

Ordering number : ENN6673

N-Channel Silicon MOSFET

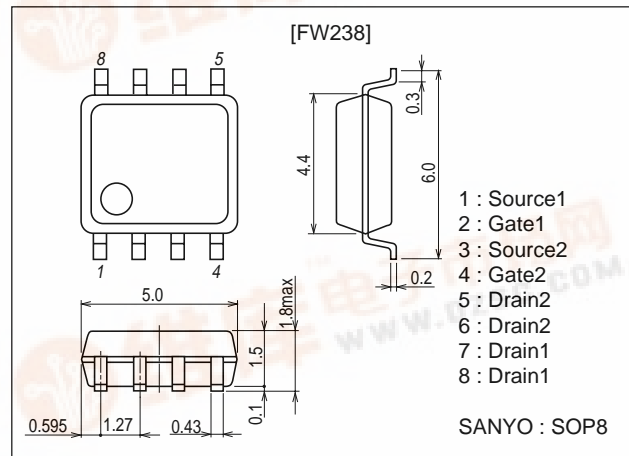
**FW238****SANYO****Load Switching Applications****Features**

- Low ON-resistance.
- 4V drive.

**Package Dimensions**

unit : mm

2129

**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)	$I_D$		5	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 (1500mm <sup>2</sup> X0.8mm) 1unit	1.7	W
Total Dissipation	$P_T$	Mounted on a ceramic board (1500mm <sup>2</sup> X0.8mm)	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	$\mu A$
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} $	$V_{DS}=10V$ , $I_D=5A$	4.9	7.0		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=5A$ , $V_{GS}=10V$		37	49	m $\Omega$
	$R_{DS(on)2}$	$I_D=4A$ , $V_{GS}=4V$		52	73	m $\Omega$

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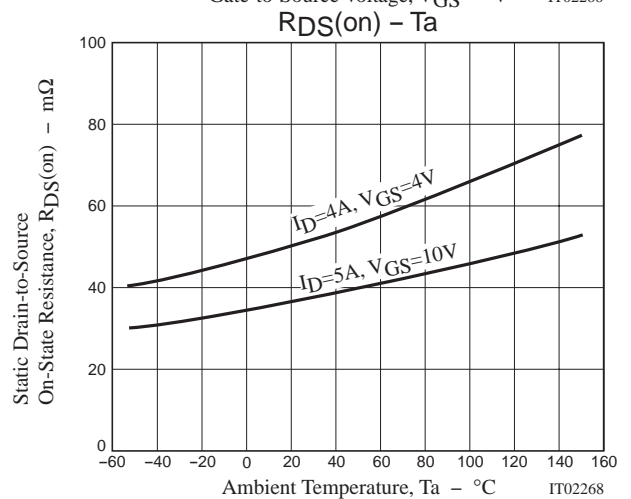
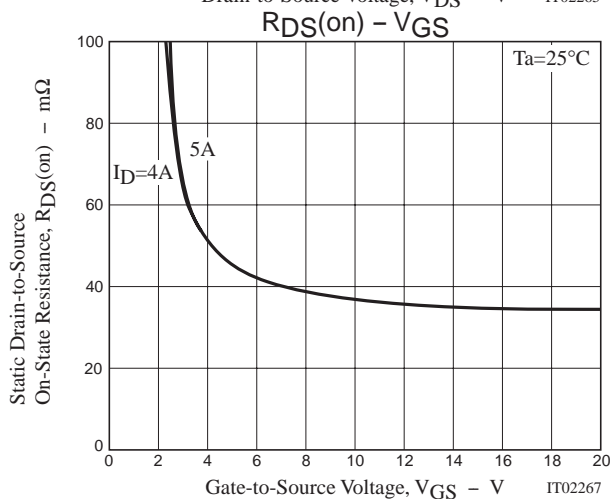
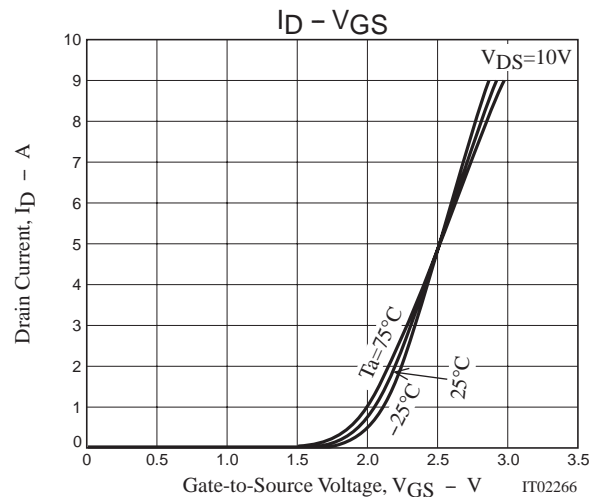
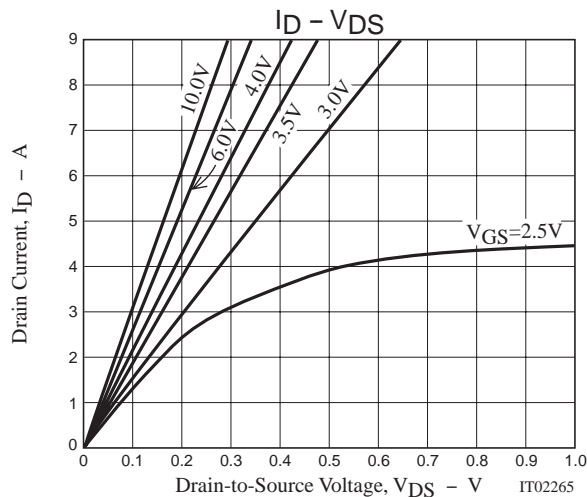
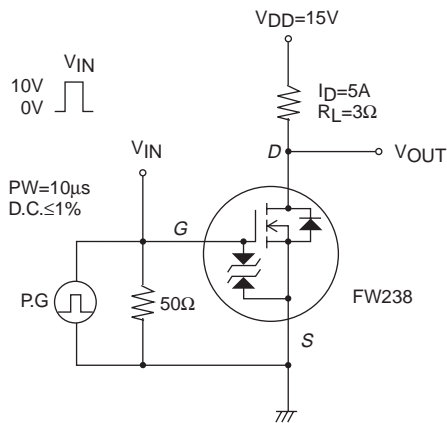
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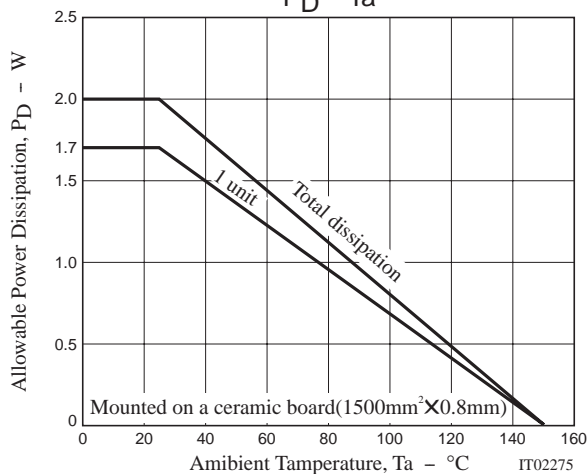
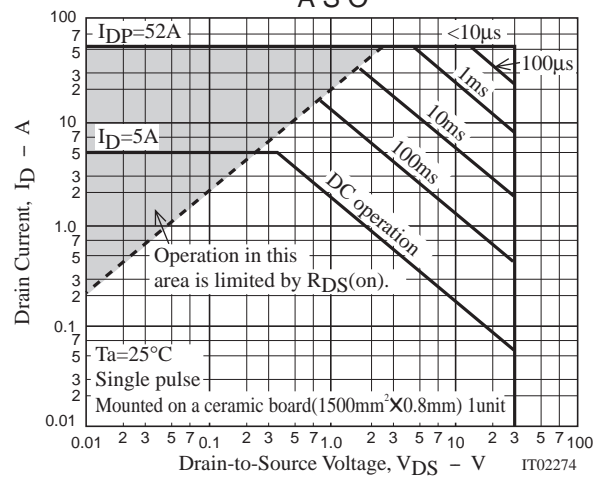
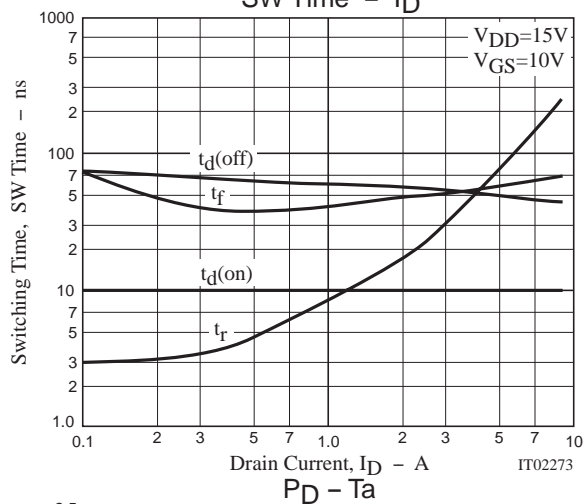
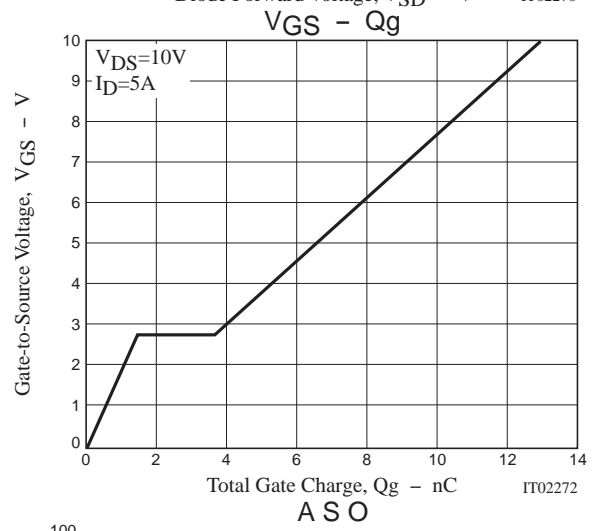
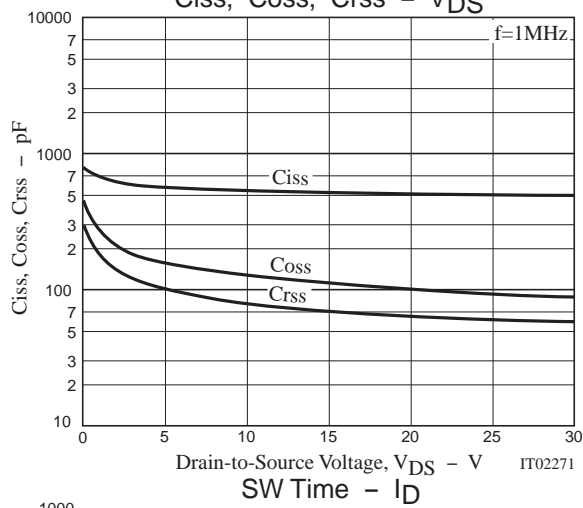
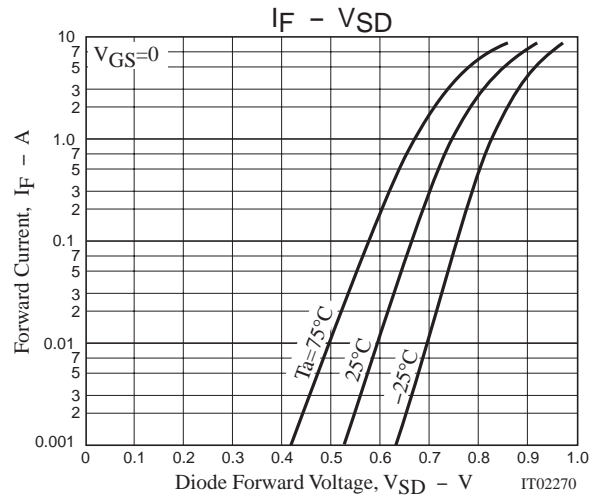
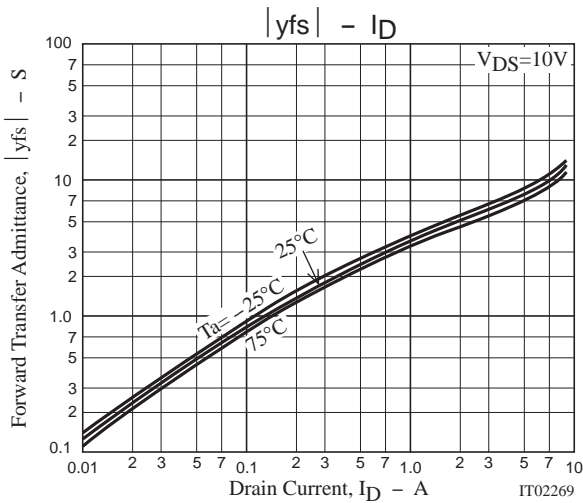
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		550		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		130		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		80		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		10		ns
Rise Time	$t_r$	See specified Test Circuit		95		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		55		ns
Fall Time	$t_f$	See specified Test Circuit		50		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		13		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		1.5		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		2.2		nC
Diode Forward Voltage	$V_{SD}$	$I_S=5A, V_{GS}=0$		0.85	1.2	V

Marking : W238

### Switching Time Test Circuit



# FW238



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