



# FW274 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- 4V drive.
- Composite type, facilitating high-density mounting.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		6	A
Drain Current (PW≤10s)	I <sub>D</sub>	Duty cycle≤1%	6.5	A
Drain Current (PW≤10μs)	I <sub>DP</sub>	Duty cycle≤1%	24	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (2000mm <sup>2</sup> ×0.8mm) 1unit, PW≤10s	1.8	W
Total Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (2000mm <sup>2</sup> ×0.8mm), PW≤10s	2.2	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(BR) <sub>DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, 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> =6A	1.8	3		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =6A, V <sub>GS</sub> =10V		28	37	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =3A, V <sub>GS</sub> =4.5V		43	61	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =3A, V <sub>GS</sub> =4V		52	73	mΩ

Marking : W274

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# FW274

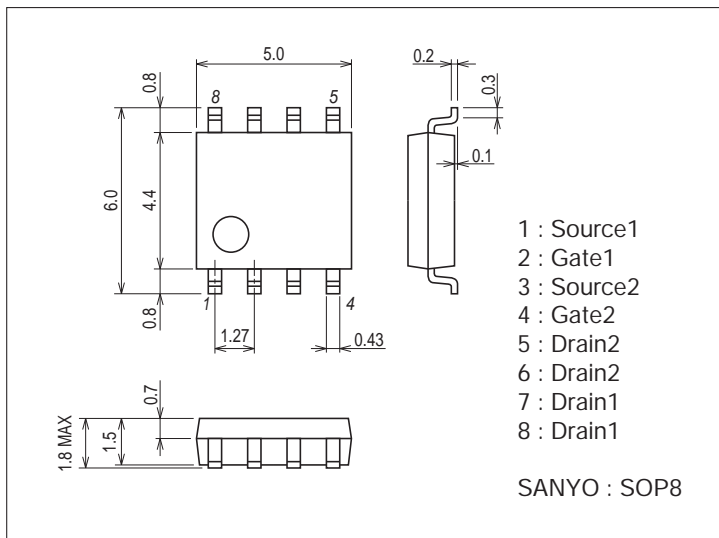
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		490		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		85		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		45		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8		ns
Rise Time	$t_r$	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		31		ns
Fall Time	$t_f$	See specified Test Circuit.		28		ns
Total Gate Charge	Qg	$V_{DS}=15V, V_{GS}=10V, I_D=6A$		9.1		nC
Gate-to-Source Charge	Qgs	$V_{DS}=15V, V_{GS}=10V, I_D=6A$		1.7		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=15V, V_{GS}=10V, I_D=6A$		1.7		nC
Diode Forward Voltage	VSD	$I_S=6A, V_{GS}=0V$		0.84	1.2	V

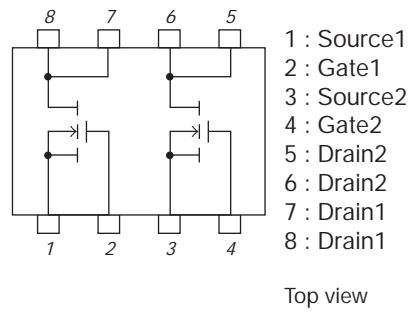
## Package Dimensions

unit : mm (typ)

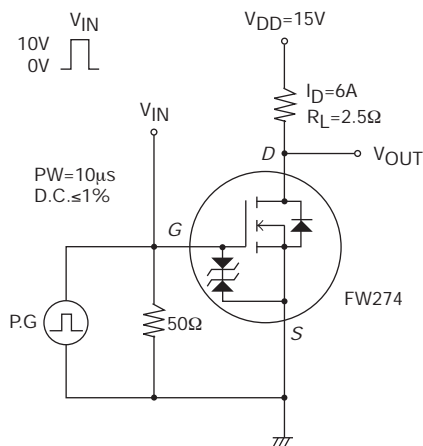
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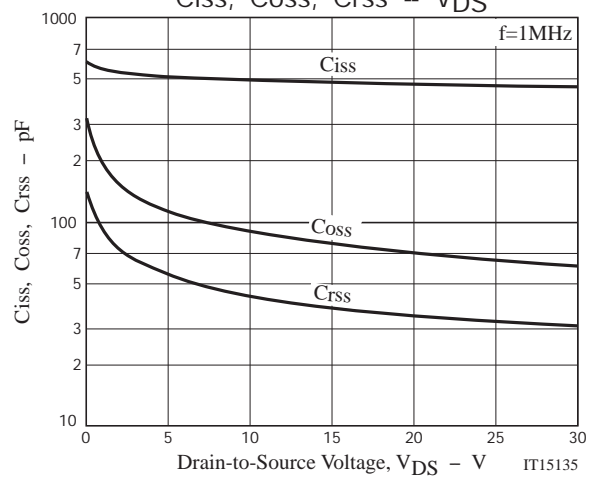
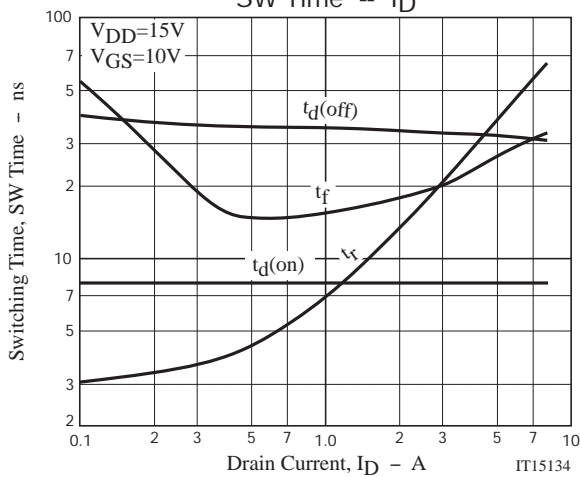
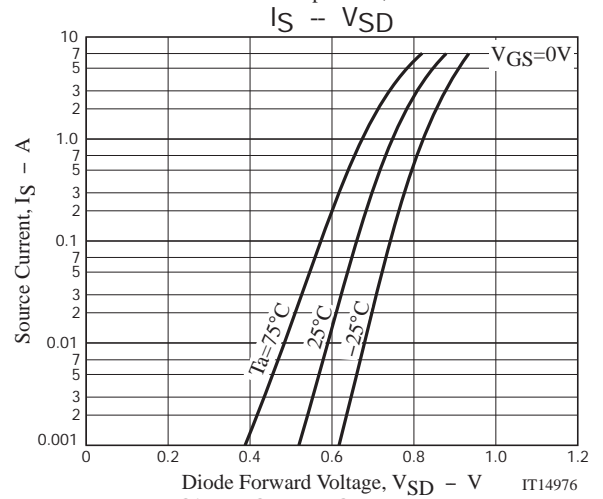
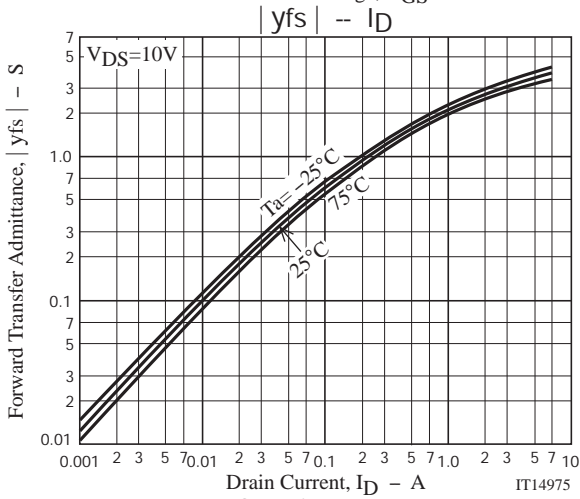
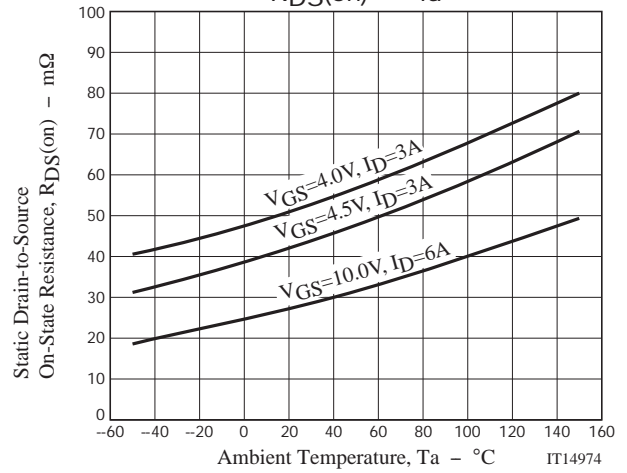
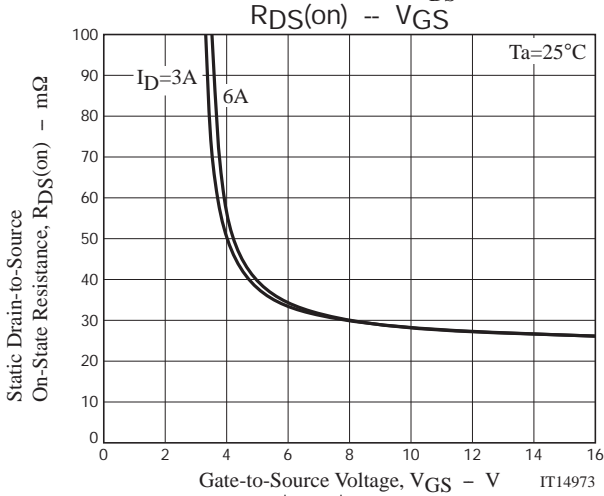
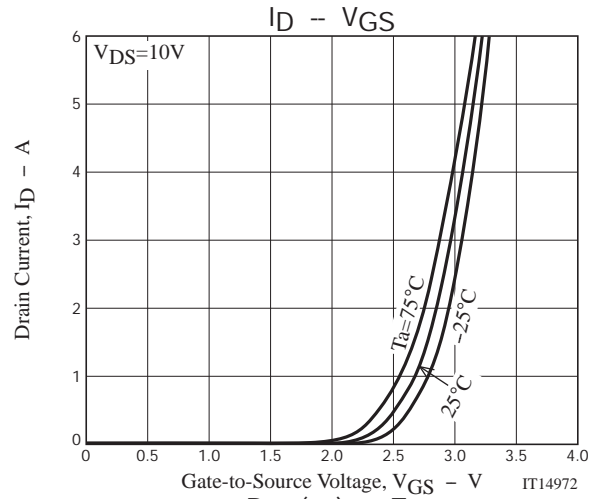
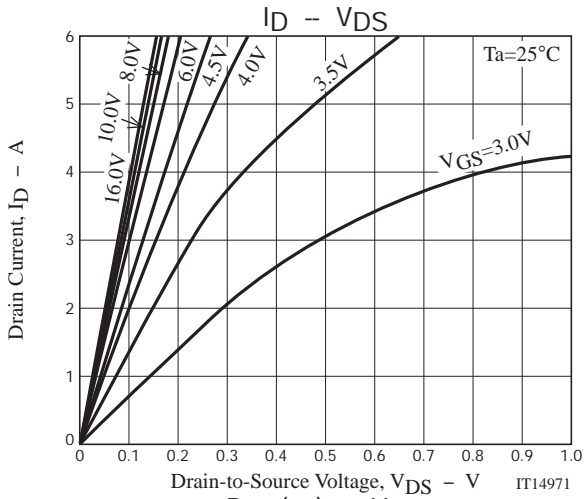


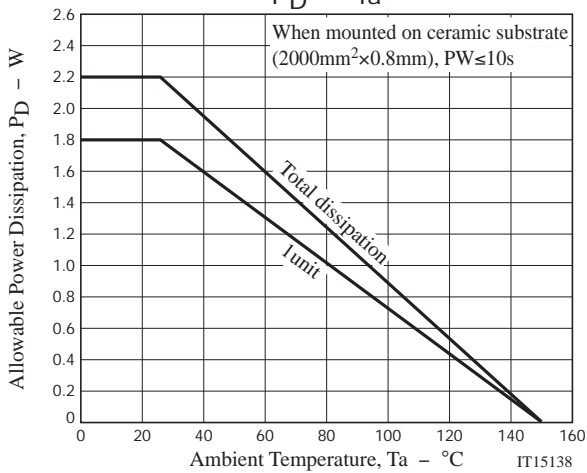
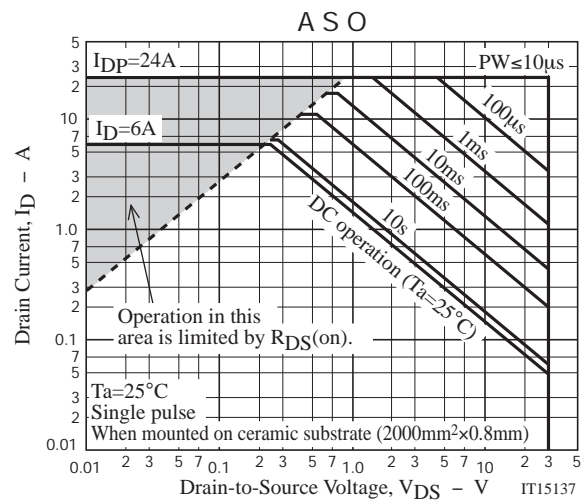
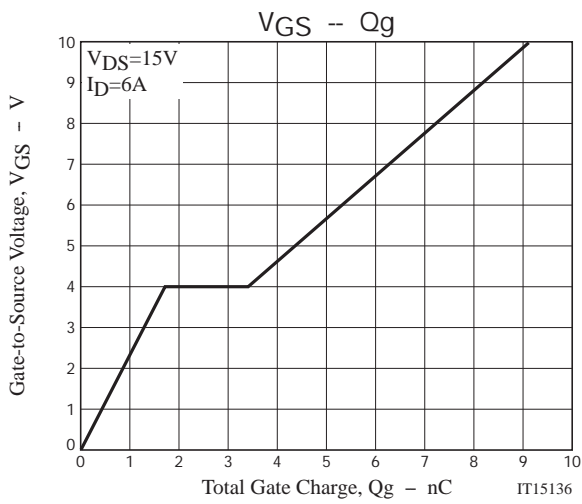
## Electrical Connection



## Switching Time Test Circuit







Note on usage : Since the FW274 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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