

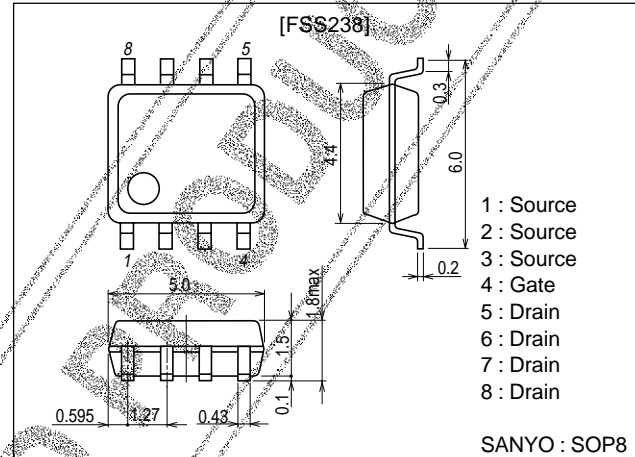
**FSS238****Load Switching Applications****Features**

- Low ON resistance.
- 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)	$I_D$		14	A
Drain Current (pulse)	$I_{DP}$	PW≤10μs, duty cycle≤1%	56	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1200mm <sup>2</sup> ×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} $	$V_{DS}=10V, I_D=14A$	21	30		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=14A, V_{GS}=10V$		7	9	mΩ
	$R_{DS(on)2}$	$I_D=7A, V_{GS}=4V$		10	14	mΩ
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		3700		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V, f=1MHz$		830		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V, f=1MHz$		500		pF

Marking: S238

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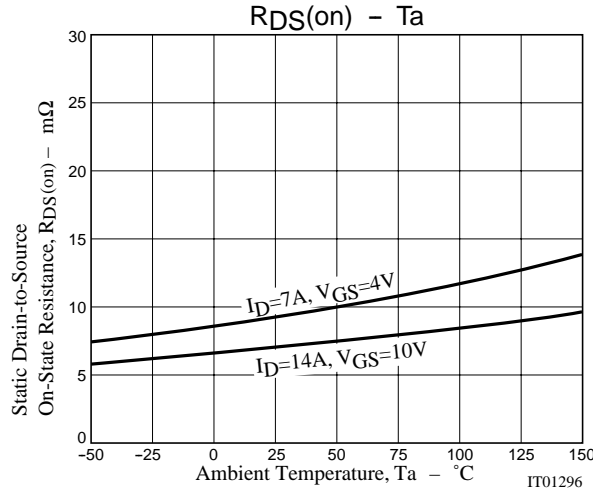
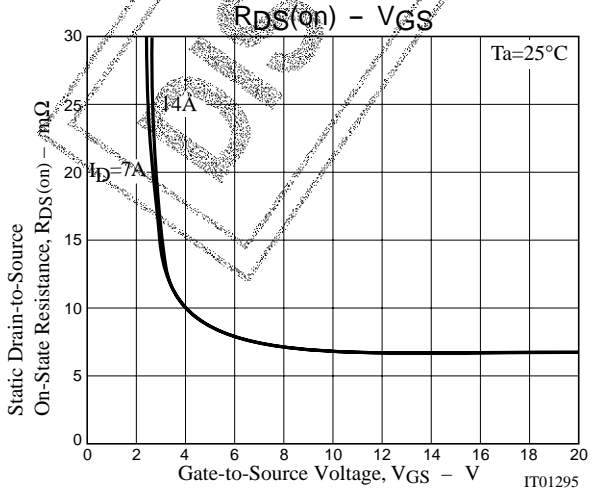
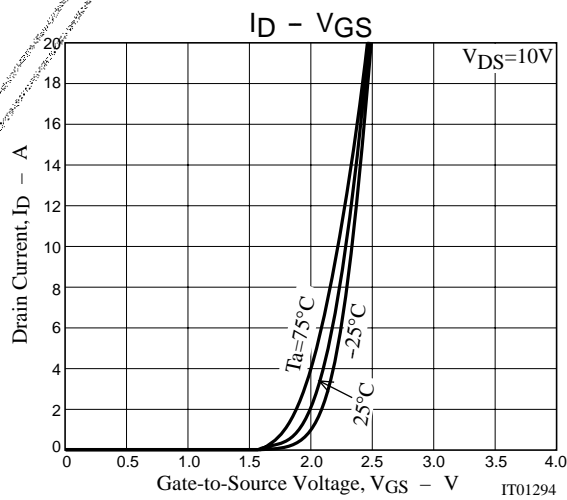
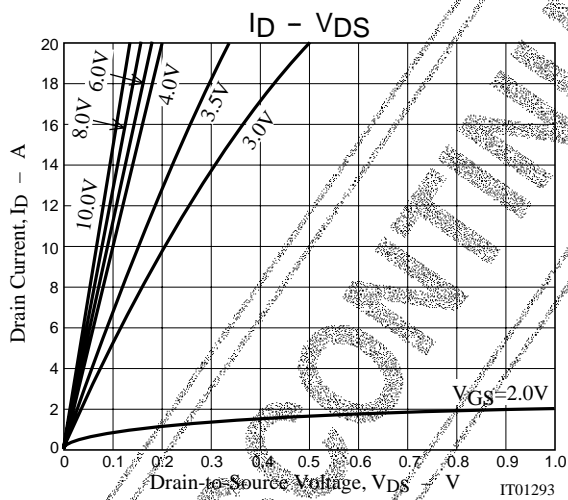
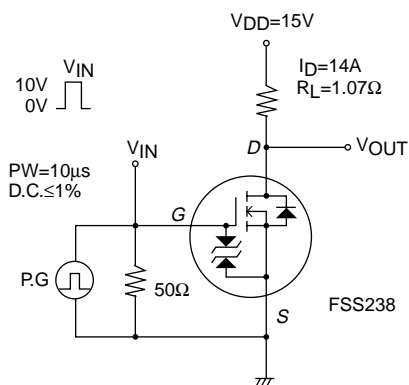
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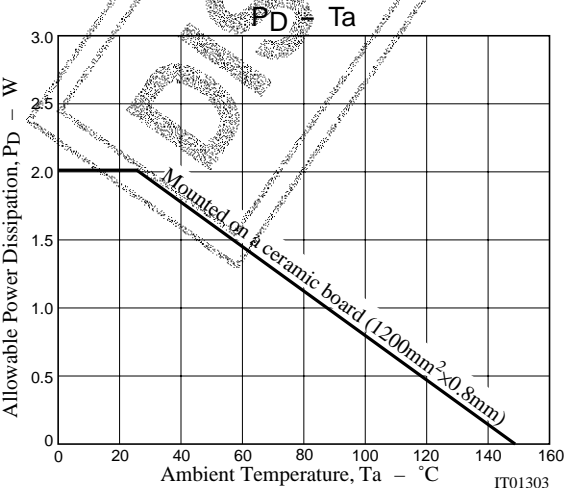
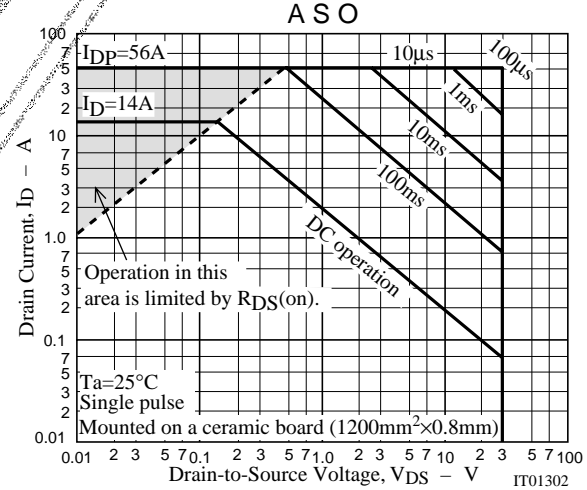
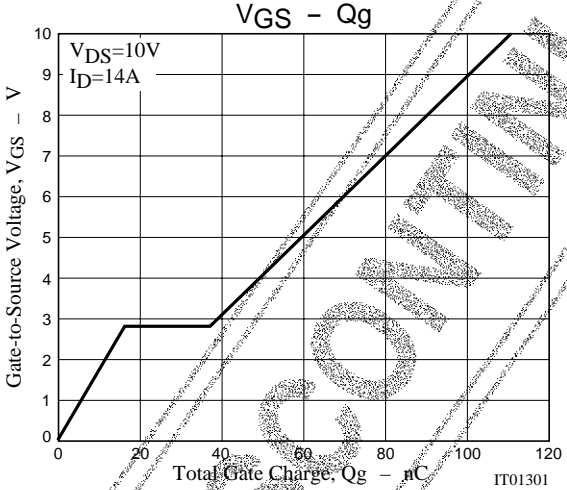
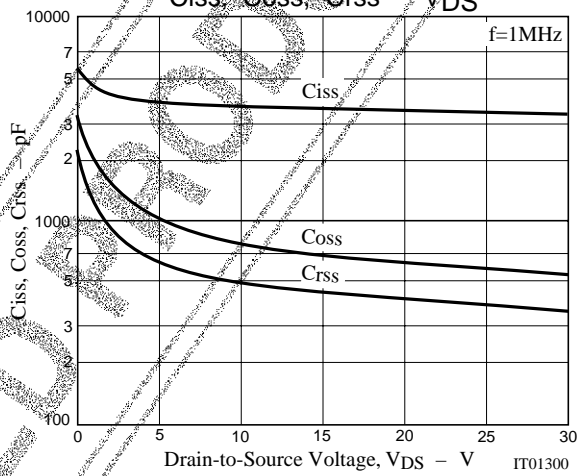
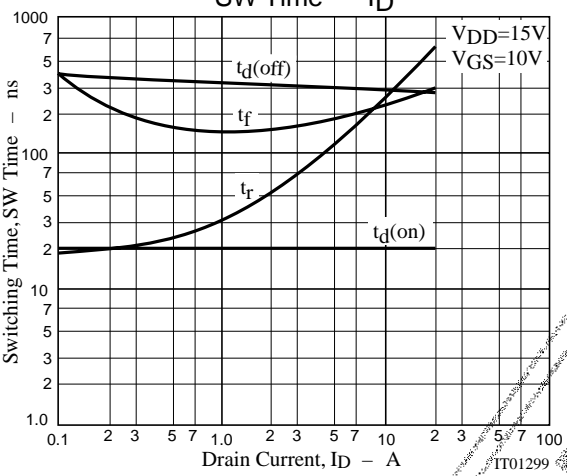
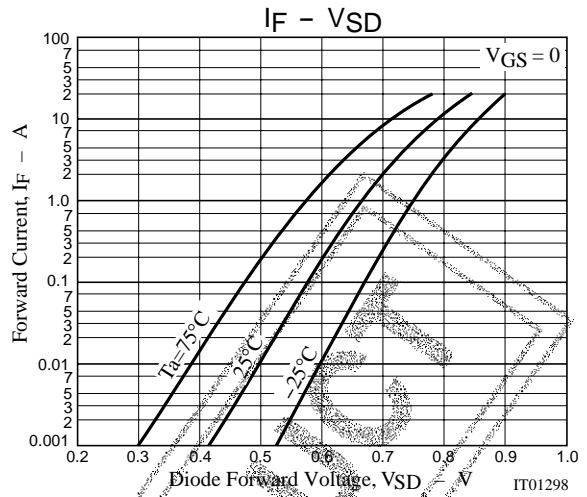
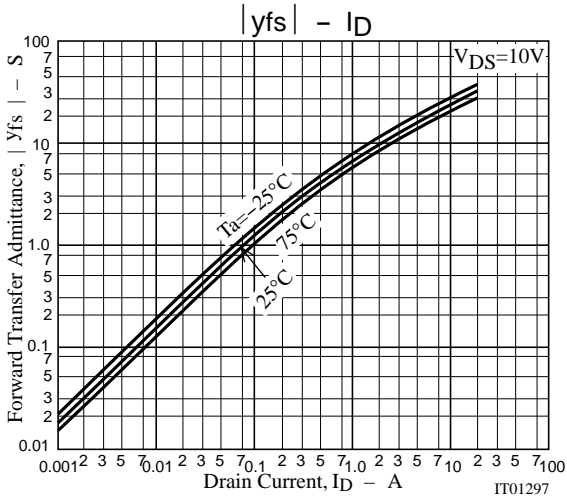
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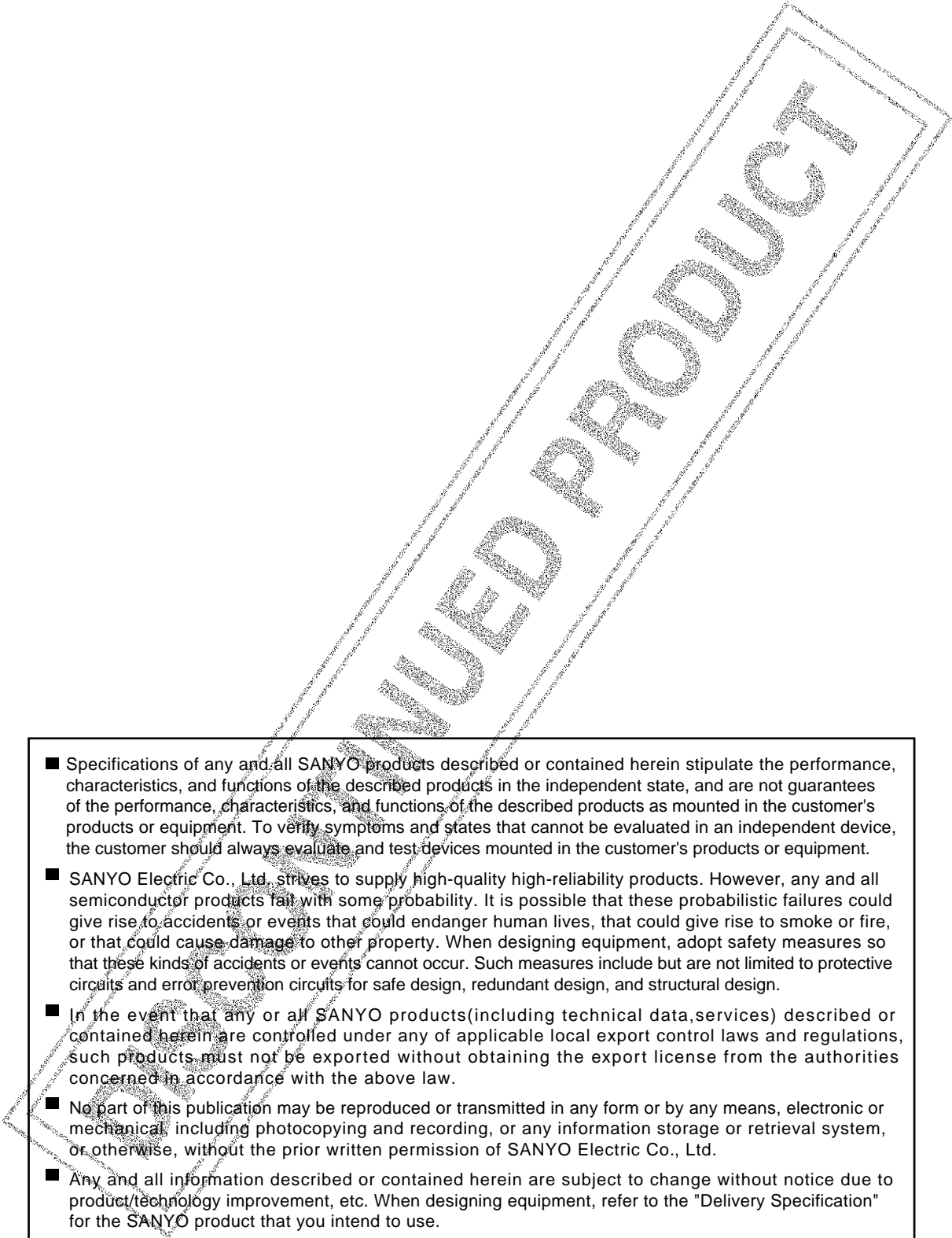
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		20		ns
Rise Time	$t_r$	See specified Test Circuit		370		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		280		ns
Fall Time	$t_f$	See specified Test Circuit		240		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=14A$		110		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10V, V_{GS}=10V, I_D=14A$		16		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=10V, V_{GS}=10V, I_D=14A$		20		nC
Diode Forward Voltage	$V_{SD}$	$I_S=14A, V_{GS}=0$		0.78	1.2	V

## Switching Time Test Circuit



# FSS238



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