Ordering number : ENA2289

FW276

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

ON Semiconductor®

http://onsemi.com

Features

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

Specifications

Absolute Maximum Ratings at Tc = 25°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≤10μs)	I_{DP}	Duty cycle≤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	Tj		150	°C
Storage Temperature	Tstg		- 55 to +150	°C
Lead Temperature for Soldering Purposes, 3mm from Case for 10 Seconds	T_L		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^2×0.8mm

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

Continued on next page.

ORDERING INFORMATION

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

Semiconductor Components Industries, LLC, 2014
March, 2014

30414 TKIM TC-00003100 No. A2289-1/6

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	Qg	V_{DS}=200V, V_{GS}=10V, I_D=0.7A		3.7		nC
Gate to Source Charge	Qgs			1		nC
Gate to Drain “Miller” Charge	Qgd			1.6		nC
Diode Forward Voltage	V_{SD}	I_S=0.7A, V_{GS}=0V		0.85	1.2	V
Reverse Recovery Time	t_{rr}	See Fig.2		76		ns
Reverse Recovery Charge	Qrr	I_S=0.7A, V_{GS}=0V, di/dt=100A/μs		210		nC

Fig.1 Switching Time Test Circuit

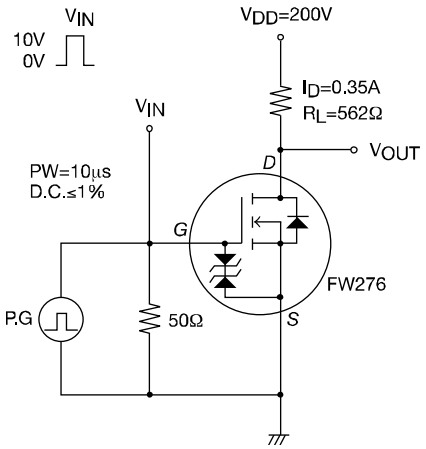
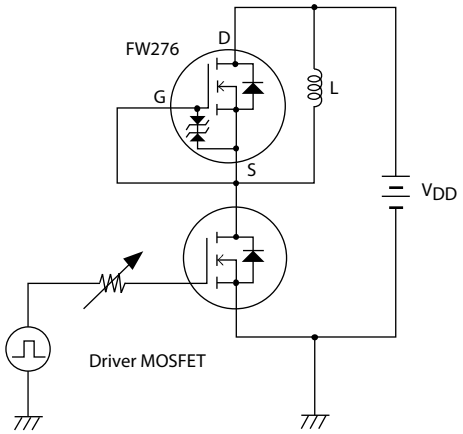
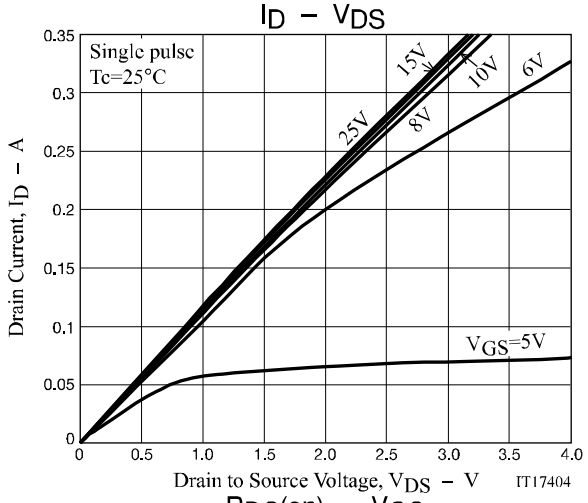
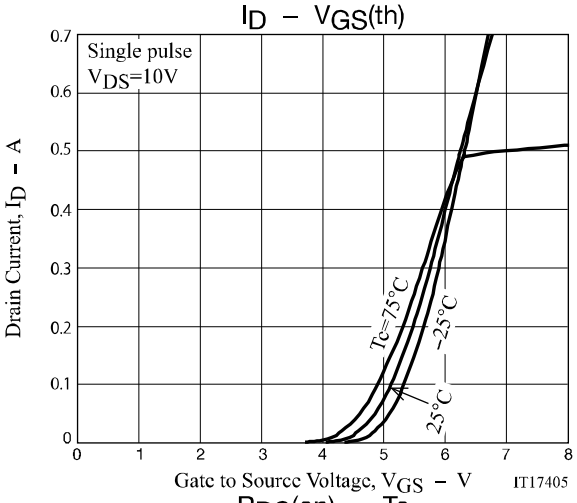
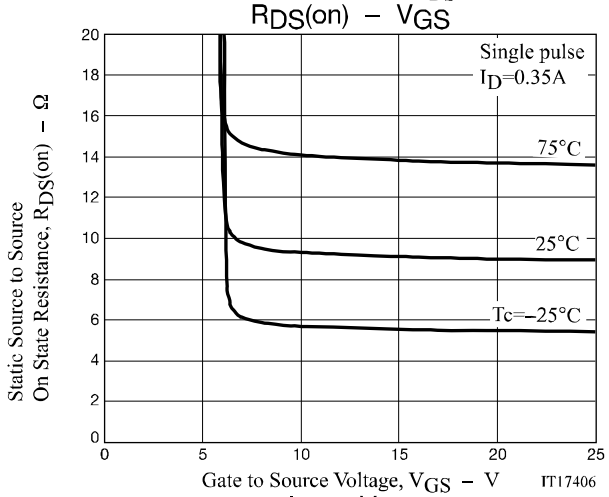


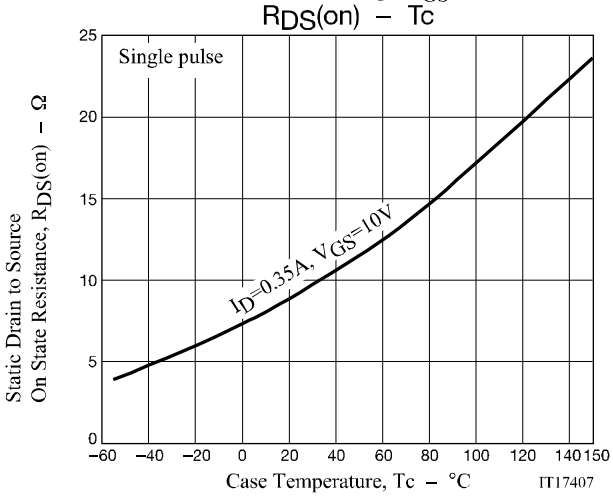
Fig.2 Reverse Recovery Time Test Circuit

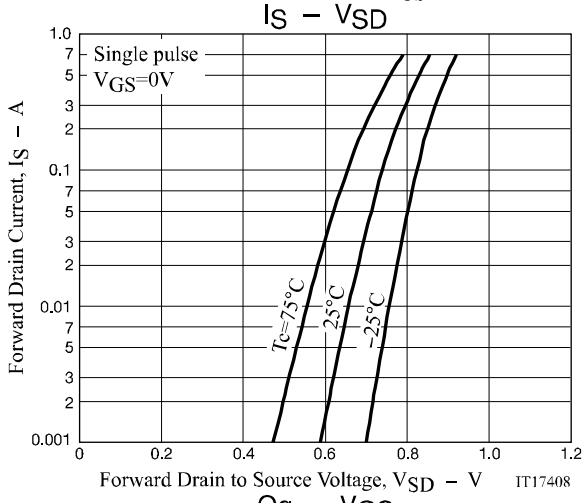


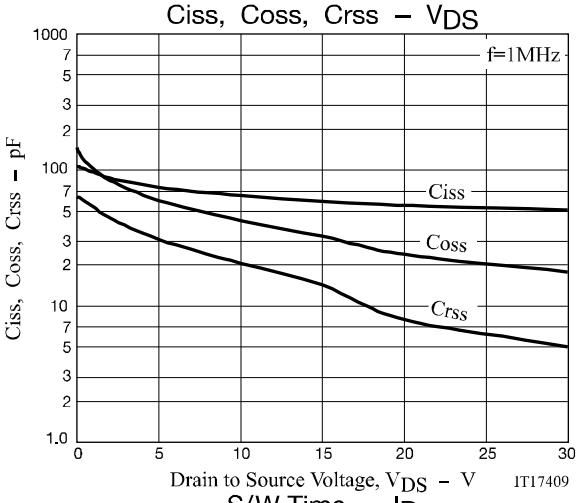

ID – VDS
Single pulse
Tc=25°C
15V
10V
6V
25V
8V
VGS=5V
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT17404

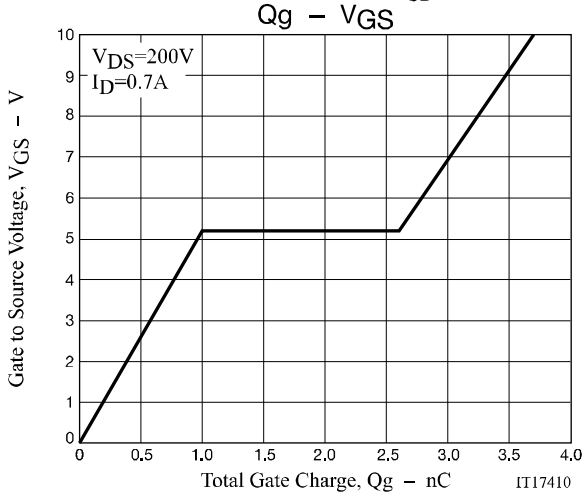

ID – VGS(th)
Single pulse
VDS=10V
Tc=75°C
25°C
–25°C
Drain Current, ID – A
Gate to Source Voltage, VGS – V
IT17405

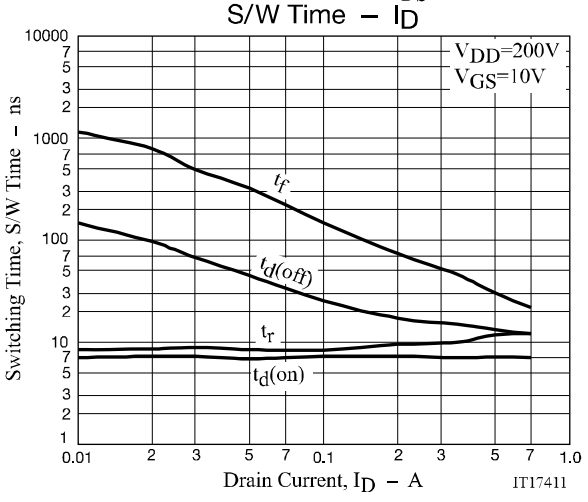

RDS(on) – VGS
Single pulse
ID=0.35A
75°C
25°C
Tc=–25°C
Static Source to Source
On State Resistance, RDS(on) – Ω
Gate to Source Voltage, VGS – V
IT17406


RDS(on) – Tc
Single pulse
ID=0.35A, VGS=10V
Static Drain to Source
On State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C
IT17407

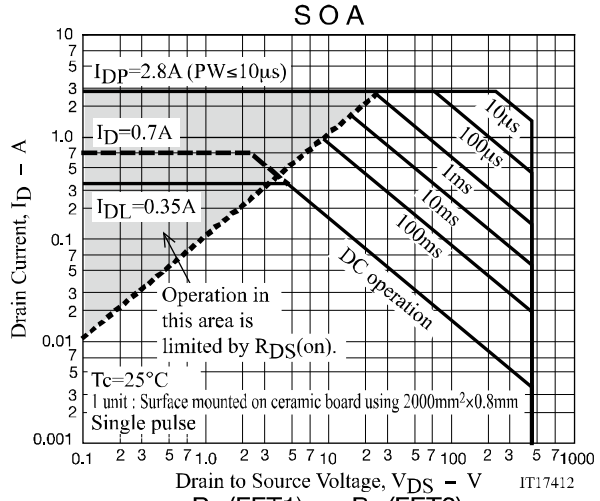

IS – VSD
Single pulse
VGS=0V
Tc=75°C
25°C
–25°C
Forward Drain Current, IS – A
Forward Drain to Source Voltage, VSD – V
IT17408


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain to Source Voltage, VDS – V
IT17409

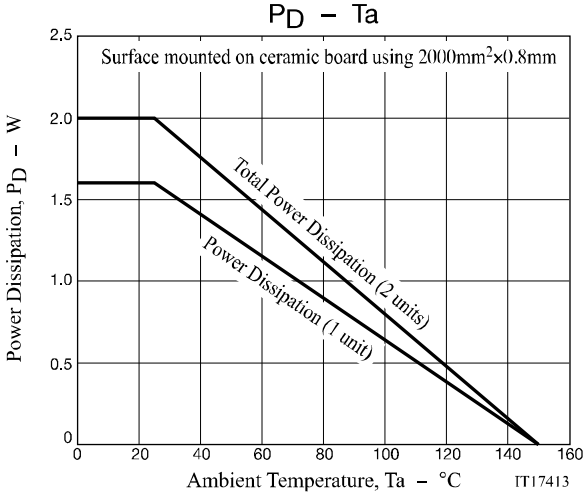

Qg – VGS
VDS=200V
ID=0.7A
Gate to Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT17410


S/W Time – ID
VDD=200V
VGS=10V
tf
td(off)
tr
td(on)
Switching Time, S/W Time – ns
Drain Current, ID – A
IT17411

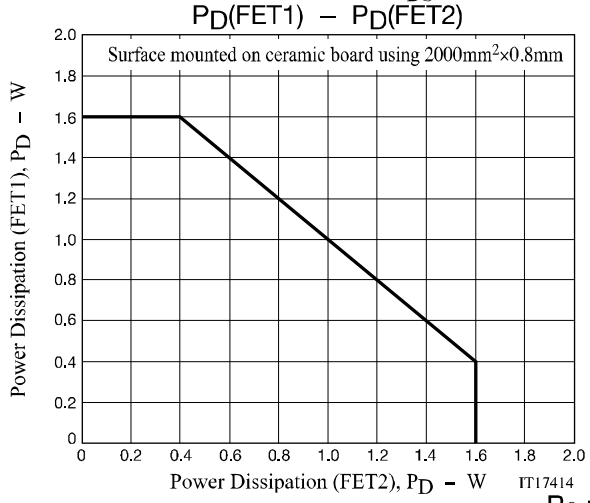
S O A



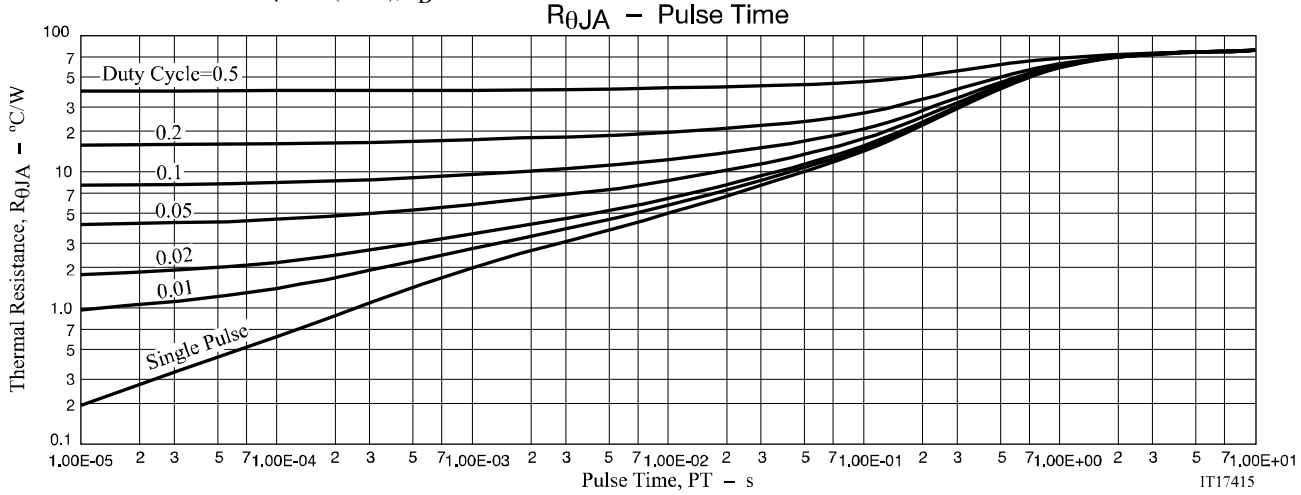
PD – Ta



PD(FET1) – PD(FET2)



RθJA – Pulse Time



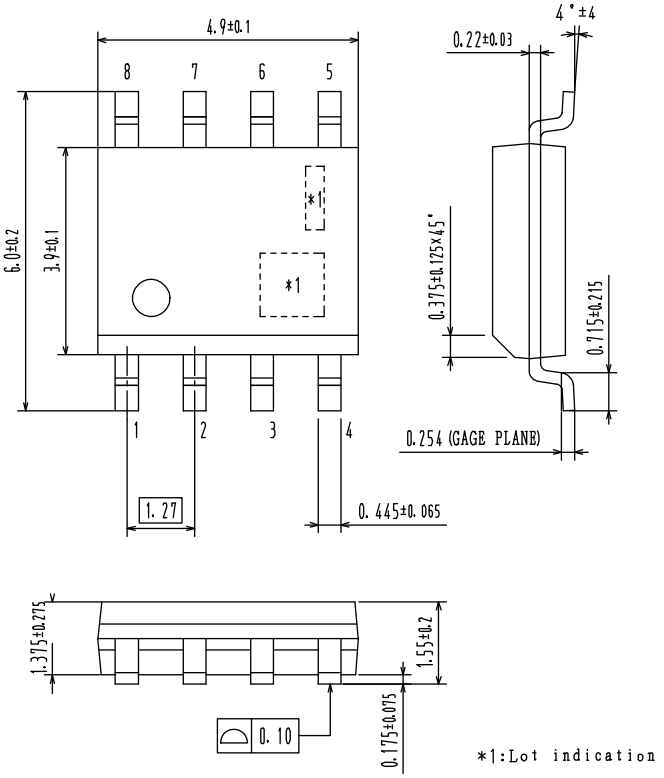
Package Dimensions

FW276-TL-2H

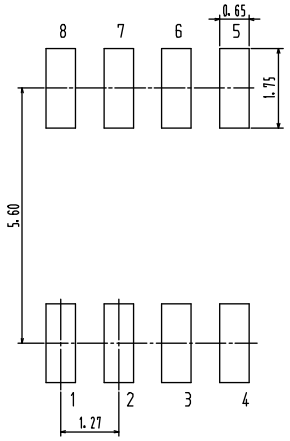
SOIC-8

CASE 751CR
ISSUE O
Unit : mm

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



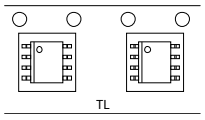
Recommended Soldering Footprint



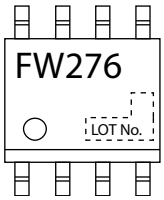
Ordering & Package Information

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

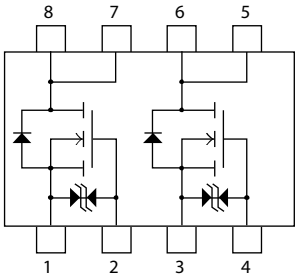
Packing Type:TL



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.