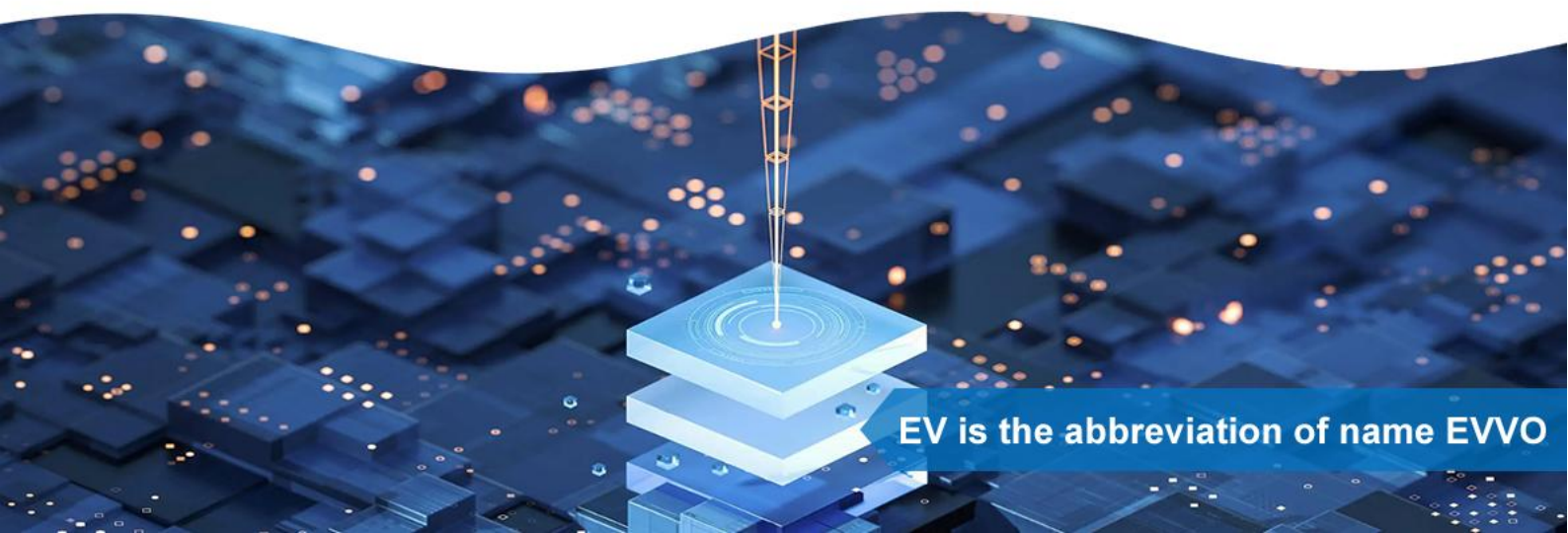
EVVOSEMI®

THINK CHANGE DO

ESD TVS MOS LDO Diode Sensor DC-DC

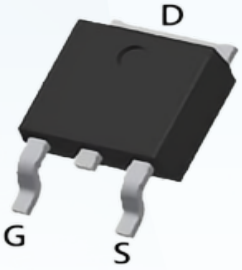
Product Specification

Domestic Part Number	IPD135N03LG
Overseas Part Number	IPD135N03LG
Equivalent Part Number	IPD135N03LG



V_{DSS}（V）	$R_{DS\ (ON)}$	$I_{D(A)}$
30	9.5mΩ(Typ)@VGS=10V	30
	16mΩ(Typ)@VGS=4.5V	

Pin Description



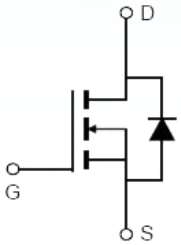
T0-252

FEATURE:

- The IPD135N03LG is the high cell density trenched N-ch MOSFETS, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

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)	T_A=25°C	30	A
		T_A=70°C	16	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_{DM}	Pulsed Drain Current		88	A
P_D	Maximum Power Dissipation	T_A=25°C	11.5	W
		T_A=70°C	---	
E_{AS}	Avalanche Energy, Single Pulsed		18	mJ
RθJC	Thermal Resistance-Junction to Case		---	°C/W
RθJA	Thermal Resistance-Junction to Ambient		9.26	°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=10A	---	9.5	13	mΩ
		VGS=4.5V , ID=5A	---	16	22.5	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	---	551	---	pF
Coss	Output Capacitance		---	108	---	
Crss	Reverse Transfer Capacitance		---	93	---	
QG	Gate Total Charge	VDS=15V, VGS=10V IDS=11A	---	15	---	nC
Qgs	Gate-Source charge		---	4.7	---	
Qgd	Gate-Drain charge		---	3.6	---	
td(on)	Turn-on delay time	VDD=30V , VGS=10V RG=3Ω, ID=20A	---	5	---	ns
tr	Turn-on Rise Time		---	8	---	
td(off)	Turn-off Delay Time		---	21	---	
tf	Turn-off Fall Time		---	7	---	
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	---	7	---	ns
Qrr	Reverse Recovery Charge		---	5.9	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

Figure1: Output Characteristics

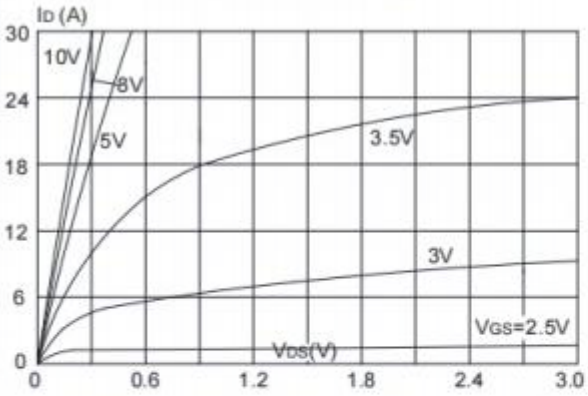


Figure 2: Typical Transfer Characteristics

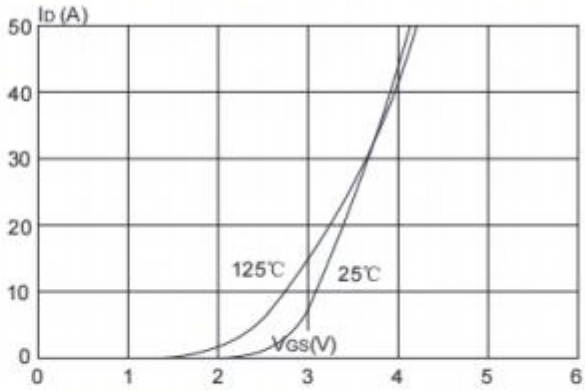


Figure 3: On-resistance vs. Drain Current

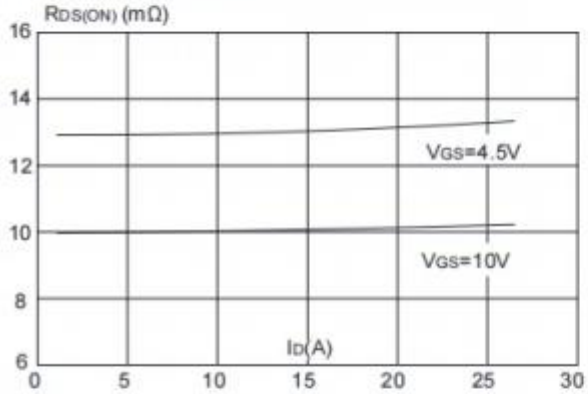


Figure 4: Body Diode Characteristics

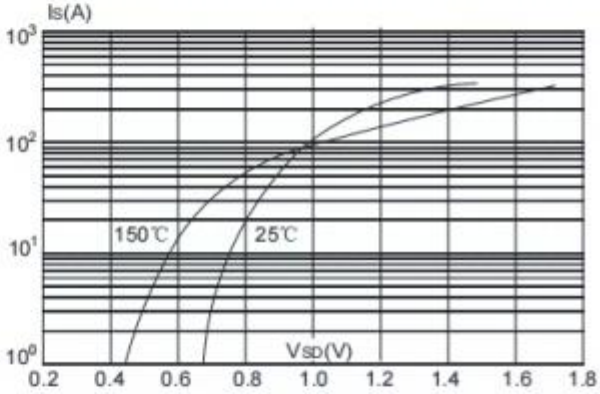


Figure 5: Gate Charge Characteristics

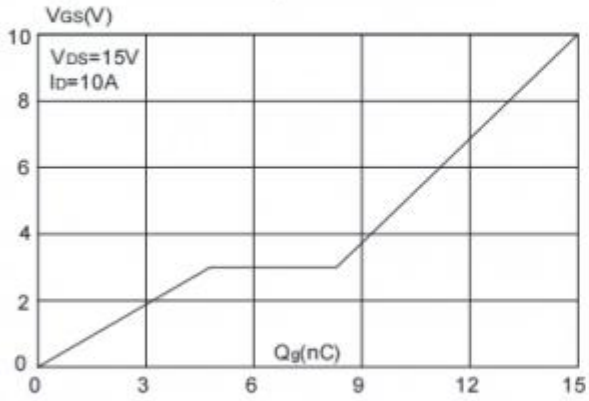


Figure 6: Capacitance Characteristics

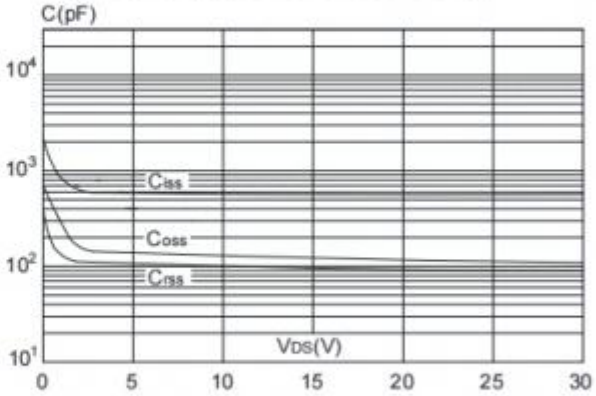


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

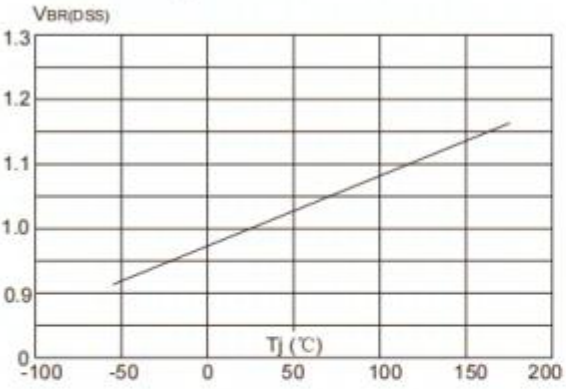


Figure 8: Normalized on Resistance vs. Junction Temperature

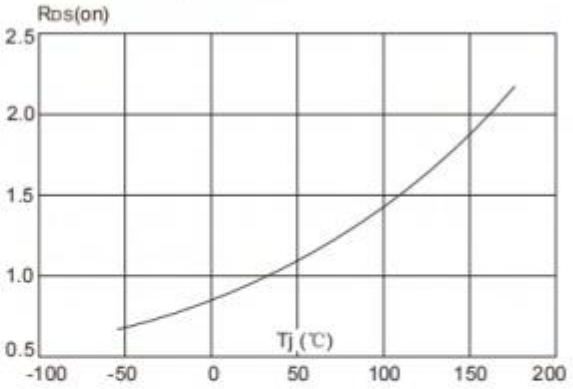


Figure 9: Maximum Safe Operating Area

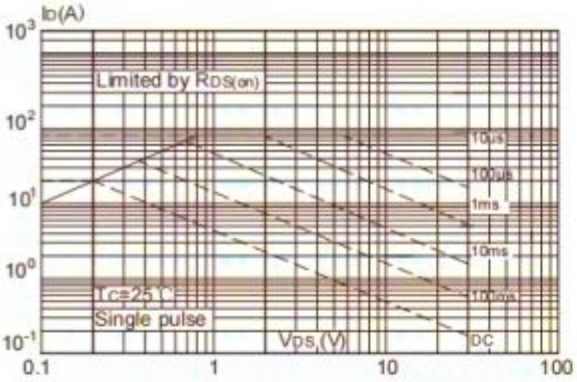
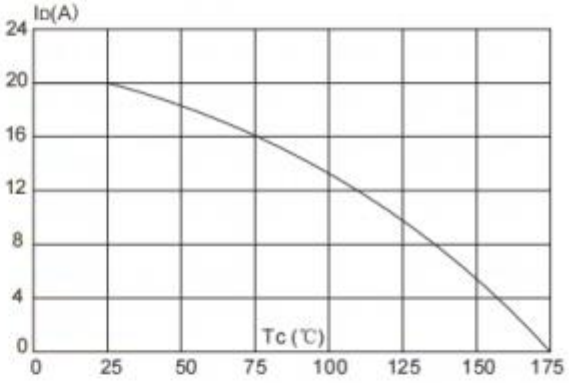
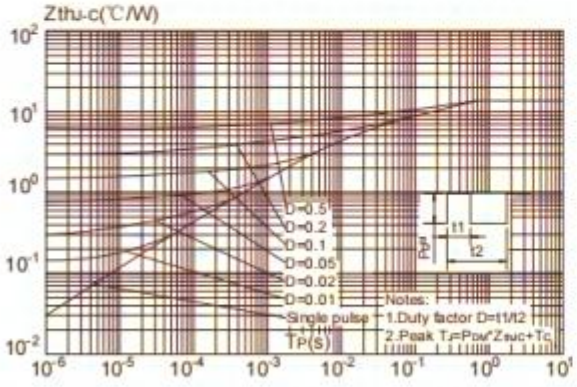


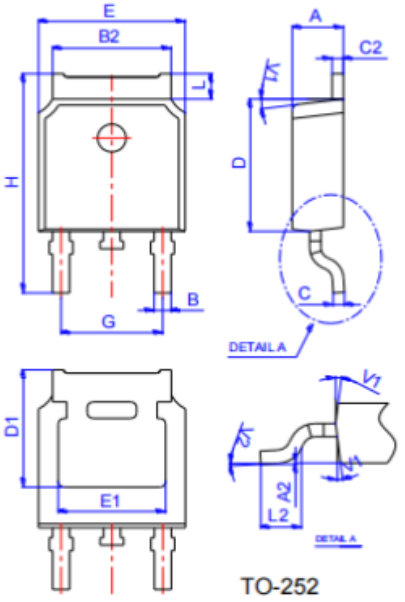
Figure 10: Maximum Continuous Drain Current vs. Case Temperature



Maximum Effective Transient Thermal Impedance, Junction-to-Case



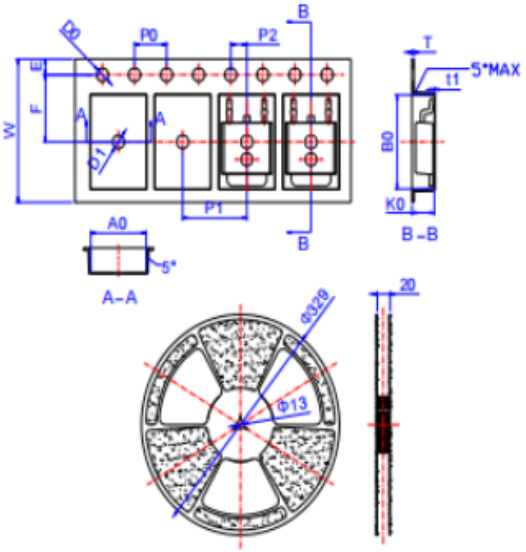
Package Mechanical Data:TO-252-3L



TO-252

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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