

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	IPD068P03L3G
▶ Overseas	Part Number	IPD068P03L3G
▶ Equivalent	Part Number	IPD068P03L3G

EV is the abbreviation of name EVVO

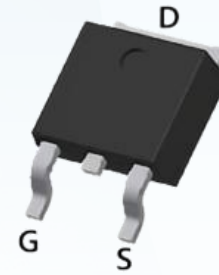
V _{DSS} (V)	R _{DS} (ON)	I _D (A)
-30	6mΩ(Typ)@V _{GS} =-10V	-80
	9mΩ(Typ)@V _{GS} =-4.5V	

FEATURE:

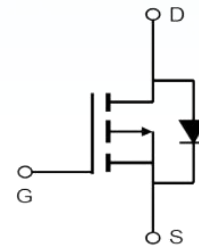
- The IPD068P03L3G is the high cell density trench P-ch MOSFETS, which provides excellent R_{DS(on)} and efficiency for most of the small power switching and load switch applications.

- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

Pin Description



TO-252



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)	T _C =25°C	-80	A
		T _C =70°C	-42	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _{DM}	Pulsed Drain Current		-175	A
P _D	Maximum Power Dissipation	T _C =25°C	31.2	W
		T _C =70°C	---	
E _{AS}	Avalanche Energy, Single Pulsed		31	mJ
R _{θJC}	Thermal Resistance-Junction to Case		4	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient		43	°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	-1.6	-2.5	V
RDS(on)	Drain-Source On-state Resistance	VGS=-10V , ID=-12A	---	6	8.8	mΩ
		VGS=-4.5V , ID=-8A	---	9	14	mΩ
IGSS	Gate-source leakage current	VGS=±20V , VDS=0V	---	---	±100	nA
gfs	Forward Transconductance	V _{Ds} = -5V, I _D = -20A	---	28	---	S
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	---	4320	---	pF
Coss	Output Capacitance		---	529	---	
Crss	Reverse Transfer Capacitance		---	487	---	
QG	Gate Total Charge	VDS=-15V, VGS=-10V, IDS=-15A	---	45	---	nC
Qgs	Gate-Source charge		---	8.5	---	
Qgd	Gate-Drain charge		---	12.8	---	
td(on)	Turn-on delay time	VDD=-15V , VGS=-10V , RG=2.5Ω, ID=-15A	---	18.9	---	ns
tr	Turn-on Rise Time		---	15.7	---	
td(off)	Turn-off Delay Time		---	64.8	---	
tf	Turn-off Fall Time		---	36.5	---	
RG	Gate Resistance	VGS=0V,VDS=0V,F=1MHz	---	4	---	Ω
Diode Characteristics						
VSD	Diode Forward Voltage	VGS=0V , Is=1A , TJ=25℃	---	---	-1.2	V
Is	Maximum Continuous Drain to Source Diode Forward Current		---	---	-80	A
ISM	Maximum Pulsed Drain to Source Diode Forward Current		---	---	---	A
trr	Reverse Recovery Time	ISD=-2.8A, dISD/dt=-100A/μs	---	---	---	ns
Qrr	Reverse Recovery Charge		---	---	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

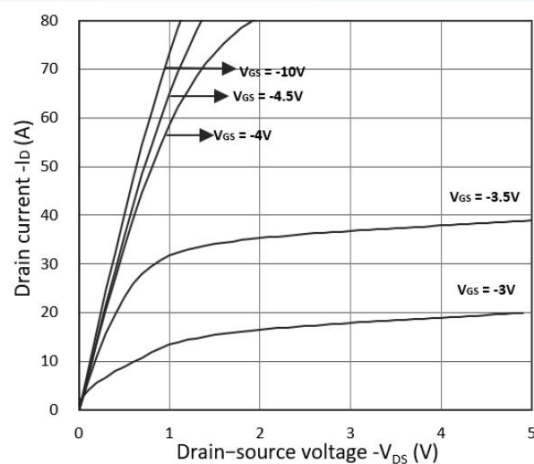


Figure 1. Output Characteristics

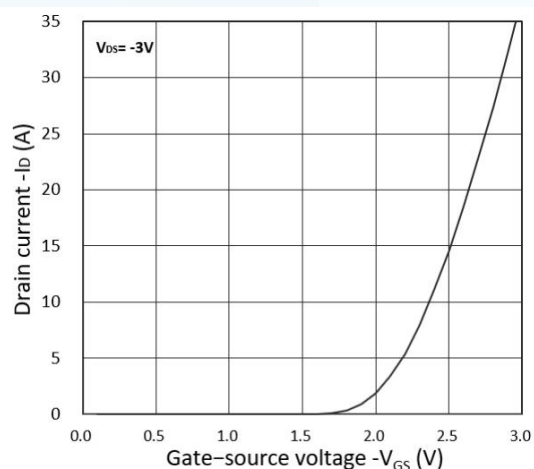


Figure 2. Transfer Characteristics

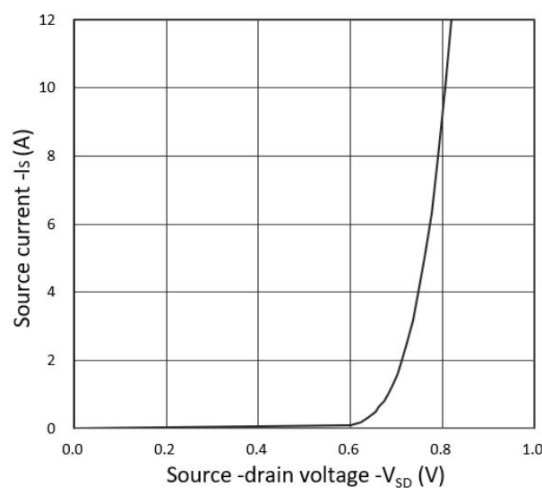


Figure 3. Forward Characteristics of Reverse

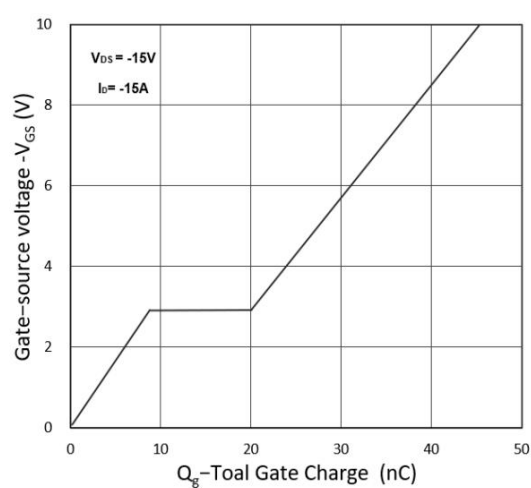
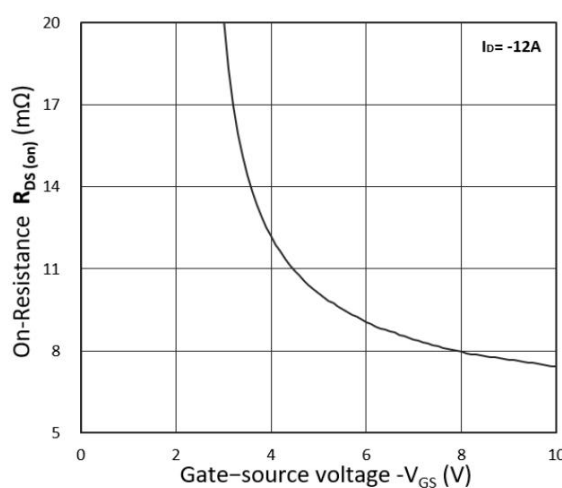
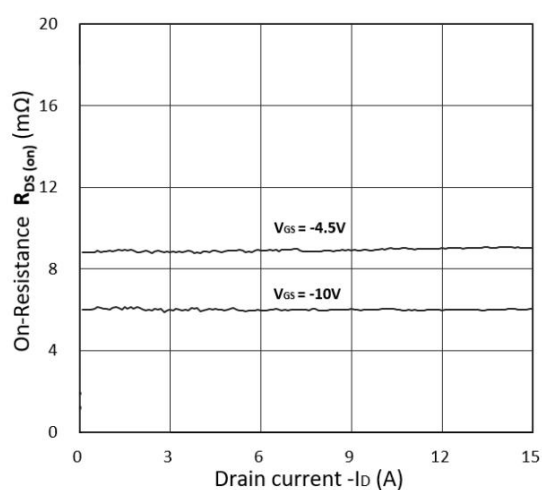


Figure 4. Gate Charge Characteristics

Figure 5. $R_{DS(on)}$ vs. V_{GS} Figure 6. $R_{DS(on)}$ vs. I_D

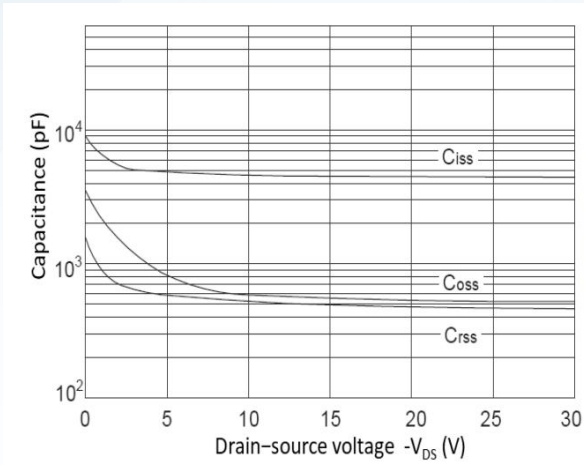


Figure 7. Capacitance Characteristics

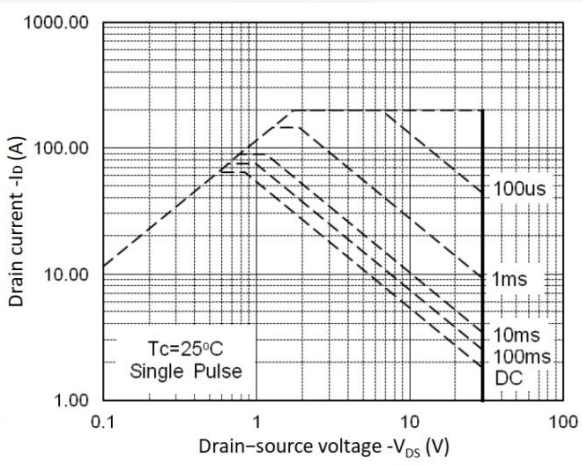


Figure 8. Safe Operating Area

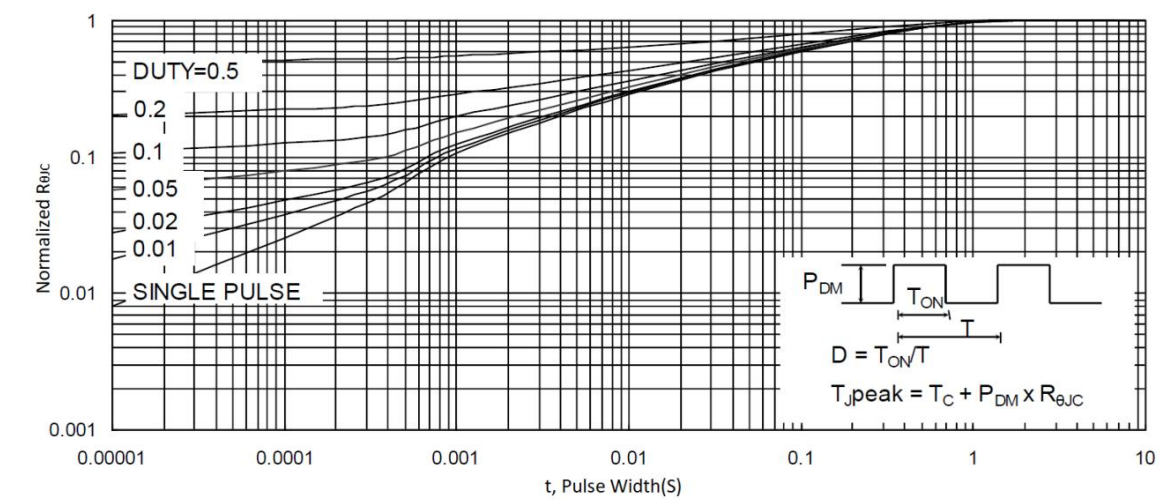


Figure 9. Normalized Maximum Transient Thermal Impedance

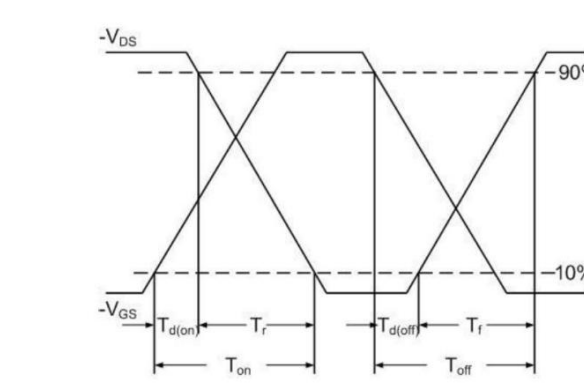


Figure 10. Switching Time Waveform

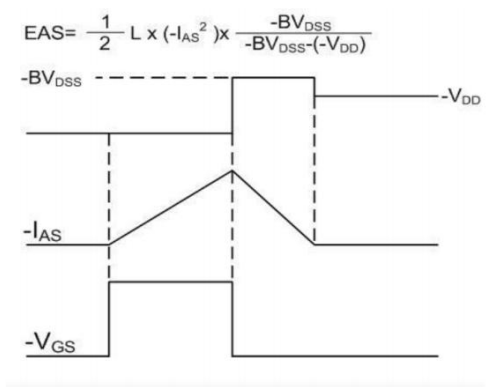
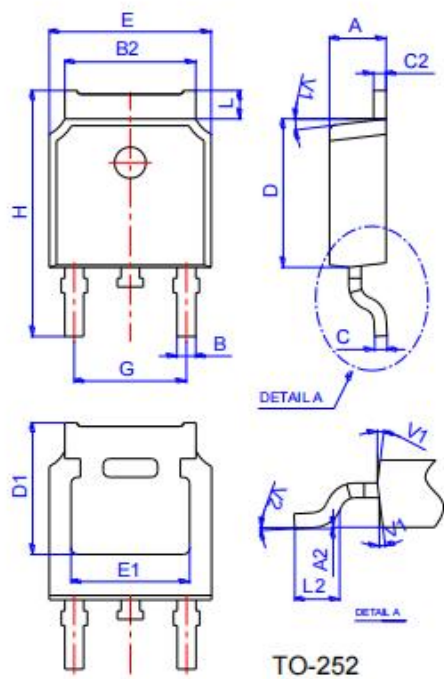


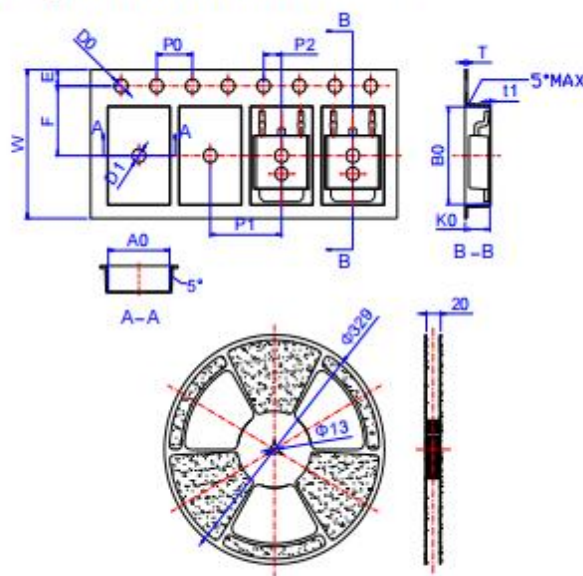
Figure 11. Unclamped Inductive Switching
Waveform

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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