

Ordering number : ENN7006

P-Channel Silicon MOSFET



FW138

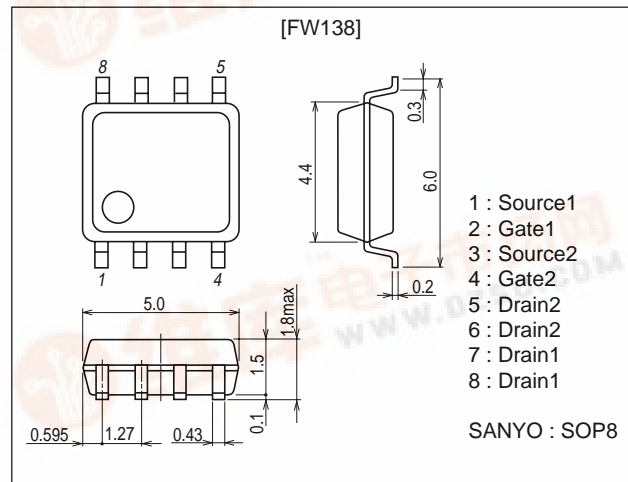
Load Switching Applications

Features

- 4V drive.
- Low ON-resistance.

Package Dimensions

unit : mm
2129



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		-4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-32	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1500mm²X0.8mm) 1unit	1.7	W
Total Dissipation	P _T	Mounted on a ceramic board (1500mm²X0.8mm)	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 =-4A	4	5.8		S

Marking : W138

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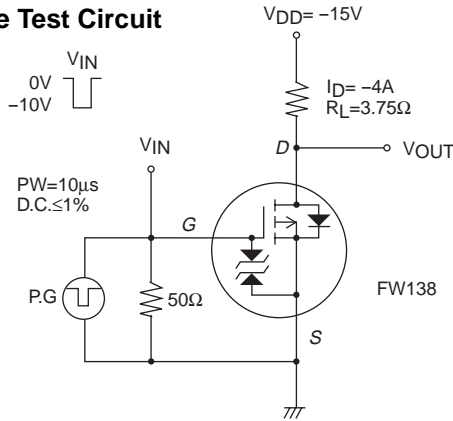


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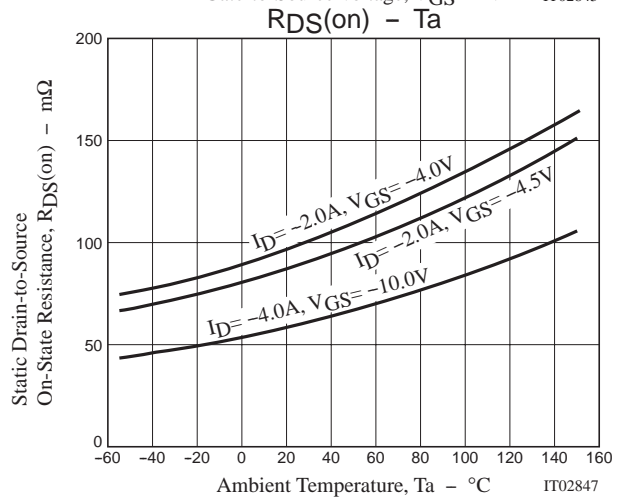
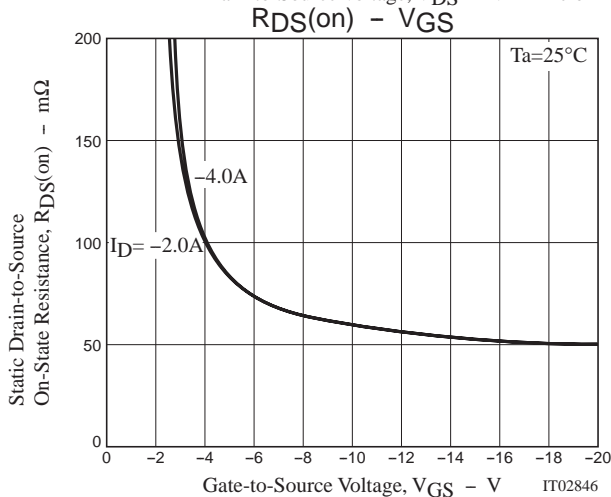
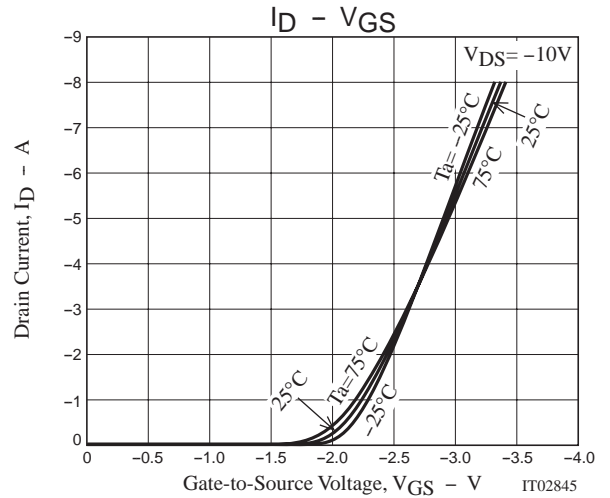
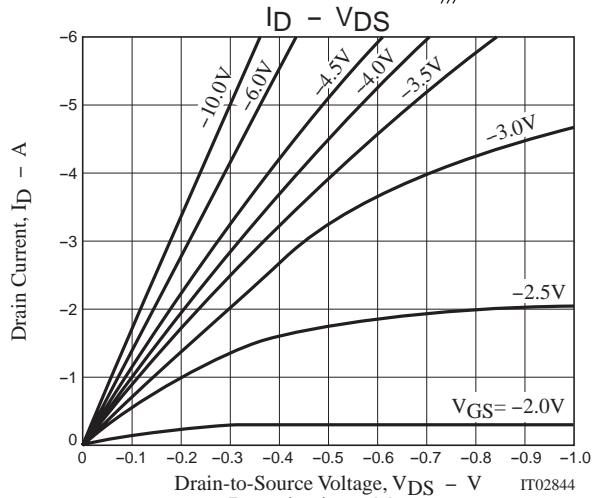
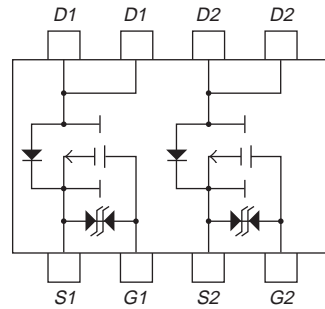
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	R _{DS(on) 1}	I _D =-4A, V _{GS} =-10V		64	84	mΩ
	R _{DS(on) 2}	I _D =-2A, V _{GS} =-4.5V		94	132	mΩ
	R _{DS(on) 3}	I _D =-2A, V _{GS} =-4V		104	146	mΩ
Input Capacitance	C _{iss}	V _{DS} =-10V, f=1MHz		560		pF
Output Capacitance	C _{oss}	V _{DS} =-10V, f=1MHz		150		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-10V, f=1MHz		95		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit		9		ns
Rise Time	t _r	See specified Test Circuit		18		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit		55		ns
Fall Time	t _f	See specified Test Circuit		60		ns
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-10V, I _D =-4A		12		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-10V, V _{GS} =-10V, I _D =-4A		2		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =-10V, V _{GS} =-10V, I _D =-4A		2		nC
Diode Forward Voltage	V _{SD}	I _S =-4A, V _{GS} =0		-0.85	-1.5	V

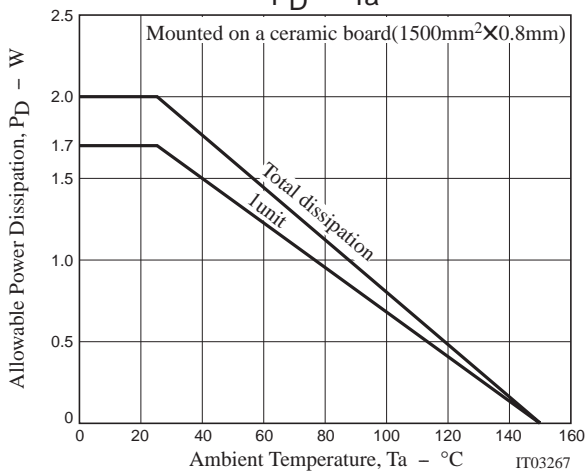
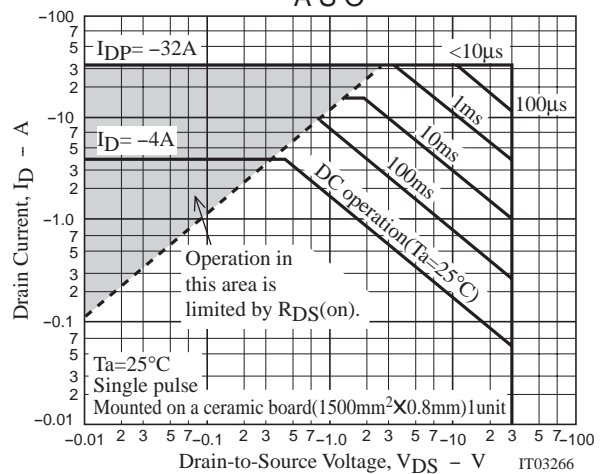
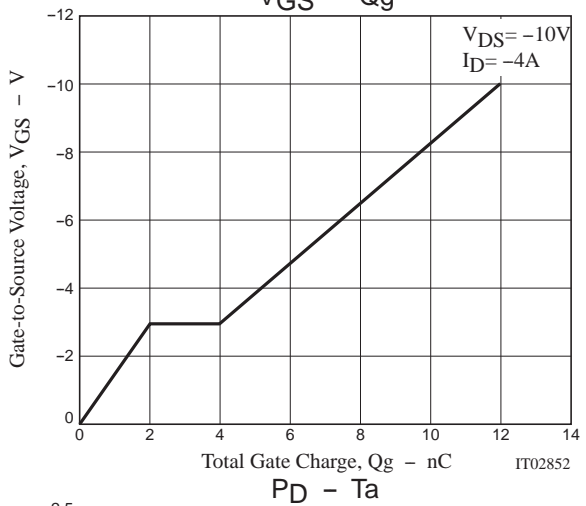
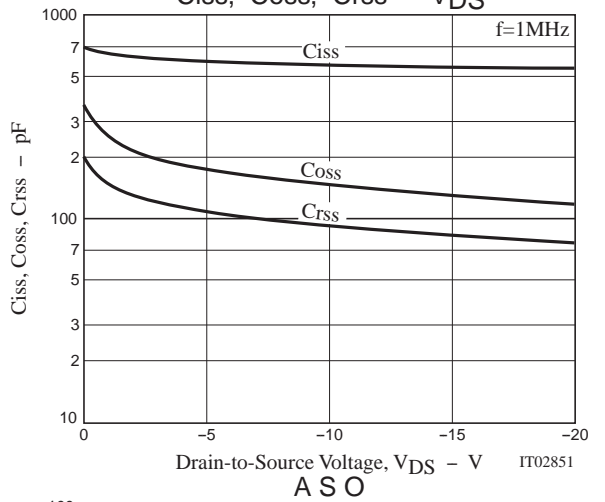
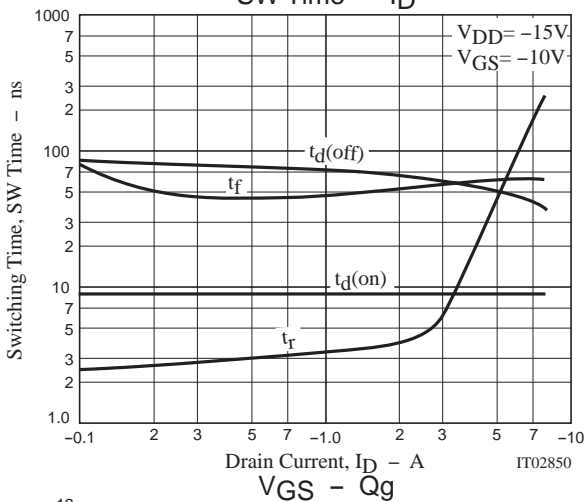
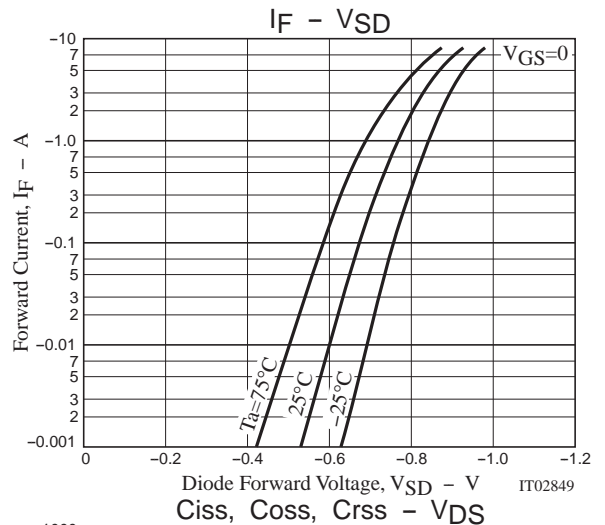
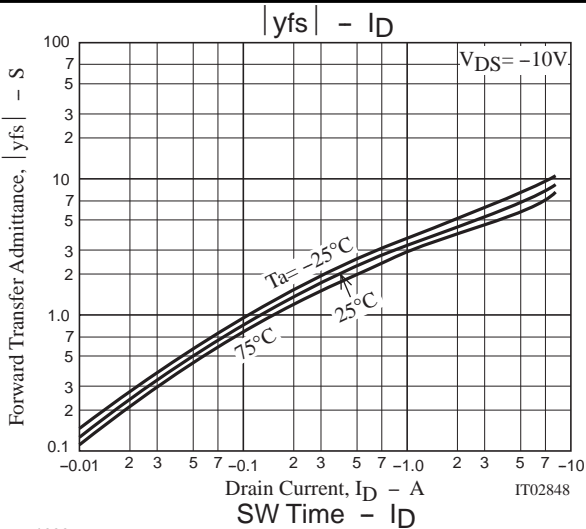
Switching Time Test Circuit



Electrical Connection (Top view)



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