



# FSS245 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Motor drive applications.
- Inverter drive applications.
- 4V drive.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		45	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		11	A
Drain Current (PW≤10s)	I <sub>D</sub>	Duty cycle≤1%	14	A
Drain Current (PW≤10μs)	I <sub>DP</sub>	Duty cycle≤1%	44	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1200mm <sup>2</sup> ×0.8mm), PW≤10s	2.9	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> =0V	45			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =45V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =11A	8.4	14		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =11A, V <sub>GS</sub> =10V		10	13	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =5.5A, V <sub>GS</sub> =4V		16	23	mΩ

Marking : S245

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# FSS245

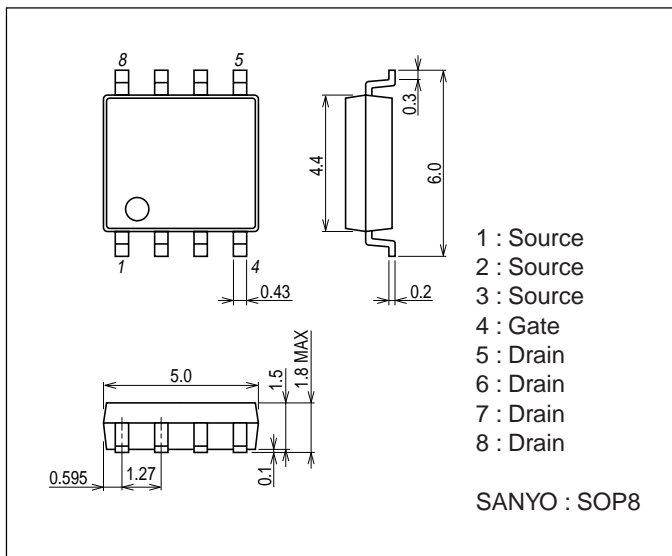
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		3020		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		350		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		265		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		30		ns
Rise Time	$t_r$	See specified Test Circuit.		150		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		170		ns
Fall Time	$t_f$	See specified Test Circuit.		115		ns
Total Gate Charge	$Q_g$	$V_{DS}=24V, V_{GS}=10V, I_D=11A$		54		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=24V, V_{GS}=10V, I_D=11A$		9		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=24V, V_{GS}=10V, I_D=11A$		10		nC
Diode Forward Voltage	$V_{SD}$	$I_S=11A, V_{GS}=0V$		0.82	1.2	V

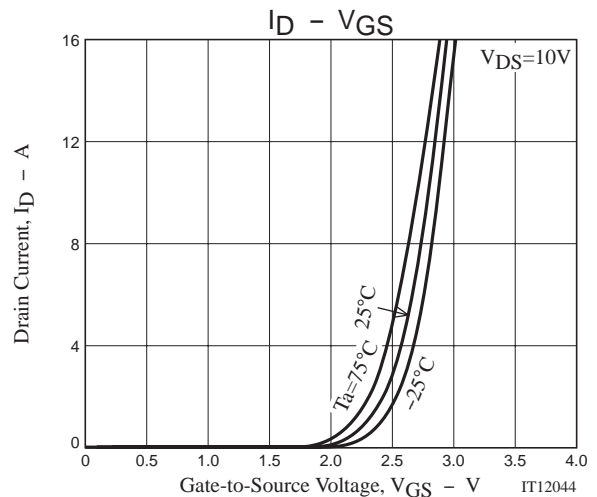
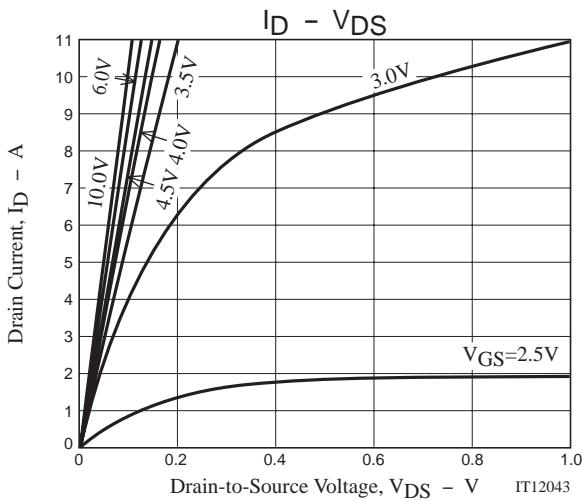
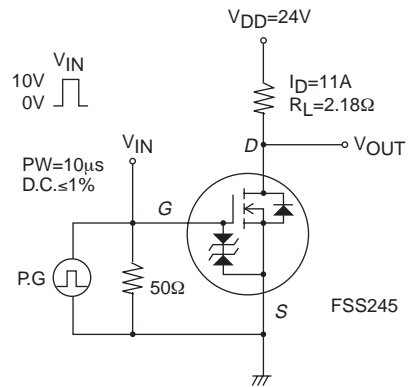
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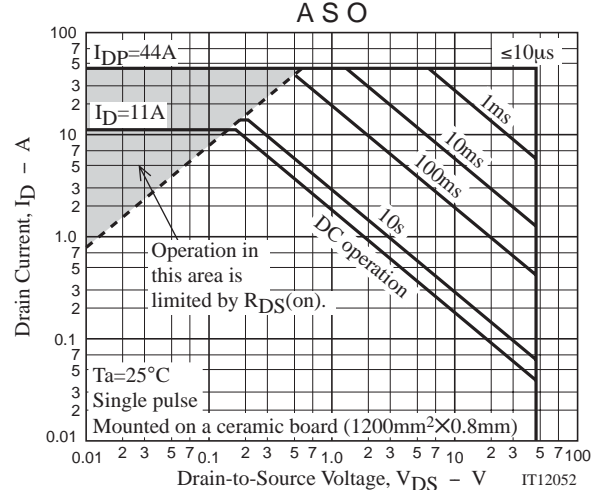
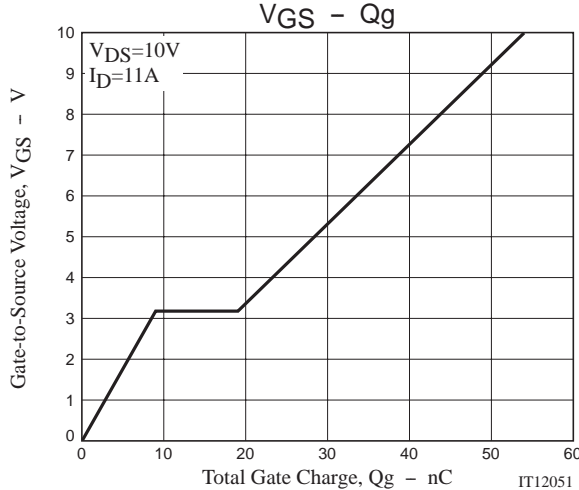
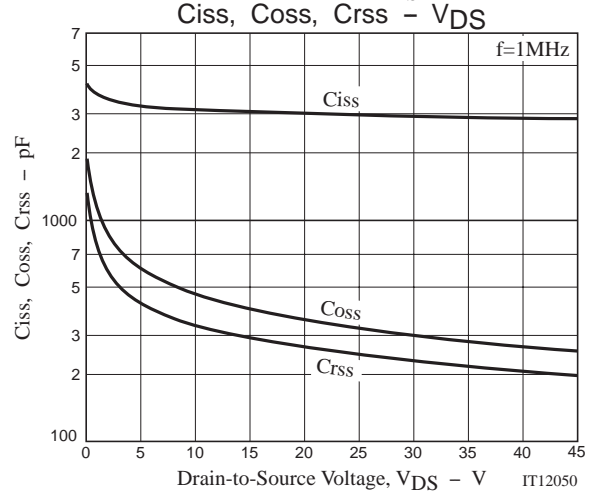
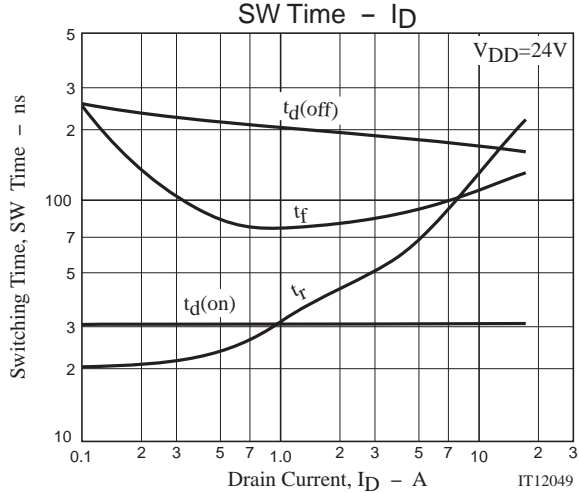
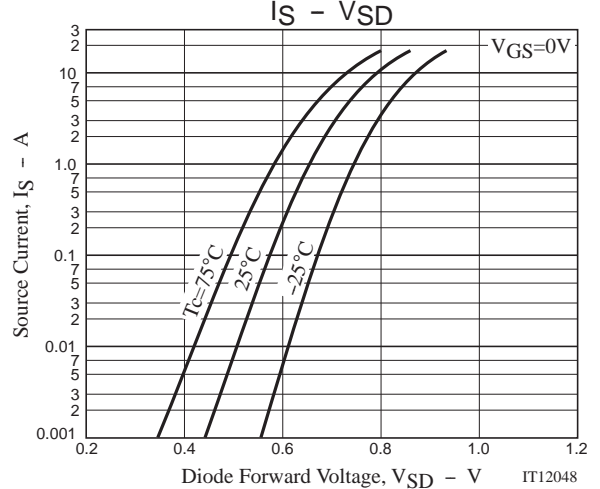
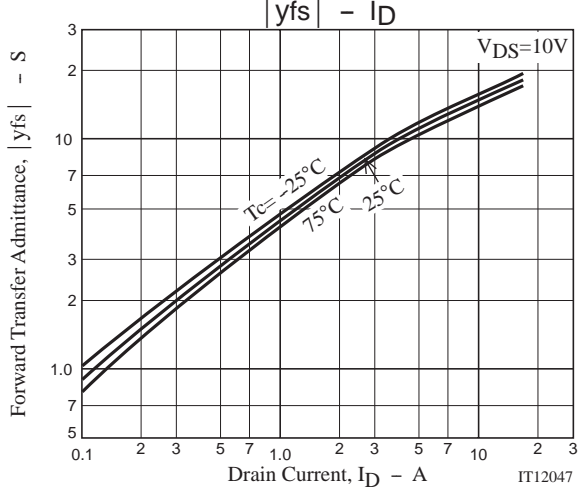
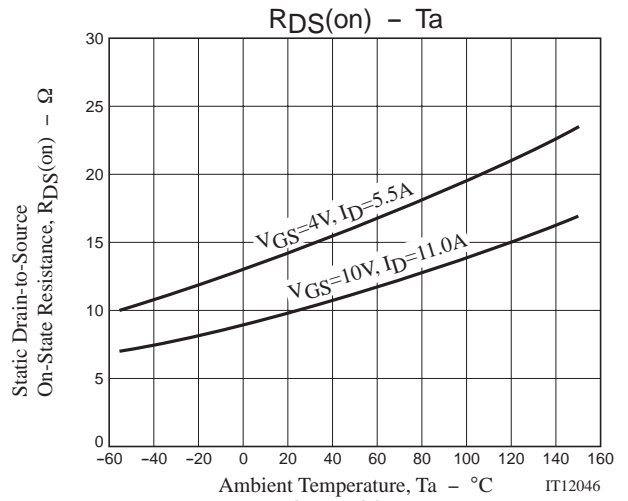
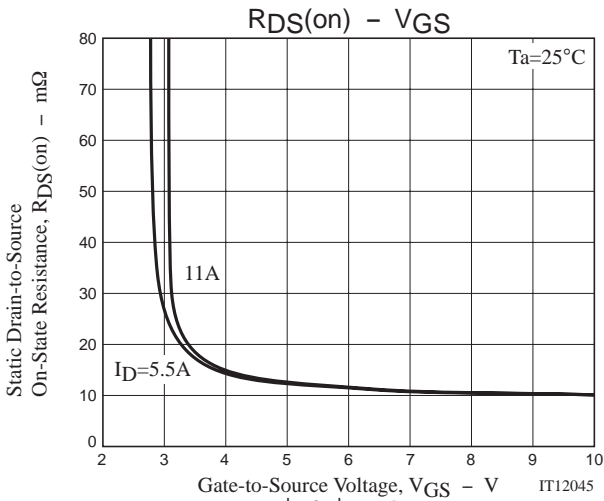
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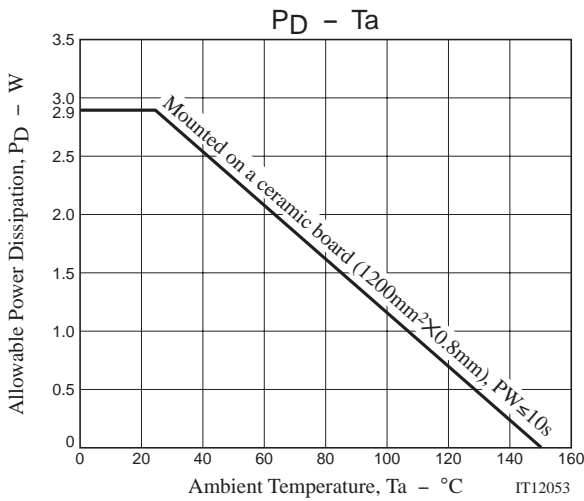
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## Switching Time Test Circuit







Note on usage : Since the FSS245 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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