

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

▶ Domestic	Part Number	FDD6670A
▶ Overseas	Part Number	FDD6670A
▶ Equivalent	Part Number	FDD6670A

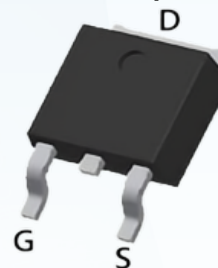
EV is the abbreviation of name EVVO

V <sub>DSS</sub> (V)	R <sub>DS (ON)</sub>	I <sub>D(A)</sub>
30	7.6mΩ(Typ)@V <sub>GS</sub> =10V	50
	11.5mΩ(Typ)@V <sub>GS</sub> =4.5V	

### FEATURE:

- The FDD6670A is the high cell density trenched N-ch MOSFETS, which provides excellent R<sub>DS ON</sub> and efficiency for most of the small power switching and load switch applications.

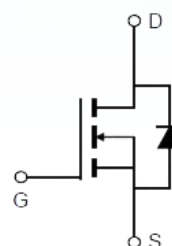
### Pin Description



T0-252

### APPLICATIONS:

- Load Switch



## Absolute Maximum Ratings

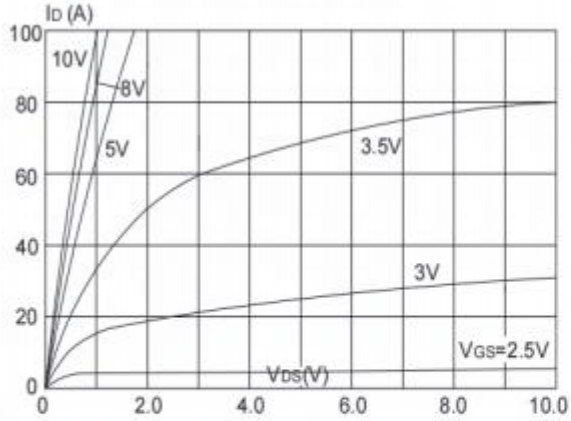
Symbol	Parameter	Rating	Units
V <sub>DSS</sub>	Drain-Source Voltage	30	V
V <sub>GSS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Continuous Drain Current(V <sub>GS</sub> = -4.5V)	T <sub>A</sub> =25°C	50
		T <sub>A</sub> =70°C	26
T <sub>J</sub>	Maximum Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
I <sub>DM</sub>	Pulsed Drain Current	168	A
P <sub>D</sub>	Maximum Power Dissipation	T <sub>A</sub> =25°C	30.5
		T <sub>A</sub> =70°C	---
E <sub>AS</sub>	Avalanche Energy, Single Pulsed	33	mJ
R <sub>θJC</sub>	Thermal Resistance-Junction to Case	---	°C/W
R <sub>θJA</sub>	Thermal Resistance-Junction to Ambient	5.26	°C/W

Electrical Characteristics (T<sub>A</sub>=25°C Unless Otherwise Noted)

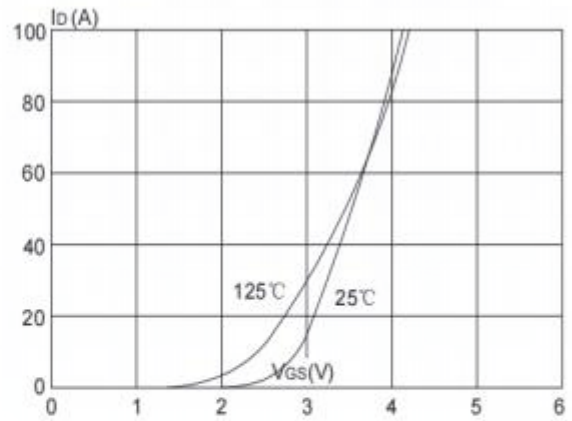
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250uA	30	---	---	V
VGS(th)	Gate threshold voltage	VDS=VGS, ID=250uA	1.0	1.5	2.5	V
RDS(on)	Drain-Source On-state Resistance	VGS=10V, ID=20A	---	7.6	10	mΩ
		VGS=4.5V, ID=10A	---	11.5	17	mΩ
IGSS	Gate-source leakage current	VGS=±20V, VDS=0V	---	---	±100	A
IDSS	Zero gate voltage drain current	VDS=30V, VGS=0V, T <sub>J</sub> =25°C	---	---	1	μA
		T <sub>J</sub> =55°C	---	---	---	
<b>Dynamic Characteristic</b>						
Ciss	Input Capacitance	VGS=0V, VDS=15V, Frequency=1.0MHz	---	1011	---	pF
Coss	Output Capacitance		---	142	---	
Crss	Reverse Transfer Capacitance		---	119	---	
QG	Gate Total Charge	VDS=15V, VGS=10V IDS=20A	---	19	---	nC
Qgs	Gate-Source charge		---	6.3	---	
Qgd	Gate-Drain charge		---	4.5	---	
td(on)	Turn-on delay time	VDD=30V, VGS=10V RG=3Ω, ID=2A	---	6	---	ns
tr	Turn-on Rise Time		---	5	---	
td(off)	Turn-off Delay Time		---	25	---	
tf	Turn-off Fall Time		---	7	---	
RG	Gate Resistance	VGS=0V, VDS=0V, F=1MHz	---	---	---	Ω
<b>Diode Characteristics</b>						
VSD	Diode Forward Voltage	VGS=0V, IS=1A, T <sub>J</sub> =25°C	---	---	1.2	V
trr	Reverse Recovery Time	ISD=4.1A, dISD/dt=-100A/μs	---	7	---	ns
Qrr	Reverse Recovery Charge		---	6.3	---	nC

**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**

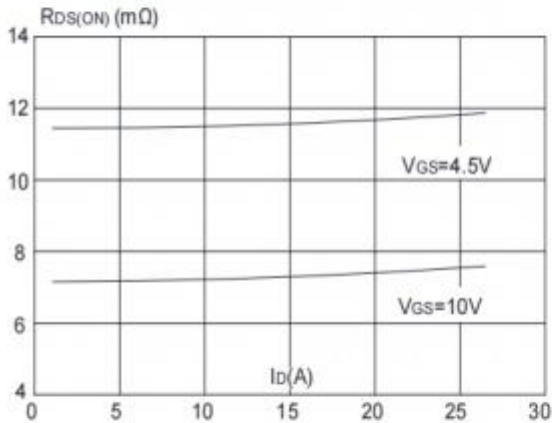
**Figure 1: Output Characteristics**



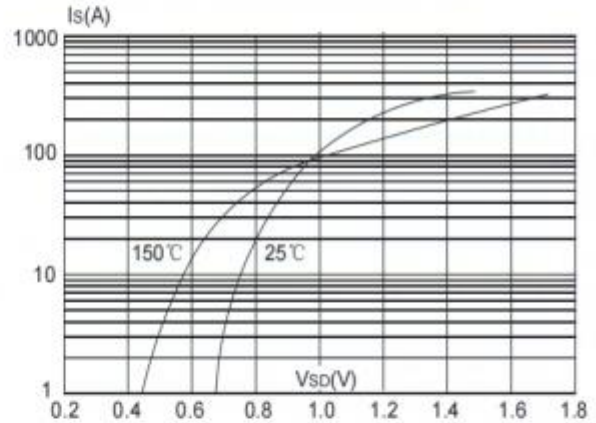
**Figure 2: Typical Transfer Characteristics**



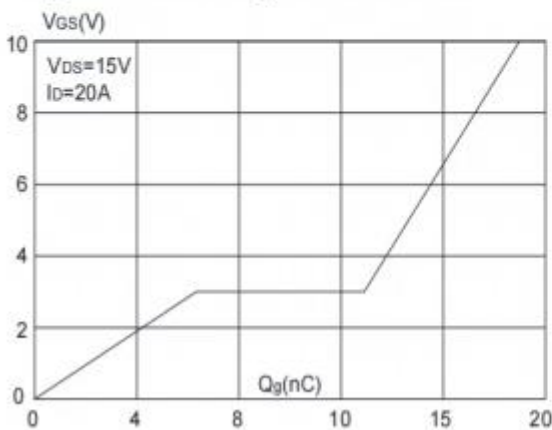
**Figure 3: On-resistance vs. Drain Current**



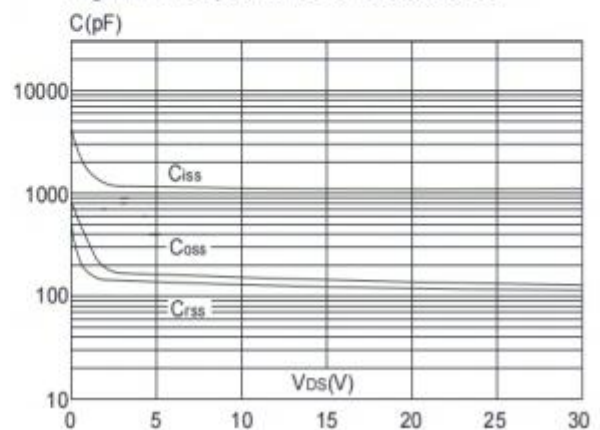
**Figure 4: Body Diode Characteristics**



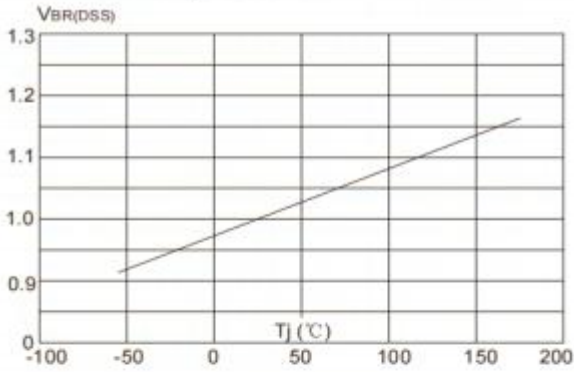
**Figure 5: Gate Charge Characteristics**



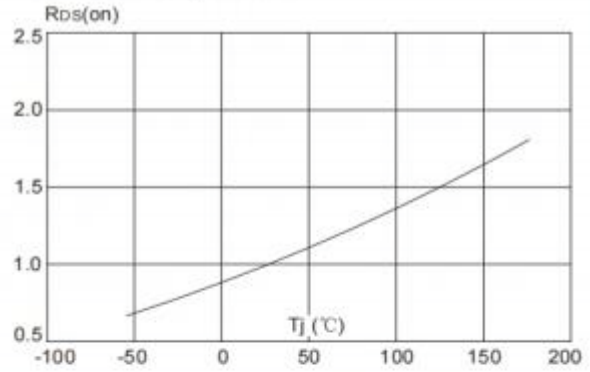
**Figure 6: Capacitance Characteristics**



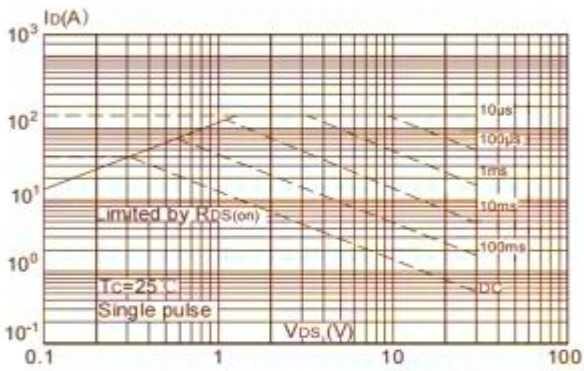
**Figure 7: Normalized Breakdown Voltage vs. Junction Temperature**



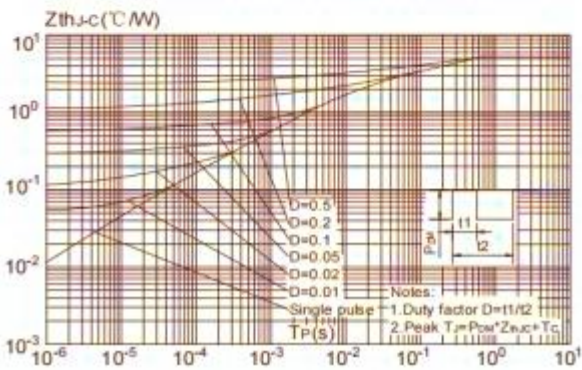
**Figure 8: Normalized on Resistance vs. Junction Temperature**



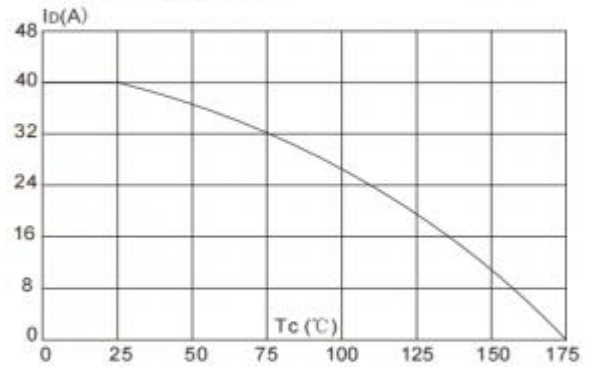
**Figure 9: Maximum Safe Operating Area**



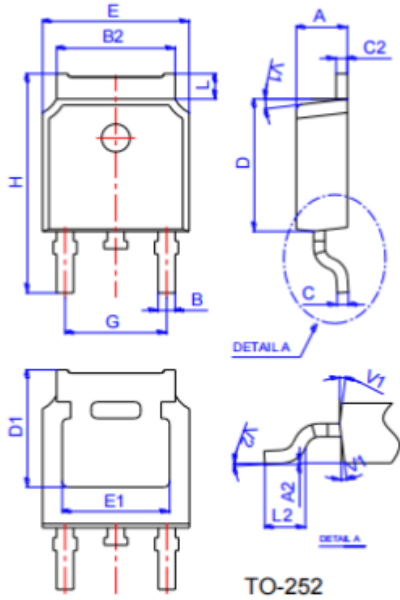
**Maximum Effective Transient Thermal Impedance, Junction-to-Case**



**Figure 10: Maximum Continuous Drain Current vs. Case Temperature**

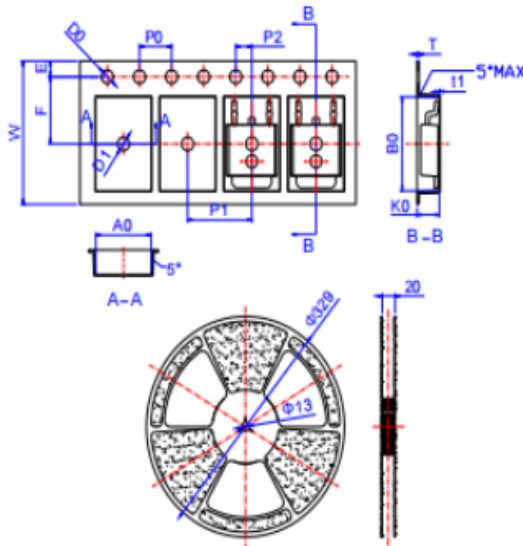


**Package Mechanical Data:TO-252-3L**



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 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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