

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	FDD6776A
▶ Overseas	Part Number	FDD6776A
▶ Equivalent	Part Number	FDD6776A

EV is the abbreviation of name EVVO

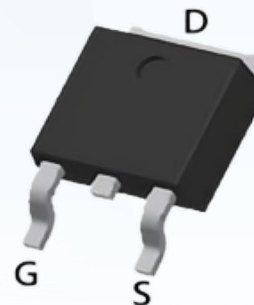
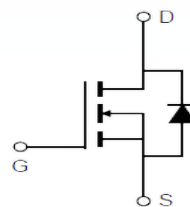
V _{DSS} (V)	R _{DS} (ON)	I _D (A)
20	6.3mΩ(Typ)@V _{GS} =4.5V	60
	8.8mΩ(Typ)@V _{GS} =2.5V	

FEATURE:

- The FDD6776A is the high cell density
trenched N-ch MOSFETS, which provide excellent
R_{DS(ON)} and gate charge for most of the
synchronous buck converter applications.

APPLICATIONS:

- Load Switch
- solar road lights

Pin Description

TO-252

Absolute Maximum Ratings

Symbol	Parameter		Rating	Units
V _{DSS}	Drain-Source Voltage		20	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current(V _{GS} = 4.5V)	T _A =25°C	60	A
		T _A =70°C	33	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _{DM}	Pulsed Drain Current		210	A
P _D	Maximum Power Dissipation	T _A =25°C	35	W
		T _A =70°C	----	
E _{AS}	Avalanche Energy, Single Pulsed		36	mJ
R _{θJC}	Thermal Resistance-Junction to Case		---	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient		4.8	°C/W

Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	20	---	---	V
V _{GS(th)}	Gate threshold voltage	V _{DS} =V _{GS} ,I _D =250uA	0.4	0.6	1.1	V
R _{DS(ON)}	Drain-Source On-state Resistance	V _{GS} =4.5V , I _D =25A	---	6.3	8	mΩ
		V _{GS} =2.5V , I _D =10A	---	8.8	13	mΩ
I _{GSS}	Gate-source leakage current	V _{GS} =±12V , V _{DS} =0V	---	---	±100	A
I _{DSS}	Zero gate voltage drain current	V _{DS} =20V,V _{GS} =0V,T _J =25°C	---	---	1	μA
		T _J =55°C	---	---	---	
Dynamic Characteristic						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V, Frequency=1.0MHz	---	1458	---	pF
C _{oss}	Output Capacitance		---	238	---	
C _{rss}	Reverse Transfer Capacitance		---	212	---	
Q _G	Gate Total Charge	V _{DS} =15V, V _{GS} =4.5V, I _{DS} =25A	---	19	---	nC
Q _{gs}	Gate-Source charge		---	3	---	
Q _{gd}	Gate-Drain charge		---	6.4	---	
t _{d(on)}	Turn-on delay time	V _{DD} =10V , V _{GS} =4.5V , R _G =3.3Ω, I _D =10A	---	10	---	ns
t _r	Turn-on Rise Time		---	21	---	
t _{d(off)}	Turn-off Delay Time		---	39	---	
t _f	Turn-off Fall Time		---	19	---	
R _G	Gate Resistance	V _{GS} =0V,V _{DS} =0V,F=1MHz	---	---	---	Ω
Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =-1A , T _J =25°C	---	---	1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} =-20A, dI _{SD} /dt=-100A/μs	---	25	---	ns
Q _{rr}	Reverse Recovery Charge		---	20	---	nC

Typical Electrical and Thermal Characteristics

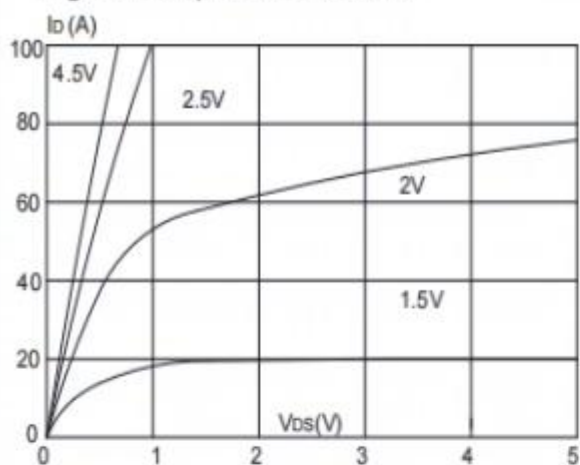
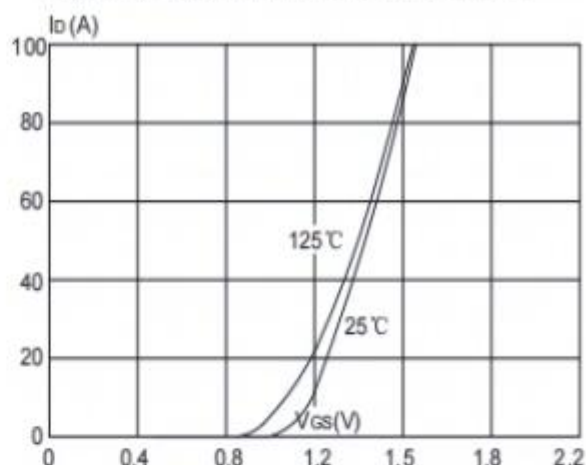
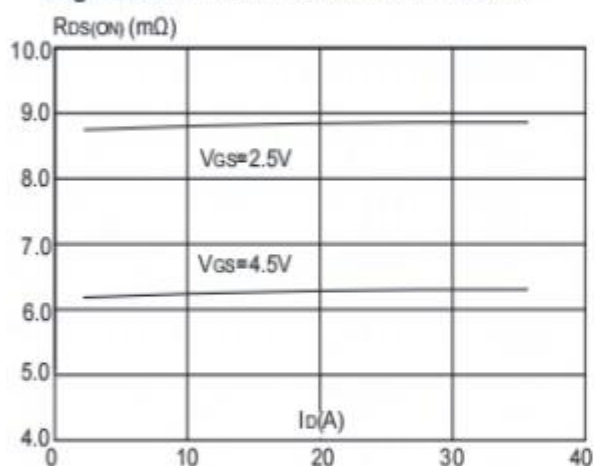
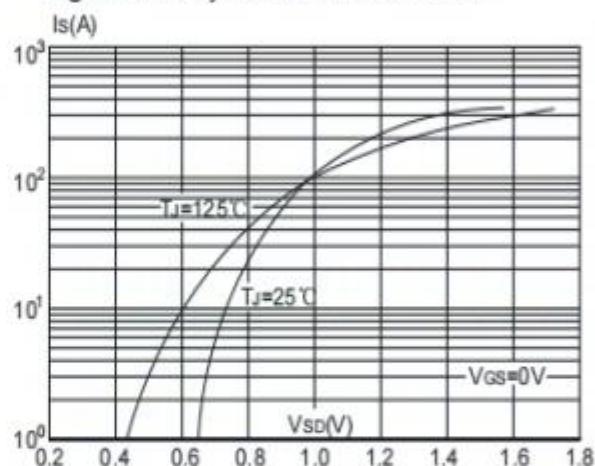
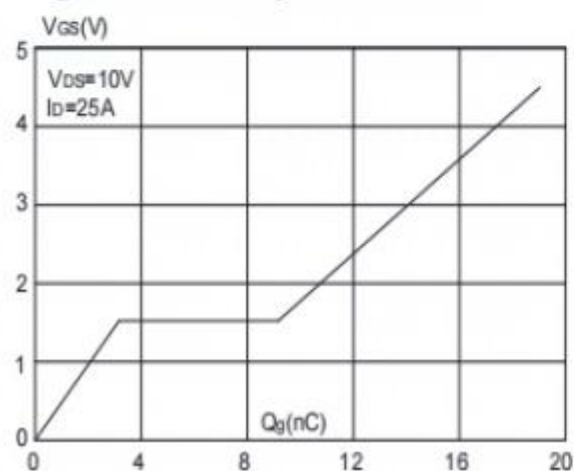
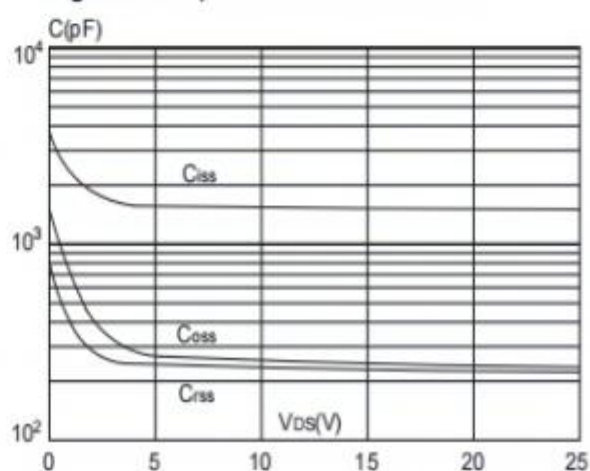
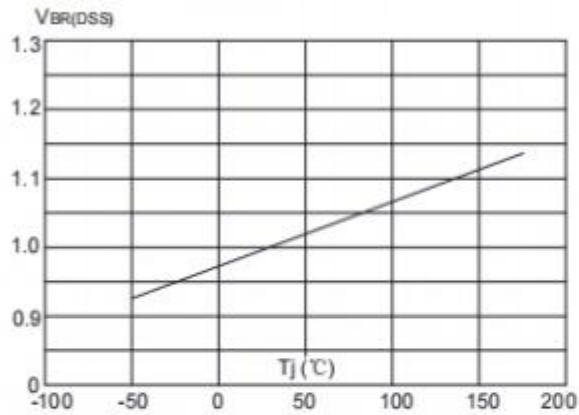
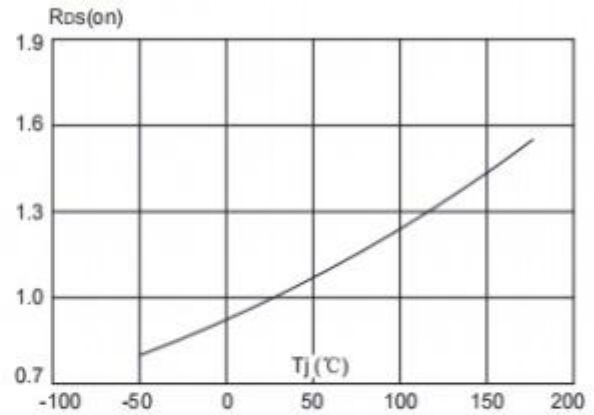
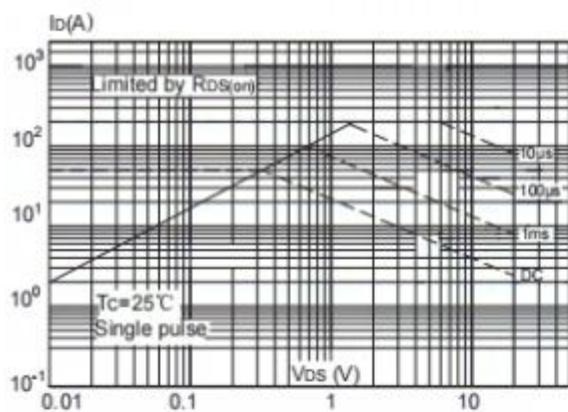
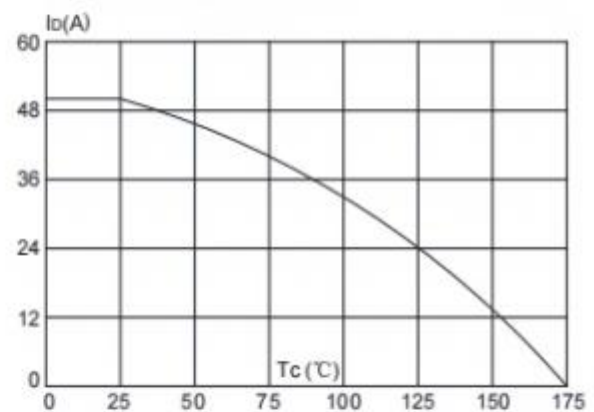
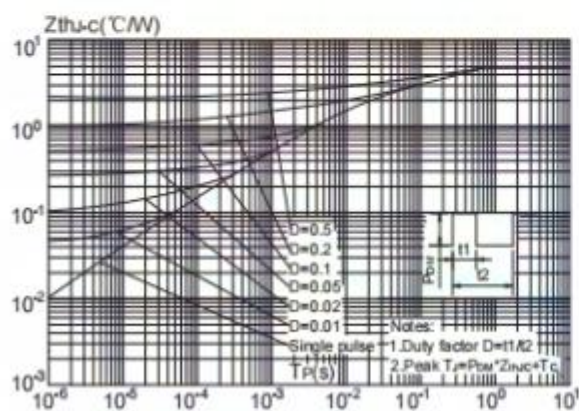
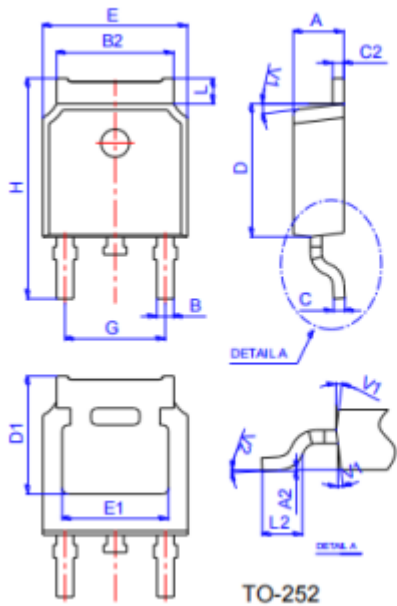
Figure1: Output Characteristics

Figure 2: Typical Transfer Characteristics

Figure 3: On-resistance vs. Drain Current

Figure 4: Body Diode Characteristics

Figure 5: Gate Charge Characteristics

Figure 6: Capacitance Characteristics


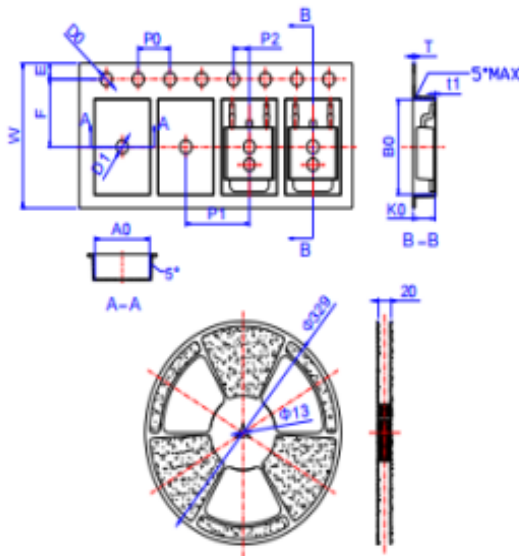
Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

Figure 8: Normalized on Resistance vs. Junction Temperature

Figure 9: Maximum Safe Operating Area

Figure 10: Maximum Continuous Drain Current vs. Case Temperature

Figure 11: Maximum Effective Transient Thermal Impedance, Junction-to-Case


Package Mechanical Data:TO-252-3L



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

Reel Spectification-TO-252



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	15.90	16.00	16.10	0.626	0.630	0.634
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
D0	1.40	1.50	1.60	0.055	0.059	0.063
D1	1.40	1.50	1.60	0.055	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	6.85	6.90	7.00	0.270	0.271	0.276
B0	10.45	10.50	10.60	0.411	0.413	0.417
K0	2.68	2.78	2.88	0.105	0.109	0.113
T	0.24		0.27	0.009		0.011
t1	0.10			0.004		
10P0	39.80	40.00	40.20	1.567	1.575	1.583

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