EVVOSEMI®
THINK CHANGE DO

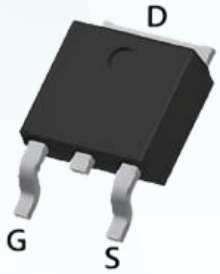
ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

Domestic Part Number	FDD6676AS
Overseas Part Number	FDD6676AS
Equivalent Part Number	FDD6676AS

V_{DSS}（V）	$R_{DS\ (ON)}$	$I_{D(A)}$
30	4.2mΩ(Typ)@VGS=10V	80
	6.7mΩ(Typ)@VGS=4.5V	

Pin Description



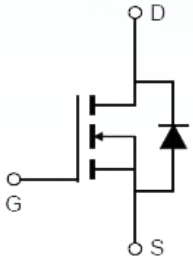
TO-252

FEATURE:

•The FDD6676AS is the high cellde nsity trenched N -ch MOSFETS,whichpro videsex cellent R_{DSON} and efficie ncyfor mostof thes mall power switching and load swit chap plications.

APPLICATIONS:

• Load Switch



Absolute Maximum Ratings

Symbol	Parameter		Rating	Units
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current(V_{GS}= -4.5V)	Tc=25°C	80	A
		T_c=70°C	50	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_{DM}	Pulsed Drain Current		192	A
P_D	Maximum Power Dissipation	T_c=25°C	62.5	W
		T_c=70°C	---	
E_{AS}	Avalanche Energy, Single Pulsed		144.7	mJ
RθJC	Thermal Resistance-Junction to Case		2.4	°C/W
RθJA	Thermal Resistance-Junction to Ambient		---	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250uA	30	---	---	V
VGS(th)	Gate threshold voltage	VDS=VGS,ID=250uA	1.0	1.5	2.5	V
RDS(ON)	Drain-Source On-state Resistance	VGS=10V , ID=30A	---	4.2	5.5	mΩ
		VGS=4.5V , ID=25A	---	6.7	9	mΩ
IGSS	Gate-source leakage current	VGS=±20V , VDS=0V	---	---	±100	A
IDSS	Zero gate voltage drain current	VDS=30V,VGS=0V,TJ=25℃	---	---	1	μA
		TJ=55℃	---	---	---	
Dynamic Characteristic						
Ciss	Input Capacitance	VGS=0V, VDS=15V, Frequency=1.0MHz	---	3075	---	pF
Coss	Output Capacitance		---	400	---	
Crss	Reverse Transfer Capacitance		---	315	---	
QG	Gate Total Charge	VDS=15V, VGS=4.5V, IDS=15A	---	31.6	---	nC
Qgs	Gate-Source charge		---	8.6	---	
Qgd	Gate-Drain charge		---	11.7	---	
td(on)	Turn-on delay time	VDD=15V , VGS=10V , RG=3.3Ω, ID=15A	---	9	---	ns
tr	Turn-on Rise Time		---	19	---	
td(off)	Turn-off Delay Time		---	58	---	
tf	Turn-off Fall Time		---	15.2	---	
RG	Gate Resistance	VGS=0V,VDS=0V,F=1MHz	---	---	---	Ω
Diode Characteristics						
VSD	Diode Forward Voltage	VGS=0V , IS=1A , TJ=25℃	---	---	1.2	V
trr	Reverse Recovery Time	ISD=4.1A, dISD/dt=-100A/μs	---	18	---	ns
Qrr	Reverse Recovery Charge		---	8	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

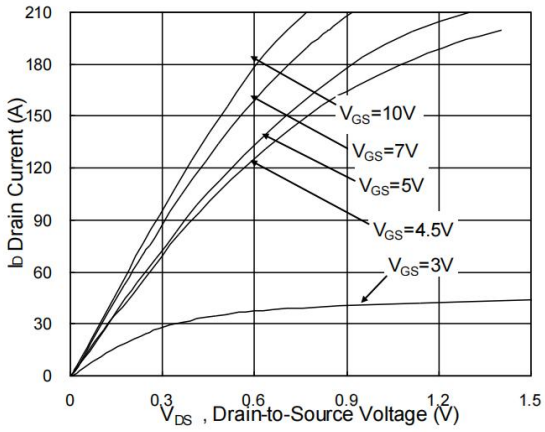


Fig.1 Typical Output Characteristics

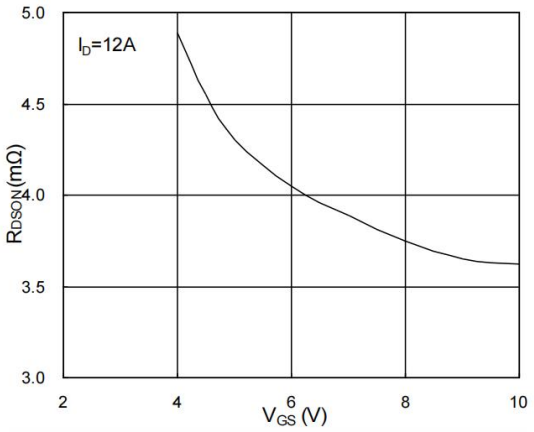


Fig.2 On-Resistance vs. G-S Voltage

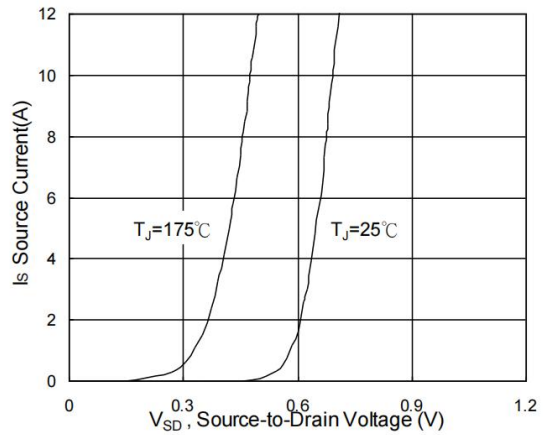


Fig.3 Forward Characteristics of Reverse

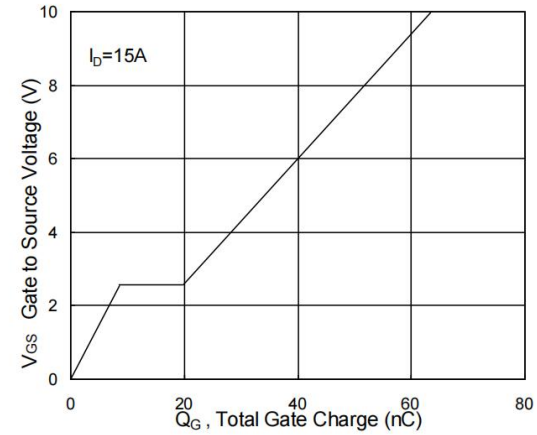


Fig.4 Gate-Charge Characteristics

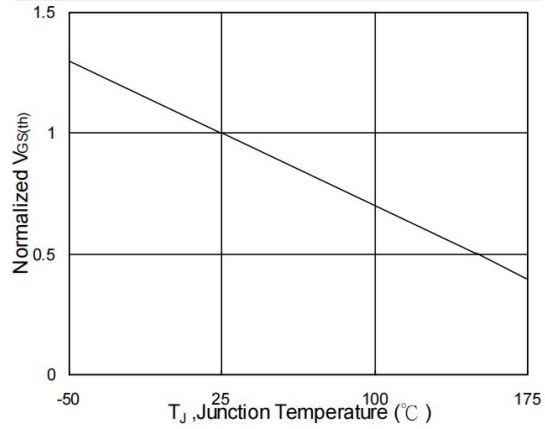


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

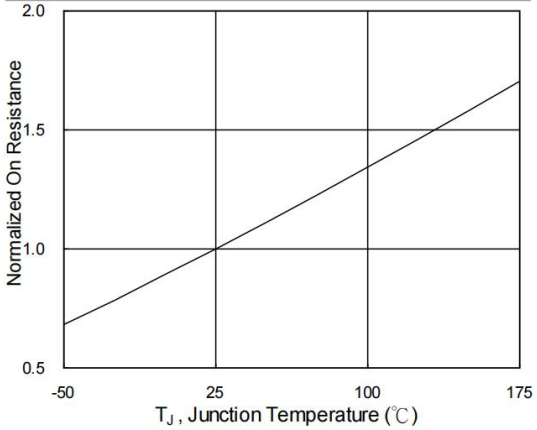


Fig.6 Normalized R_{DSON} vs. T_J

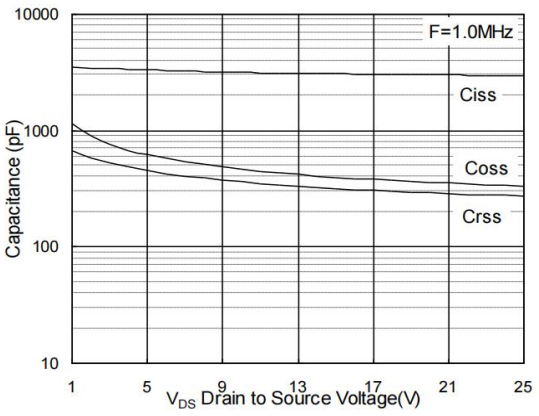


Fig.7 Capacitance

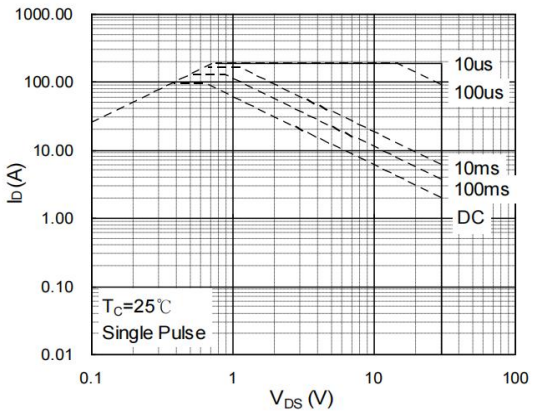


Fig.8 Safe Operating Area

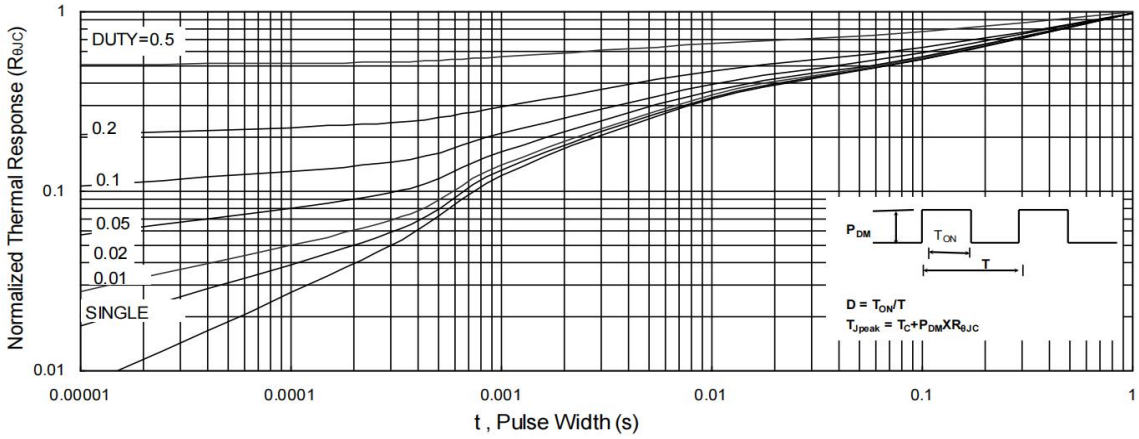


Fig.9 Normalized Maximum Transient Thermal Impedance

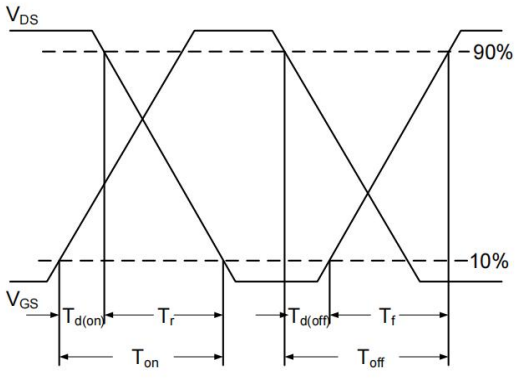


Fig.10 Switching Time Waveform

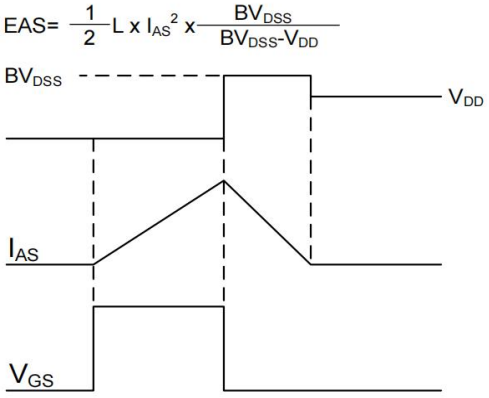
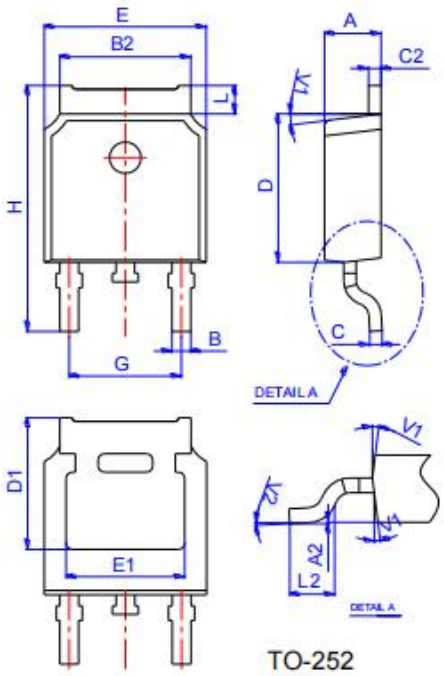


Fig.11 Unclamped Inductive Switching Waveform

Package Mechanical Data:TO-252-3L



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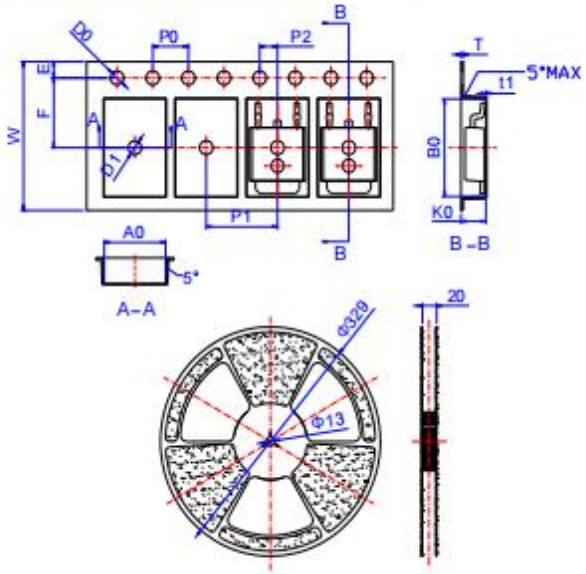
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
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 Specification-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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