

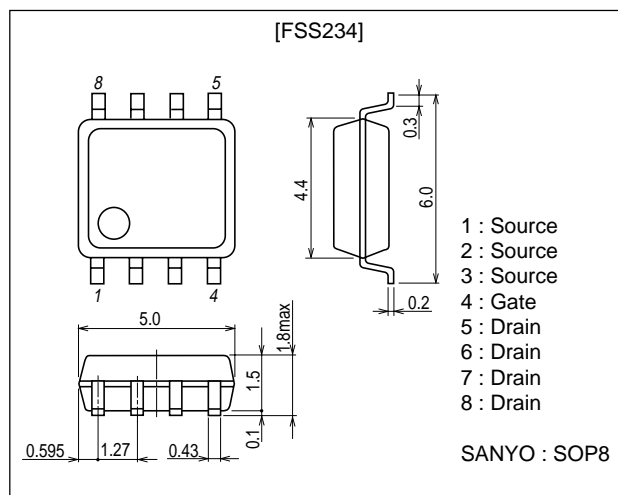
**FSS234****DC / DC Converter Applications****Features**

- Low ON-resistance.
- 4.0V drive.
- Ultrahigh-speed switching.

**Package Dimensions**

unit : mm

2116

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		30	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		12	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	52	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1200mm <sup>2</sup> X0.8mm)	2.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-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	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.0		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 12A$	12.6	18		S

Marking : S234

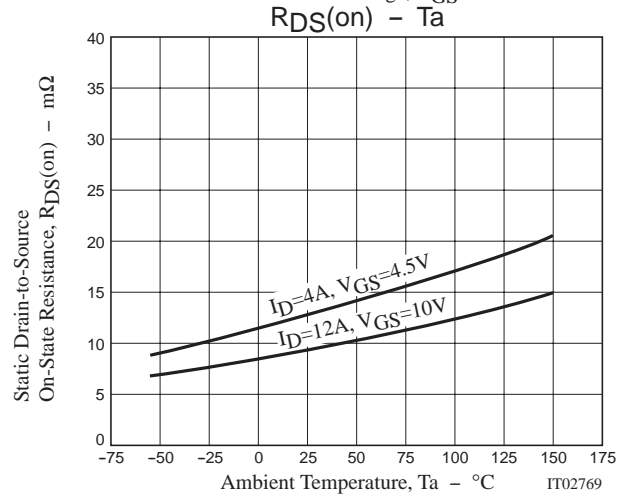
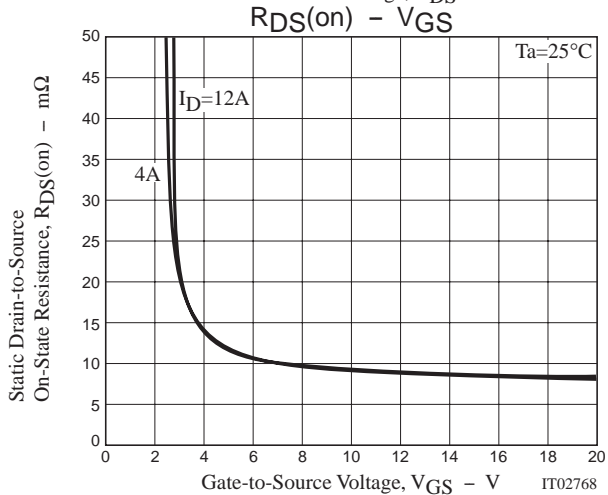
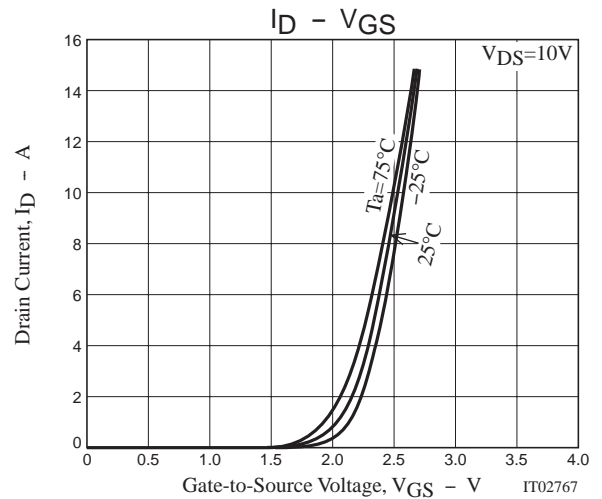
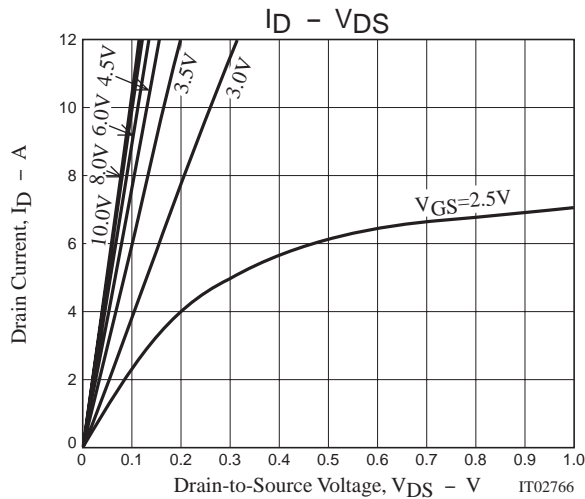
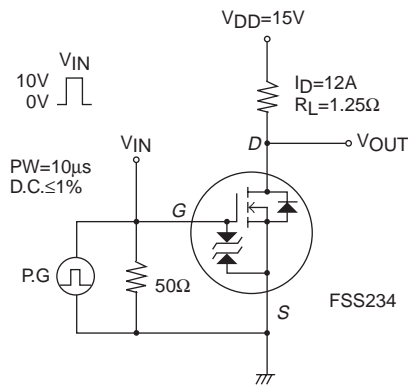
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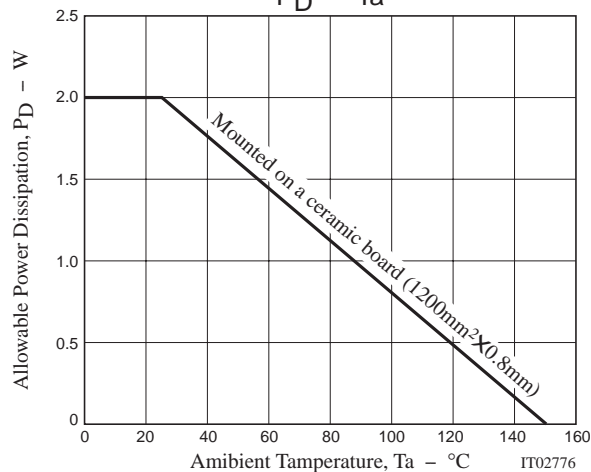
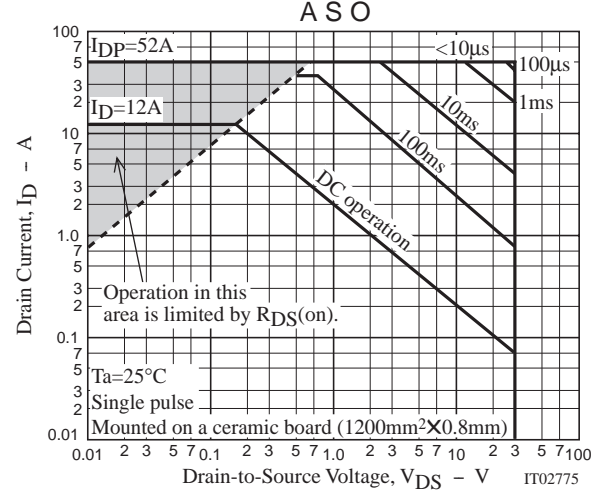
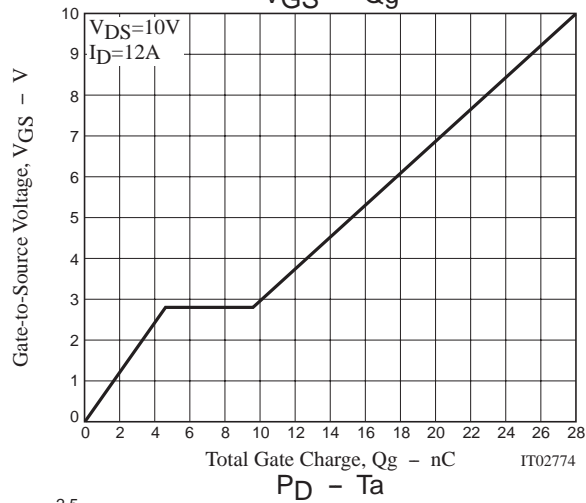
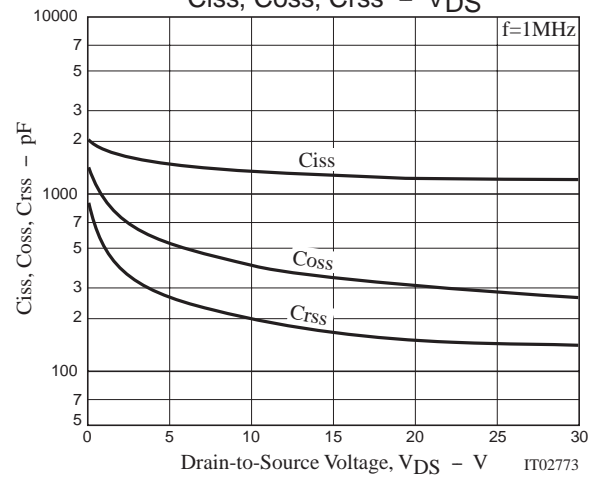
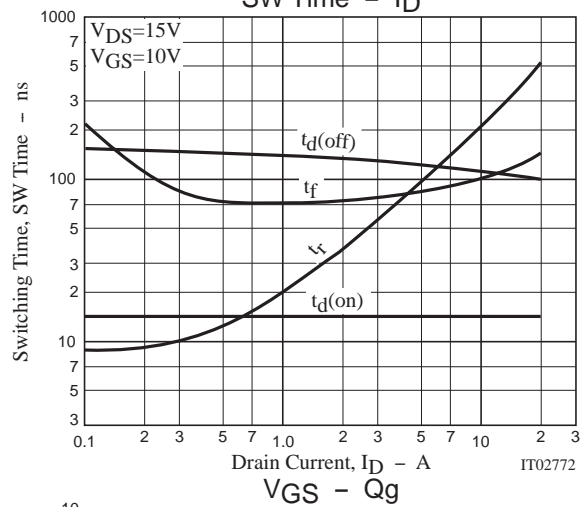
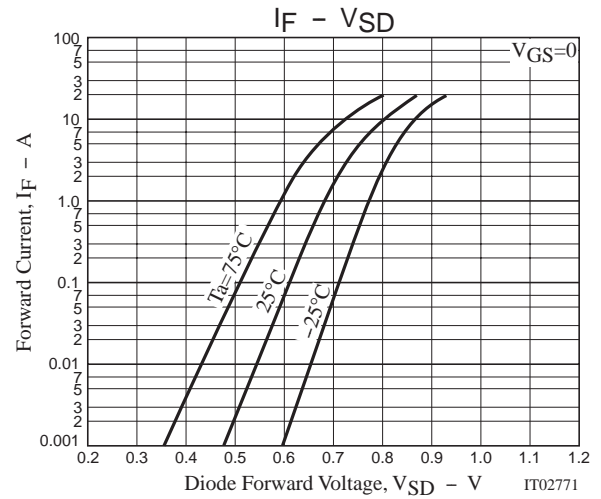
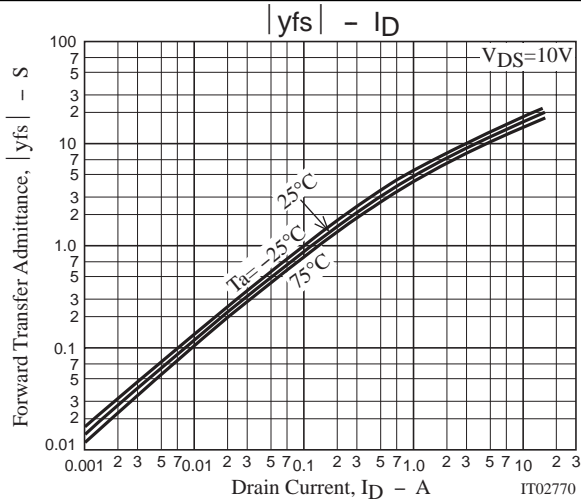
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=12A, V_{GS}=10V$		9.5	13	$m\Omega$
	$R_{DS(on)2}$	$I_D=4A, V_{GS}=4.5V$		13	19	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		1450		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V, f=1MHz$		420		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V, f=1MHz$		210		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		14		ns
Rise Time	$t_r$	See specified Test Circuit		280		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		110		ns
Fall Time	$t_f$	See specified Test Circuit		100		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=12A$		28		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10V, V_{GS}=10V, I_D=12A$		4.6		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=10V, V_{GS}=10V, I_D=12A$		5		nC
Diode Forward Voltage	$V_{SD}$	$I_S=12A, V_{GS}=0$		0.81	1.2	V

## Switching Time Test Circuit





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