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ON Semiconductor®

<http://onsemi.com>

FW276

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

Features

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

Specifications

Absolute Maximum Ratings at $T_c = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	V_{DSS}		450	V
Gate to Source Voltage	V_{GSS}		± 30	V
Drain Current (DC)	I_D		0.7	A
	I_{DL}^{*1}		0.35	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	Duty cycle $\leq 1\%$	2.8	A
Power Dissipation (1 unit)	P_D		1.6	W
Total Power Dissipation (2 units)	P_T		2.0	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes, 3mm from Case for 10 Seconds	T_L		260	$^\circ\text{C}$

Note: *1 Package limited

Thermal Resistance Ratings

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

Note: *2 Surface mounted on ceramic board using $2000\text{mm}^2 \times 0.8\text{mm}$

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 $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}, V_{GS}=0\text{V}$	450			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=360\text{V}, V_{GS}=0\text{V}$			100	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 24\text{V}, V_{DS}=0\text{V}$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	3.5		4.5	V
Forward Transconductance	g_{FS}	$V_{DS}=10\text{V}, I_D=0.35\text{A}$		0.4		S
Static Drain to Source On-State Resistance	$R_{DS(on)}$	$I_D=0.35\text{A}, V_{GS}=10\text{V}$		9.3	12.1	Ω
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}, f=1\text{MHz}$		55		pF
Output Capacitance	C_{oss}				24	pF
Reverse Transfer Capacitance	C_{rss}				8	pF

Continued on next page.

ORDERING INFORMATION

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

FW276

Continued from preceding page.

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See Fig.1		7		ns
Rise Time	t_r			10		ns
Turn-OFF Delay Time	$t_{d(off)}$			15		ns
Fall Time	t_f			46		ns
Total Gate Charge	Q_g			3.7		nC
Gate to Source Charge	Q_{gs}	$V_{DS}=200V, V_{GS}=10V, I_D=0.7A$		1		nC
Gate to Drain "Miller" Charge	Q_{gd}			1.6		nC
Diode Forward Voltage	V_{SD}		$I_S=0.7A, V_{GS}=0V$		0.85	1.2
Reverse Recovery Time	t_{rr}	See Fig.2		76		ns
Reverse Recovery Charge	Q_{rr}	$I_S=0.7A, V_{GS}=0V, di/dt=100A/\mu s$		210		nC

Fig.1 Switching Time Test Circuit

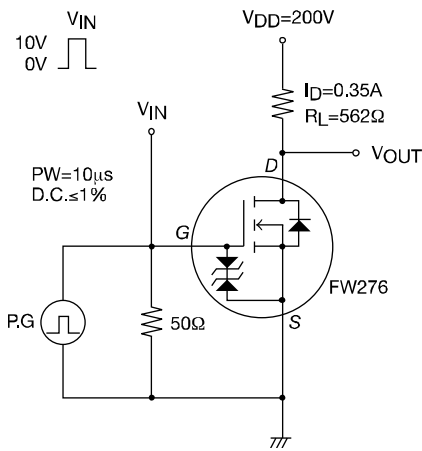
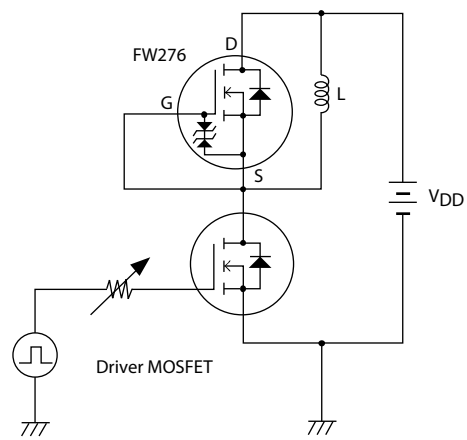
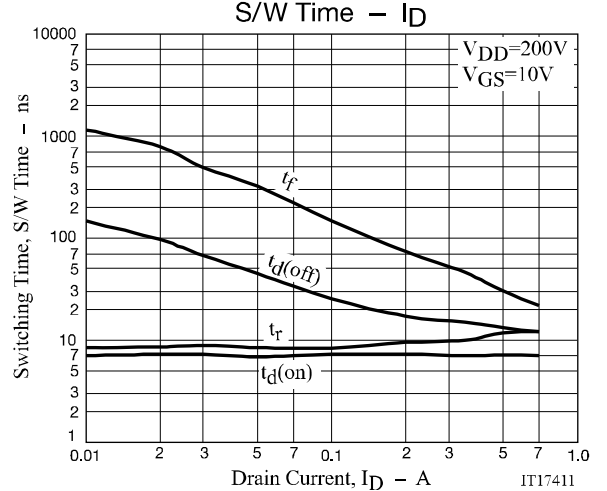
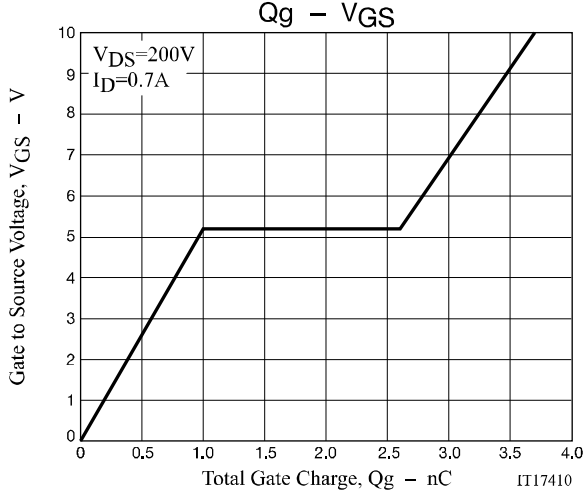
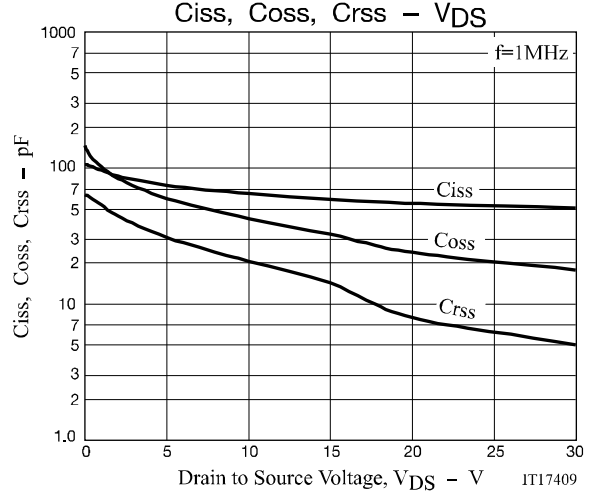
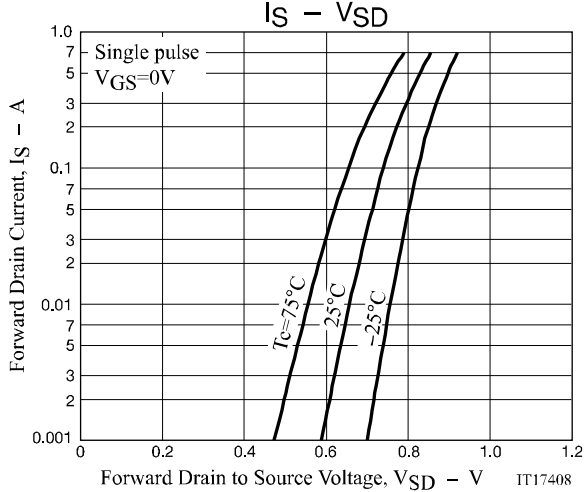
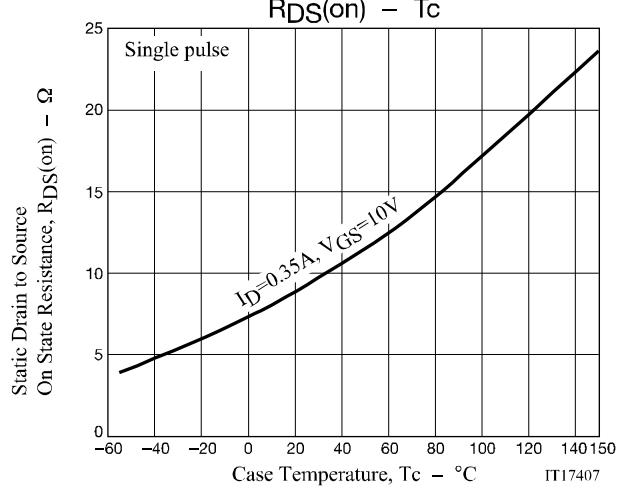
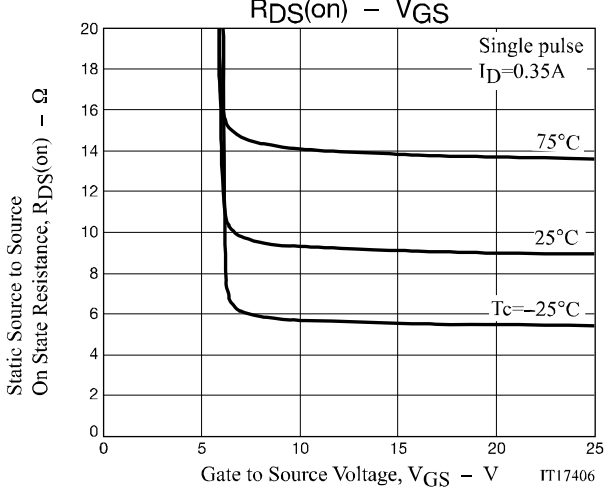
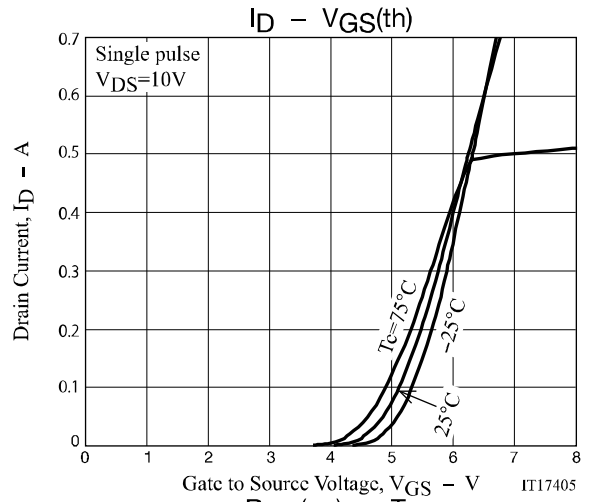
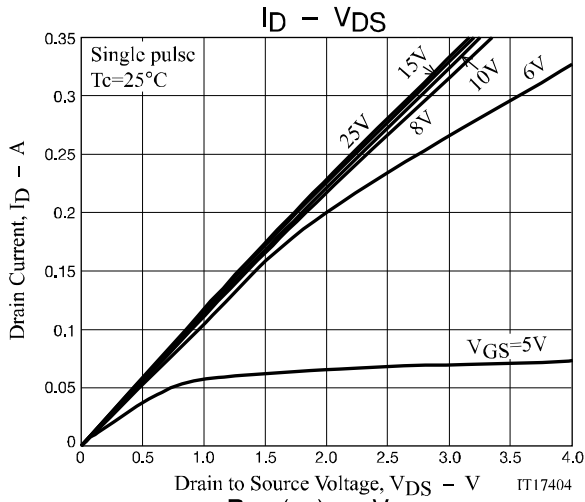
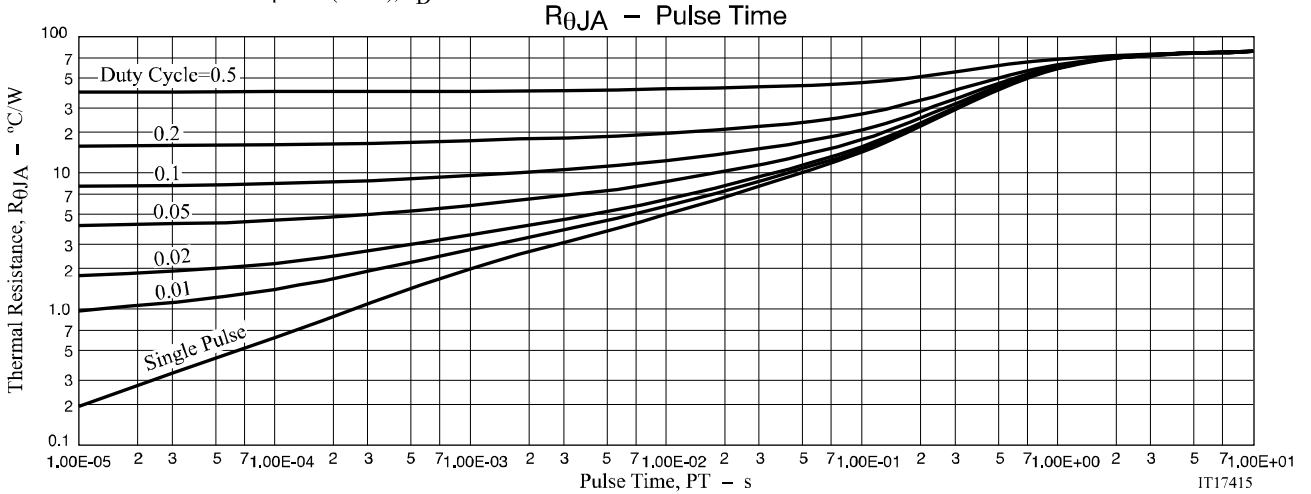
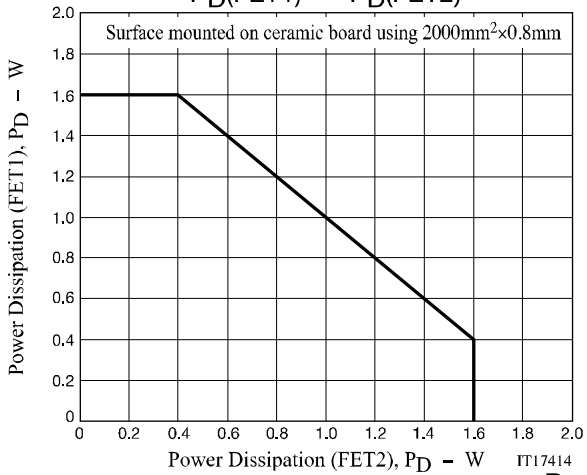
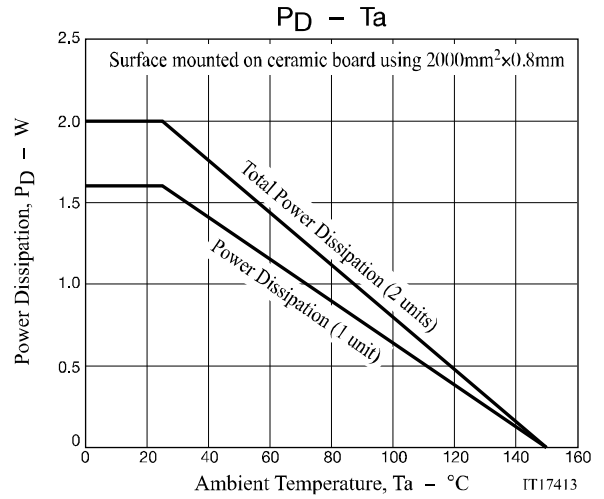
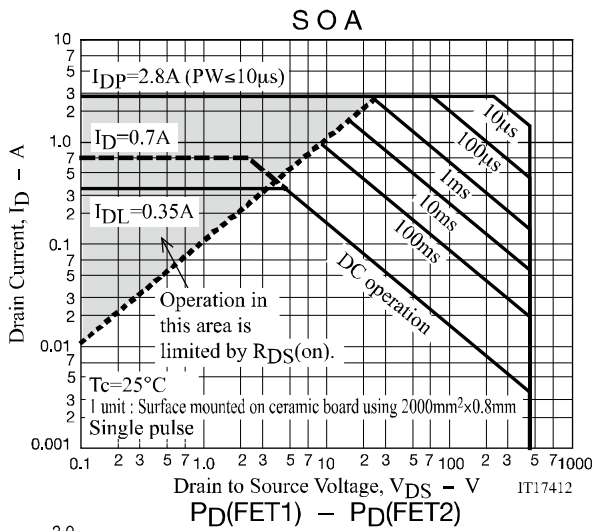


Fig.2 Reverse Recovery Time Test Circuit







Package Dimensions

FW276-TL-2H

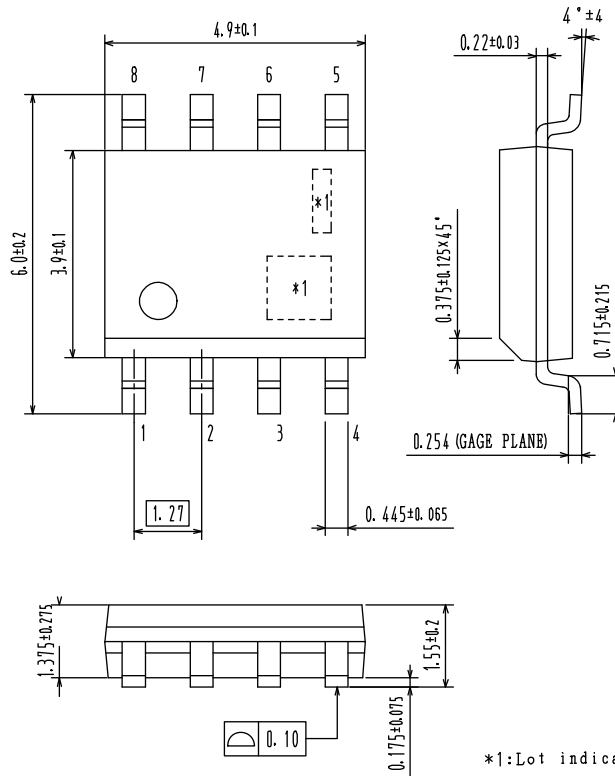
SOIC-8

CASE 751CR

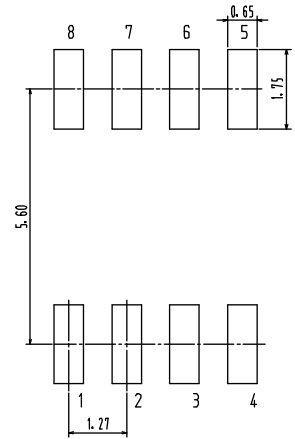
ISSUE O

Unit : mm

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



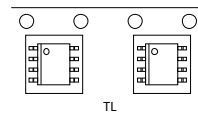
Recommended Soldering Footprint



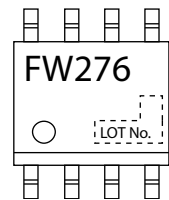
Ordering & Package Information

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

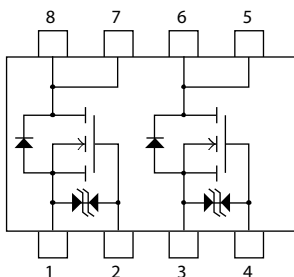
Packing Type:TL



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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