

Ordering number:ENN6400

P-Channel Silicon MOSFET



FSS138

DC/DC Converter Applications

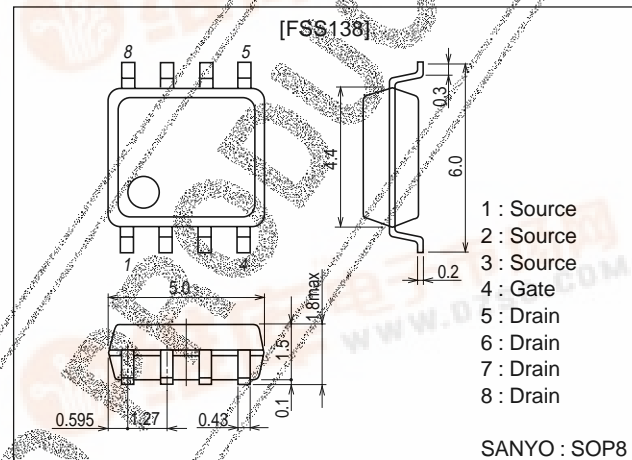
Features

- 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 _{DSS}		-30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-11	A
Drain Current (pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-52	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1200mm ² ×0.8mm)	2.0	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	-30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, 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	-1.0		-2.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-11A	17	25		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-11A, V _{GS} =-10V		11	15	mΩ
	R _{DS(on)2}	I _D =-4A, V _{GS} =-4.5V		15	21	mΩ
	R _{DS(on)3}	I _D =-4A, V _{GS} =-4V		16	23	mΩ

Marking :S138

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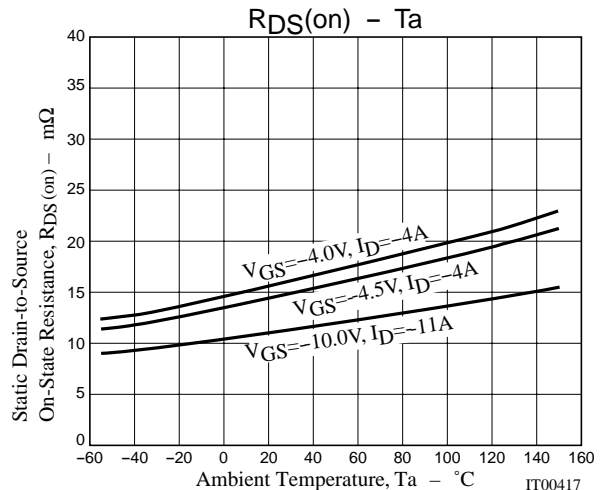
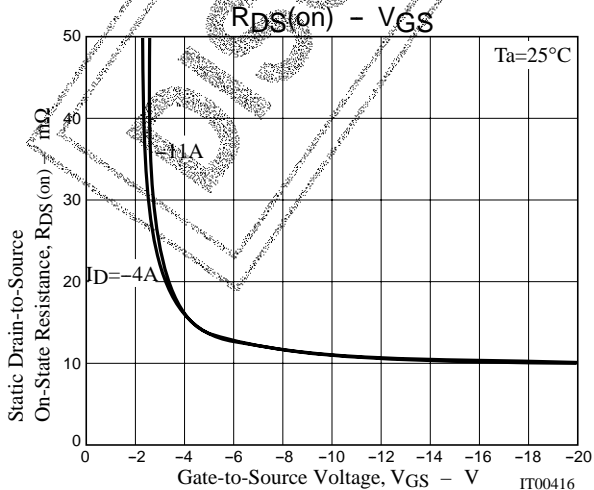
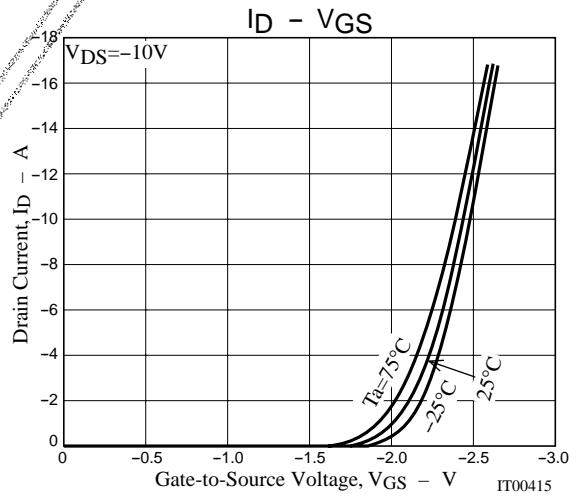
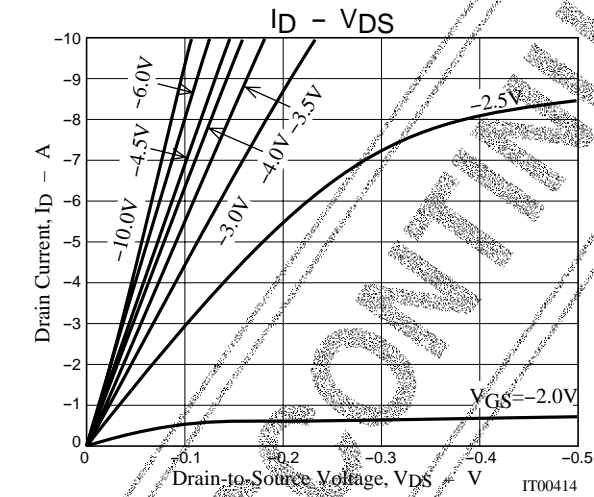
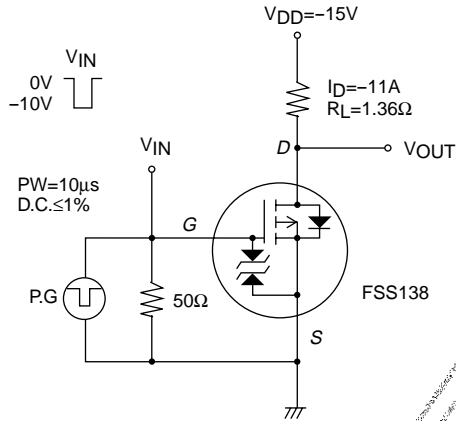


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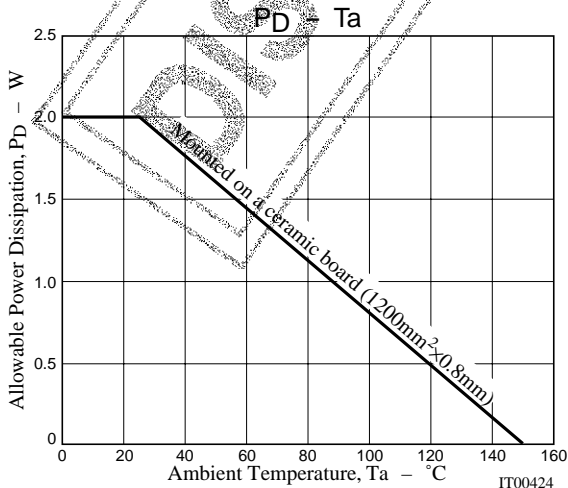
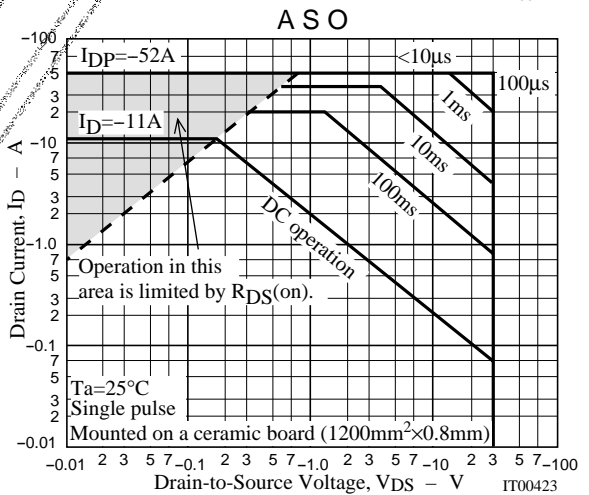
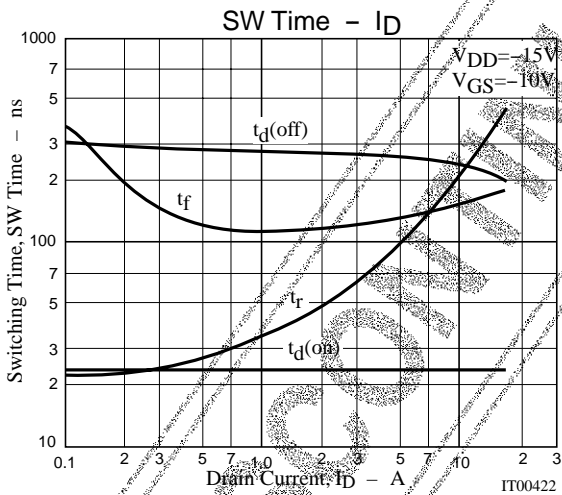
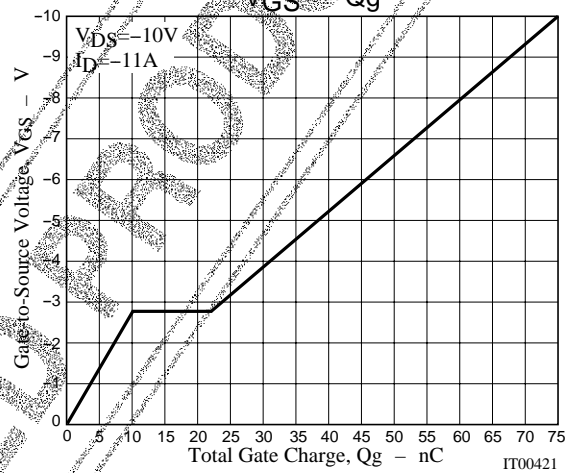
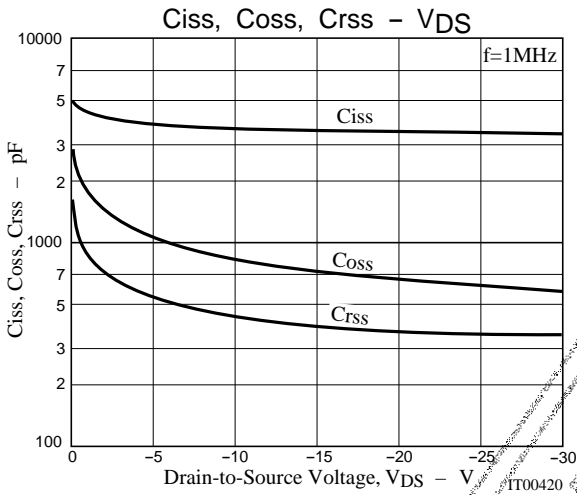
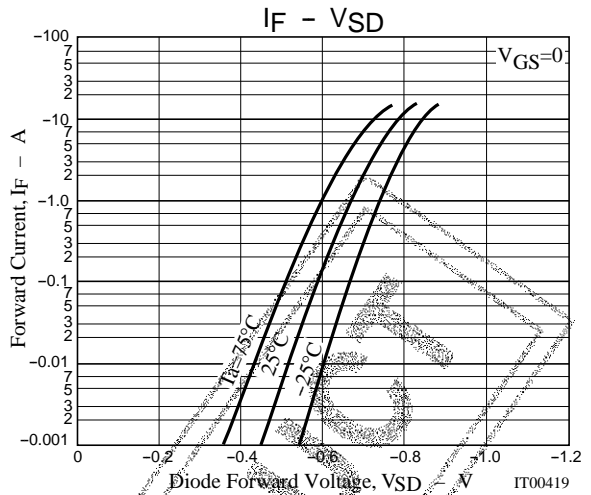
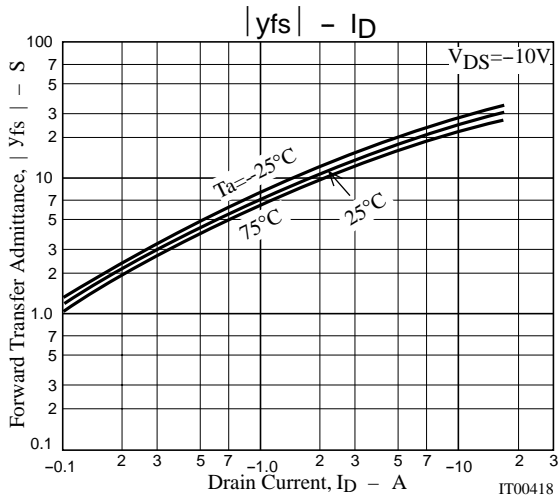
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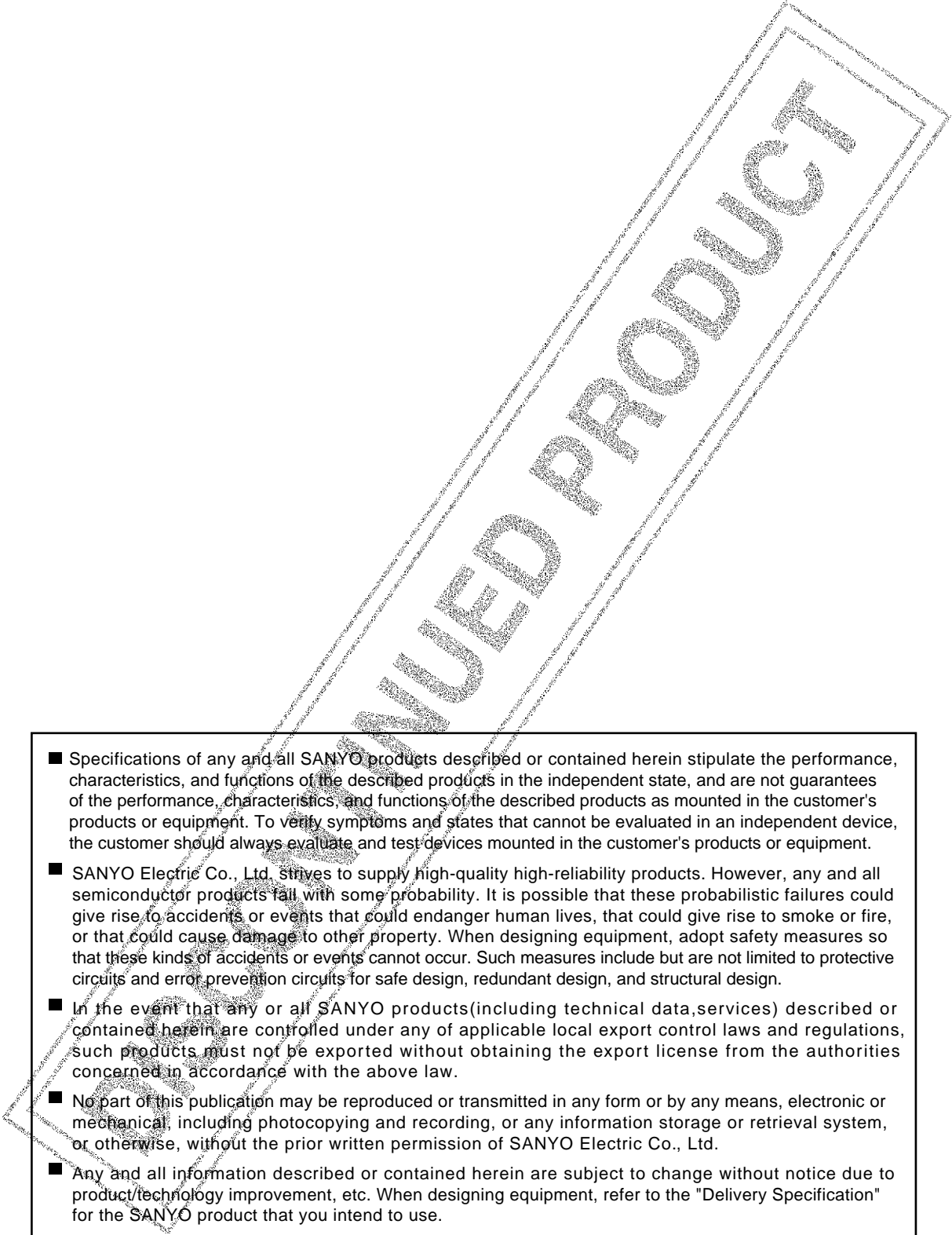
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		3700		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		840		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		440		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		24		ns
Rise Time	t_r	See specified Test Circuit		265		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		240		ns
Fall Time	t_f	See specified Test Circuit		165		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-11A$		75		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-11A$		10		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-11A$		12		nC
Diode Forward Voltage	VSD	$I_S=-11A, V_{GS}=0$	-0.79		1.5	V

Switching Time Test Circuit



FSS138



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