



FW813 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS(on)} = 39m\Omega$ (typ.)
- 4V drive
- Nch + Nch MOSFET

Specifications

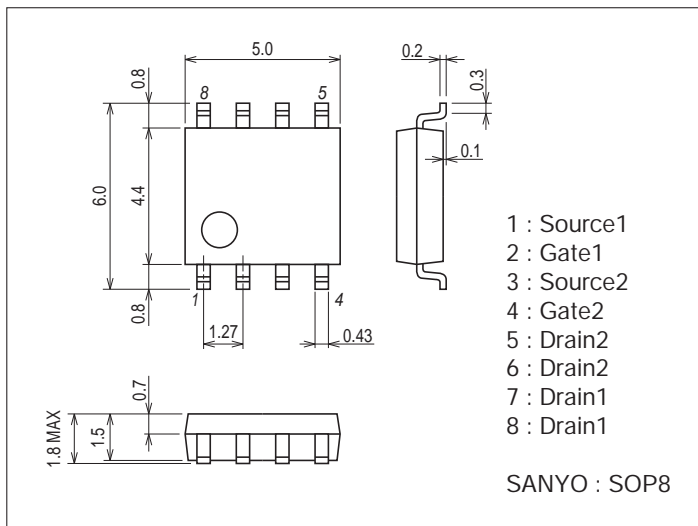
Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		± 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	When mounted on ceramic substrate (2000mm ² × 0.8mm) 1unit, $PW \leq 10s$	2.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (2000mm ² × 0.8mm), $PW \leq 10s$	2.5	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

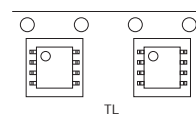
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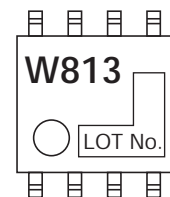
Product & Package Information

- Package : SOP8
- JEITA, JEDEC : SC-87, SOT96
- Minimum Packing Quantity : 1,000 pcs./reel

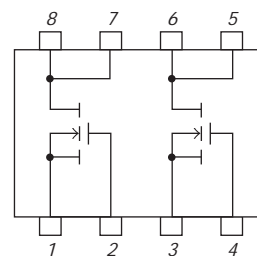
Packing Type : TL



Marking



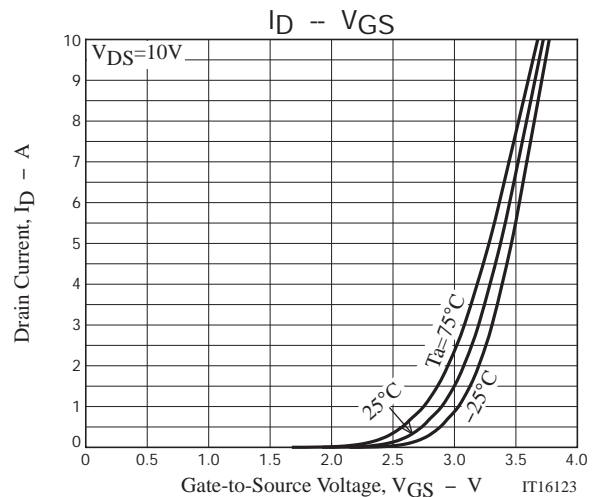
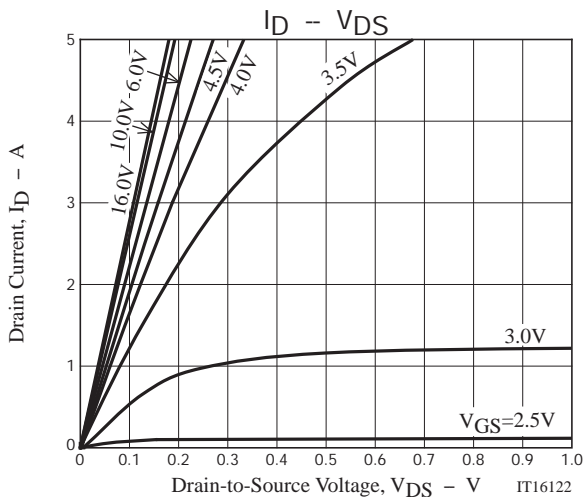
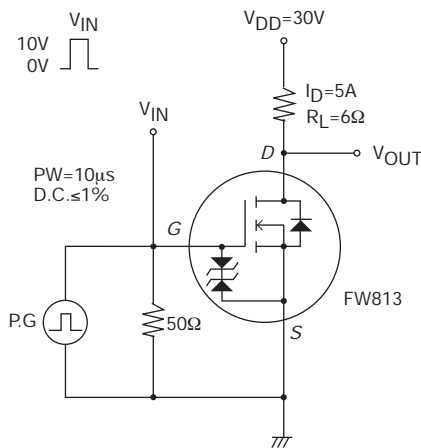
Electrical Connection

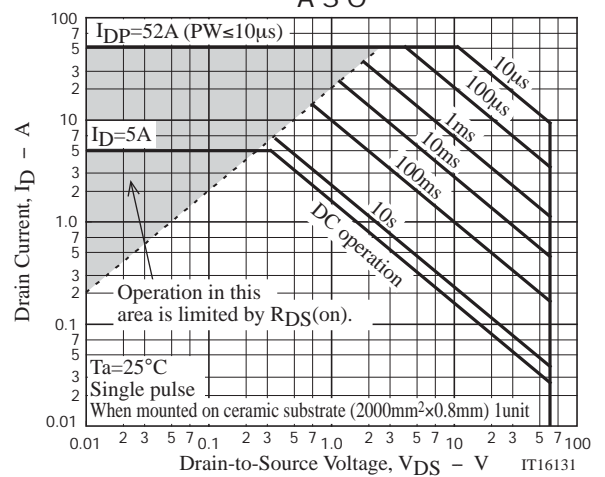
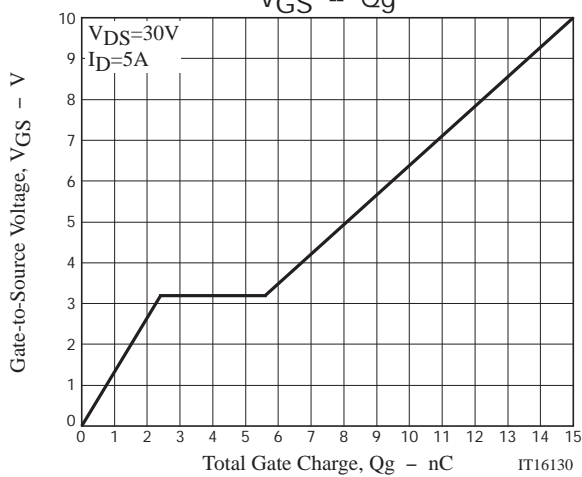
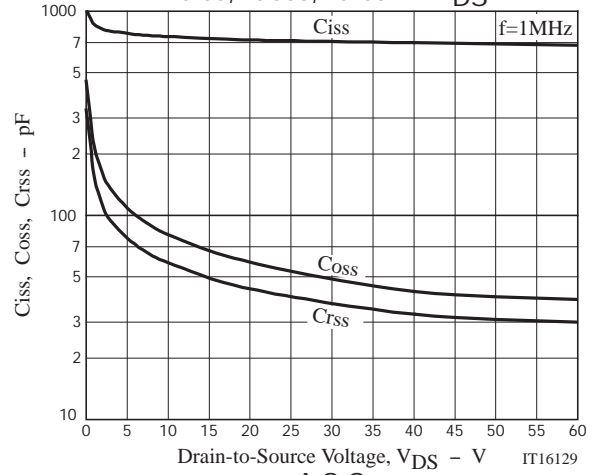
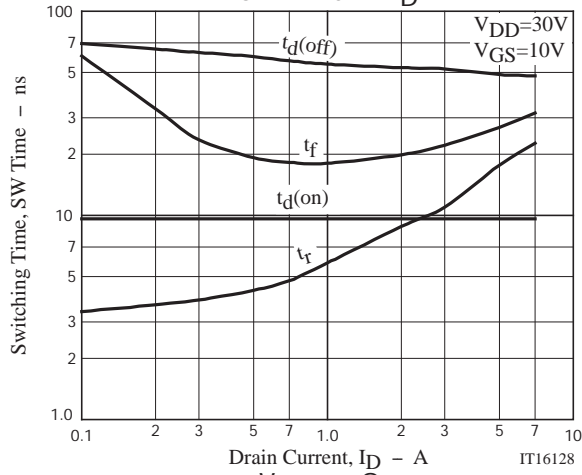
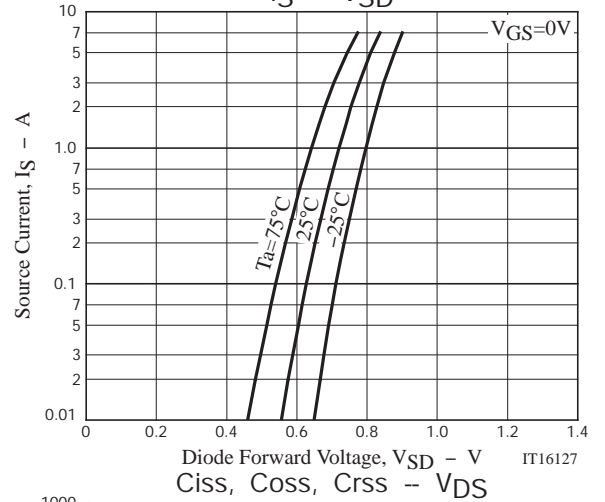
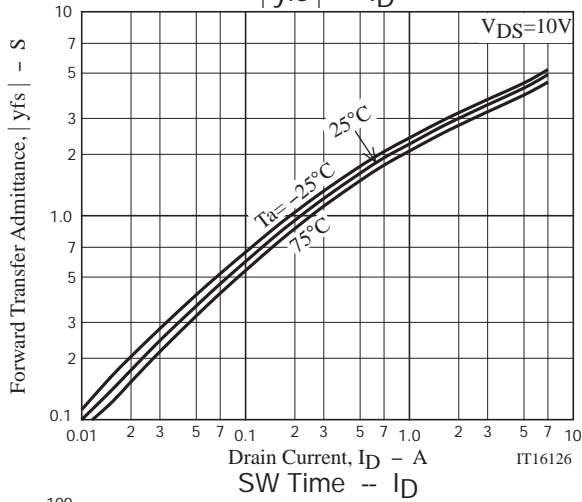
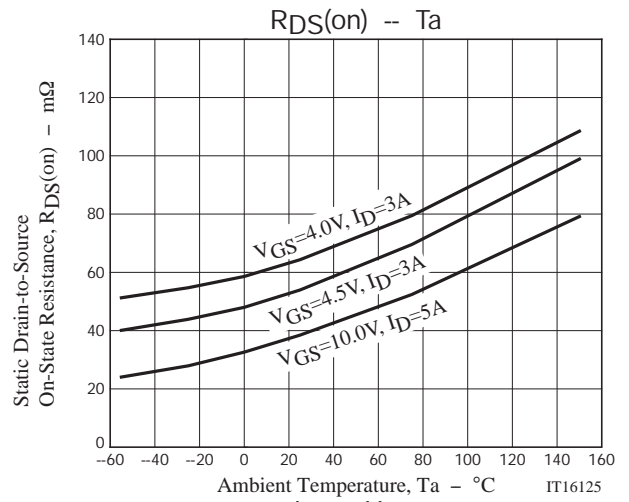
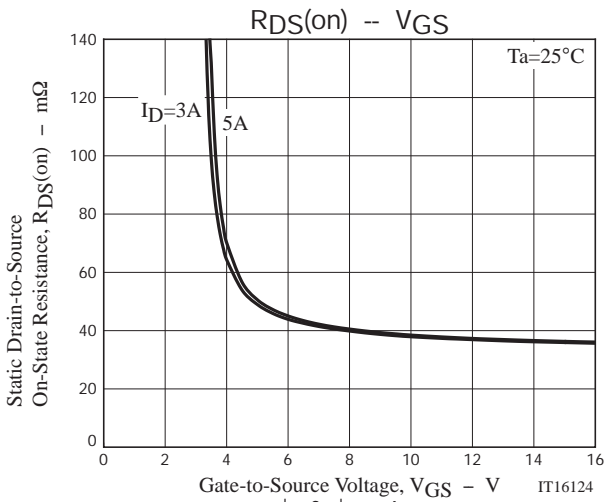


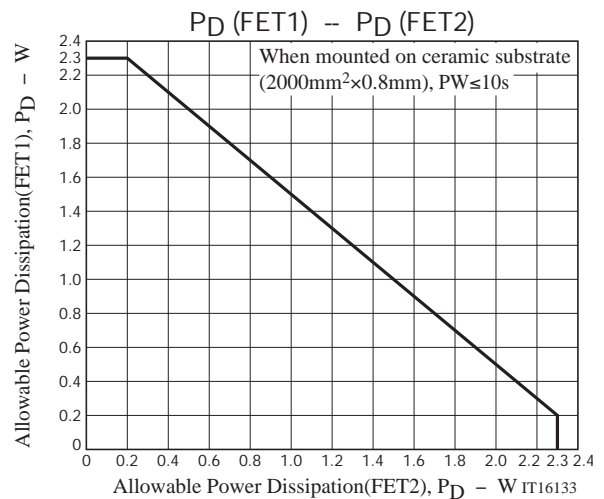
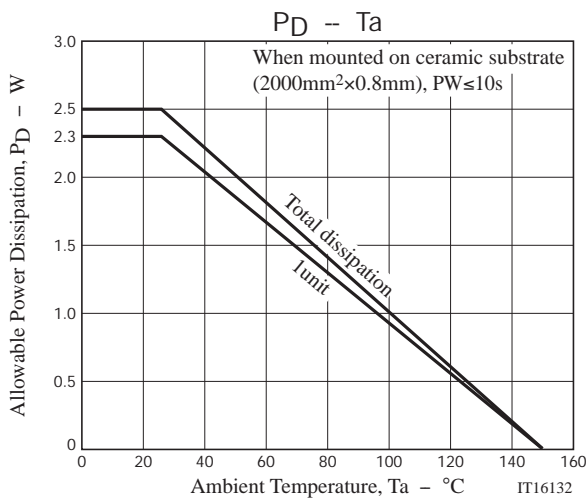
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	60			V
Zero-Gate Voltage Drain Current	IDSS	VDS=60V, VGS=0V			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=5A		4.2		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=5A, VGS=10V		39	49	mΩ
	RDS(on)2	ID=3A, VGS=4.5V		54	76	mΩ
	RDS(on)3	ID=3A, VGS=4V		64	90	mΩ
Input Capacitance	Ciss	VDS=20V, f=1MHz		725		pF
Output Capacitance	Coss	VDS=20V, f=1MHz		60		pF
Reverse Transfer Capacitance	Crss	VDS=20V, f=1MHz		45		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		9.6		ns
Rise Time	tr	See specified Test Circuit.		18		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		49		ns
Fall Time	tf	See specified Test Circuit.		27		ns
Total Gate Charge	Qg	VDS=30V, VGS=10V, ID=5A		15		nC
Gate-to-Source Charge	Qgs	VDS=30V, VGS=10V, ID=5A		2.4		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=30V, VGS=10V, ID=5A		3.2		nC
Diode Forward Voltage	VSD	IS=5A, VGS=0V		0.81	1.2	V

Switching Time Test Circuit







Note on usage : Since the FW813 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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