## **FW276**

# ON Semiconductor®

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### **N-Channel Power MOSFET** 450V, 0.7A, 12.1Ω, Dual SOIC8

#### **Features**

- On-resistance  $R_{DS}(on)=9.3\Omega(typ.)$
- Input capacitance Ciss=55pF(typ.)
- 10V drive
- Nch+Nch dual MOSFET
- Halogen free compliance

#### **Specifications**

**Absolute Maximum Ratings** at  $Tc = 25^{\circ}C$ 

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	VDSS		450	V
Gate to Source Voltage	VGSS		±30	V
Drain Current (DC)	ID		0.7	Α
	IDL*1		0.35	Α
Drain Current (PW≤10μs)	IDP	Duty cycle≤1%	2.8	Α
Power Dissipation (1 unit)	PD		1.6	W
Total Power Dissipation (2 units)	PT		2.0	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		- 55 to +150	°C
Lead Temperature for Soldering Purposes, 3mm from Case for 10 Seconds	TL		260	°C

Note: \*1 Package limited

#### **Thermal Resistance Ratings**

Parameter	Symbol	Value	Unit
Junction to Ambient (1 unit) *2	$R_{\theta JA}$	78.1	°C /W
Junction to Ambient (2 units) *2	$R_{\theta JA}$	62.5	°C /W

Note: \*2 Surface mounted on ceramic board using 2000mm<sup>2</sup>×0.8mm

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

#### **Electrical Characteristics** at Ta = 25°C

Parameter	Symbol	Conditions	Value			11.2
			min	typ	max	Unit
Drain to Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =10mA, V <sub>GS</sub> =0V	450			V
Zero-Gate Voltage Drain Current	IDSS	V <sub>DS</sub> =360V, V <sub>GS</sub> =0V			100	μΑ
Gate to Source Leakage Current	IGSS	V <sub>GS</sub> =±24V, V <sub>DS</sub> =0V			±10	μΑ
Gate Threshold Voltage	V <sub>GS</sub> (th)	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	3.5		4.5	V
Forward Transconductance	gFS .	V <sub>DS</sub> =10V, I <sub>D</sub> =0.35A		0.4		S
Static Drain to Source On-State Resistance	R <sub>DS</sub> (on)	I <sub>D</sub> =0.35A, V <sub>GS</sub> =10V		9.3	12.1	Ω
Input Capacitance	Ciss			55		pF
Output Capacitance	Coss	V <sub>DS</sub> =20V, f=1MHz		24		pF
Reverse Transfer Capacitance	Crss	7		8		pF

Continued on next page.

#### **ORDERING INFORMATION**

See detailed ordering and shipping information on page 5 of this data sheet.

Continued from preceding page.

		0 1111	Value			
Parameter	Symbol	Conditions	min	typ	max	Unit
Turn-ON Delay Time	t <sub>d</sub> (on)			7		ns
Rise Time	t <sub>r</sub>	See Fig.1		10		ns
Turn-OFF Delay Time	t <sub>d</sub> (off)			15		ns
Fall Time	tf			46		ns
Total Gate Charge	Qg			3.7		nC
Gate to Source Charge	Qgs	V <sub>DS</sub> =200V, V <sub>GS</sub> =10V, I <sub>D</sub> =0.7A		1		nC
Gate to Drain "Miller" Charge	Qgd			1.6		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =0.7A, V <sub>GS</sub> =0V		0.85	1.2	V
Reverse Recovery Time	t <sub>rr</sub>	See Fig.2		76		ns
Reverse Recovery Charge	Qrr	I <sub>S</sub> =0.7A, V <sub>GS</sub> =0V, di/dt=100A/μs		210		nC

Fig.1 Switching Time Test Circuit

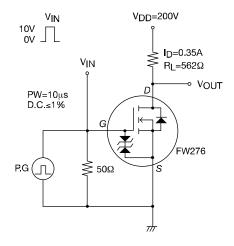
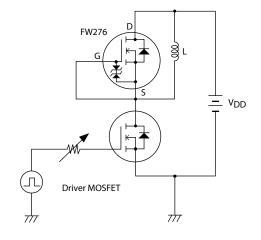
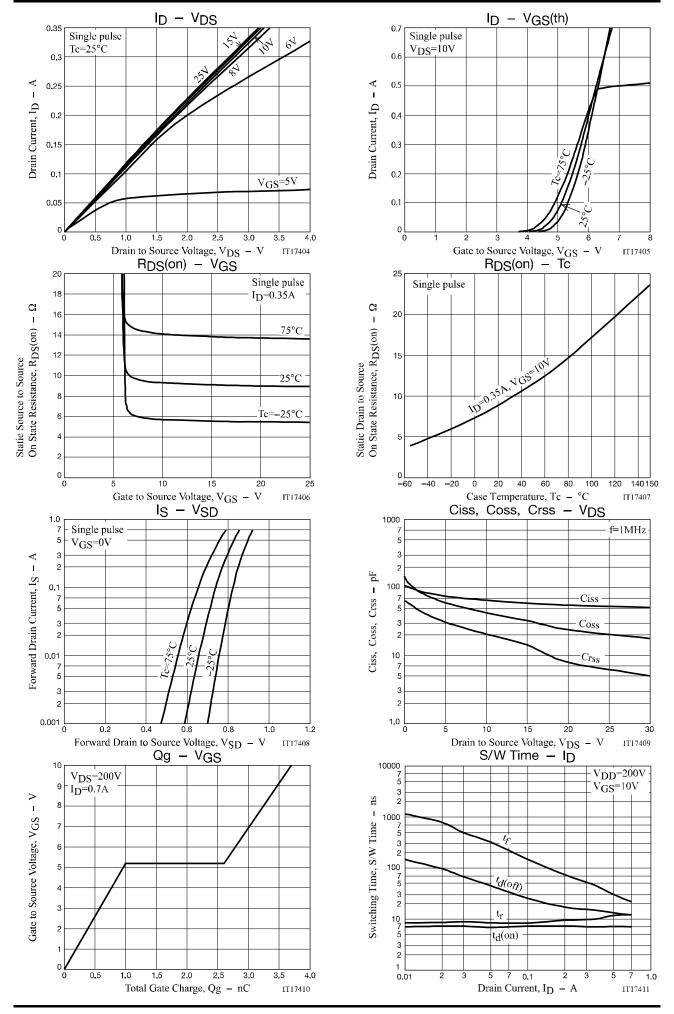
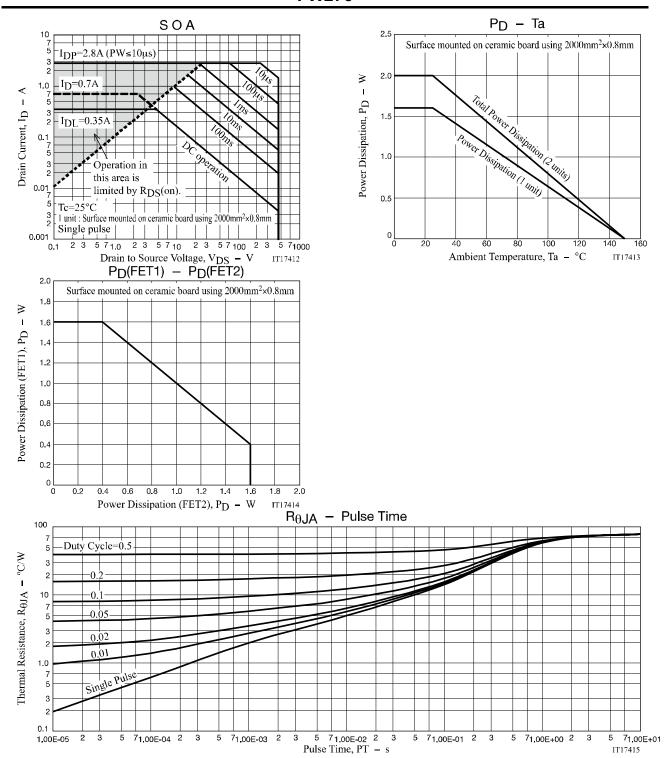


Fig.2 Reverse Recovery Time Test Circuit







#### **Package Dimensions**

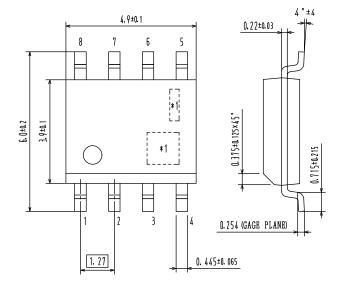
FW276-TL-2H

#### SOIC-8

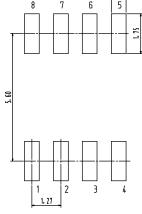
CASE 751CR ISSUE O

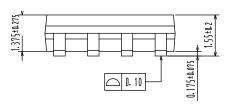
Unit: mm

- 1: Source1
- 2: Gate1
- 3: Source2
- 4: Gate2
- 5: Drain2
- 6: Drain2
- 7: Drain1
- 8: Drain1



# Recommended Soldering Footprint



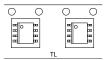


\*1:Lot indication

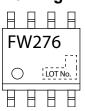
#### **Ordering & Package Information**

Device	Package	Shipping	note
FW276-TL-2H	SOIC8 (SC-87, SOT-96)	2,500 pcs. / reel	Pb-Free and Halogen Free

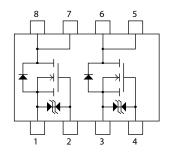
#### Packing Type:TL



#### Marking



#### **Electrical Connection**



Note on usage: Since the FW276 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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