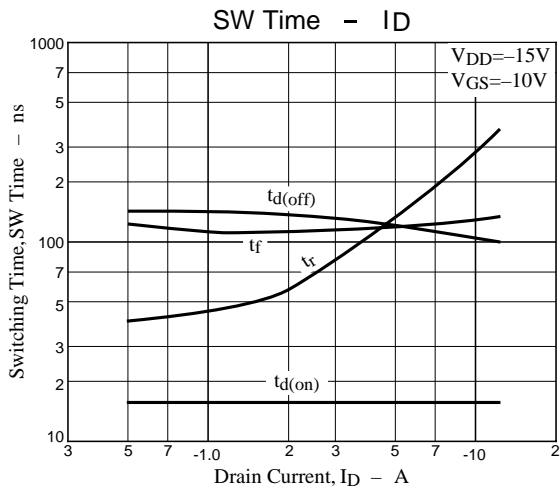
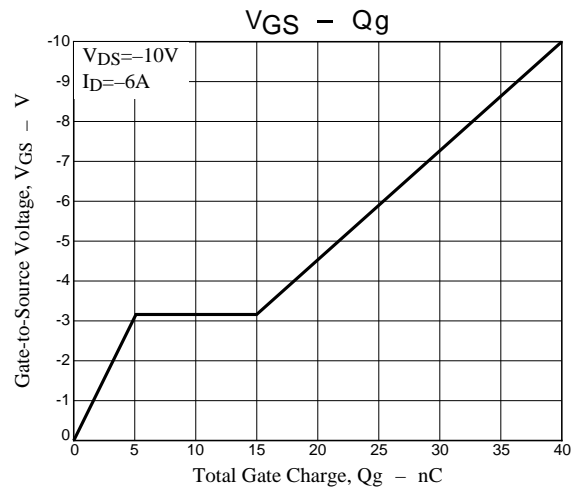
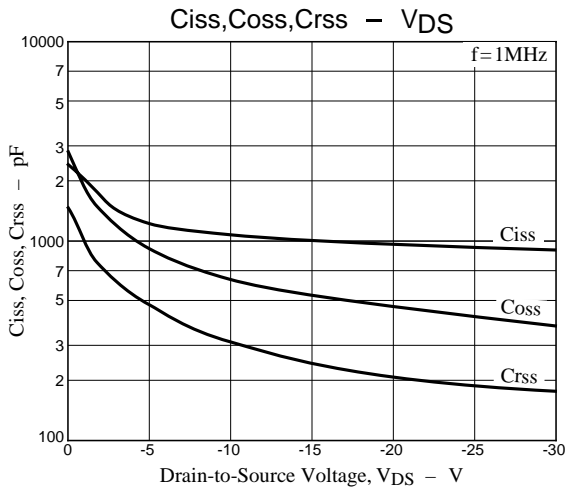
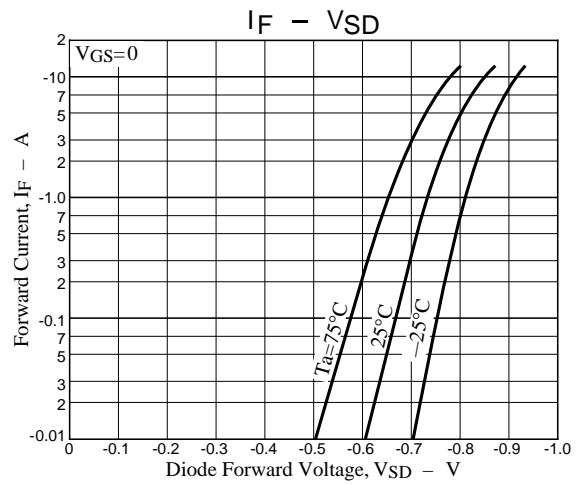
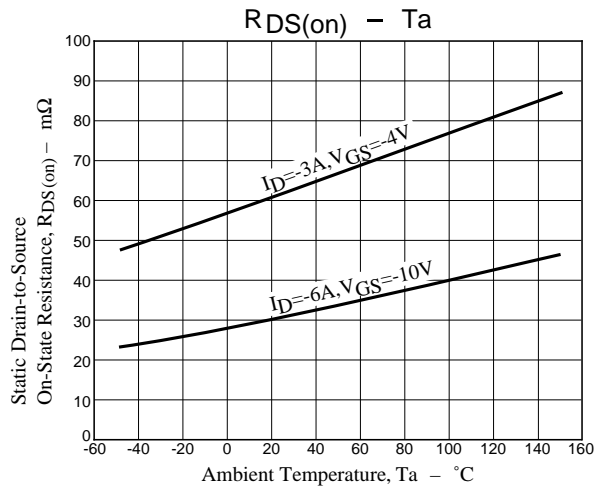
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		17		ns
Rise Time	$t_r$	See specified Test Circuit		170		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		130		ns
Fall Time	$t_f$	See specified Test Circuit		135		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-6A$		40		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-6A$		5		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-6A$		10		nC
Diode Forward Voltage	VSD	$I_S=-6A, V_{GS}=0$		-0.81	-1.5	V

## Switching Time Test Circuit



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