

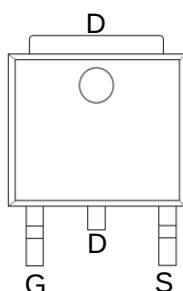
-30V/-60A P-Channel MOSFET

Features

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high EAS

Application

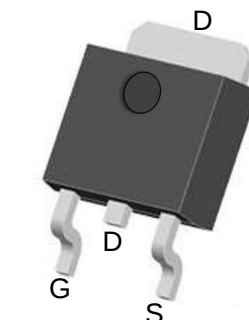
- Battery and loading switching
- Excellent package for good heat dissipation



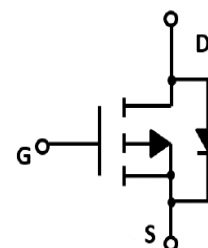
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-30V	10m Ω @10V	-60A
	13m Ω @4.5V	



TO-252 top view



Schematic diagram

Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		-30	V
V _{GS}	Gate-Source Voltage		±20	V
E _{AS}	Single pulse avalanche energy		77	mJ
T _J , T _{STG}	Storage Temperature Range		-55 to 175	°C
I _S	Diode Continuous Forward Current	Tc=25°C	-60	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-210	A
I _D	Continuous Drain Current@GS=10V	Tc=25°C	-60	A
P _D	Maximum Power Dissipation	Tc=25°C	110	W
R _{θJA}	Thermal Resistance Junction-Ambient((*1 in2 Pad of 2-oz Copper), Max.)		62.5	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-30	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-30V, VGS=0V	--	--	-1.0	uA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	-1.5	-2.2	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-15A	--	8.5	10	mΩ
		VGS=-4.5V, ID=-8A	--	9.5	13	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=-15V, VGS=0V, f=1MHz	--	1988	--	pF
COSS	Output Capacitance		--	305	--	pF
CRSS	Reverse Transfer Capacitance		--	266	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDD=-15V, ID=-12A, VGS=-10V	--	35	--	nC
Qgs	Gate Source Charge		--	5.8	--	nC
Qgd	Gate Drain Charge		--	8.8	--	nC
td(on)	Turn-on Delay Time	VDD=-15V, ID=-1A, VGS=-10V, RG=2.5Ω	--	11	--	nS
tr	Turn-on Rise Time		--	7.7	--	nS
td(off)	Turn-Off Delay Time		--	43.3	--	nS
tf	Turn-Off Fall Time		--	18	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25℃, Is=-12A,	--	--	-1.2	V

Typical Operating Characteristics

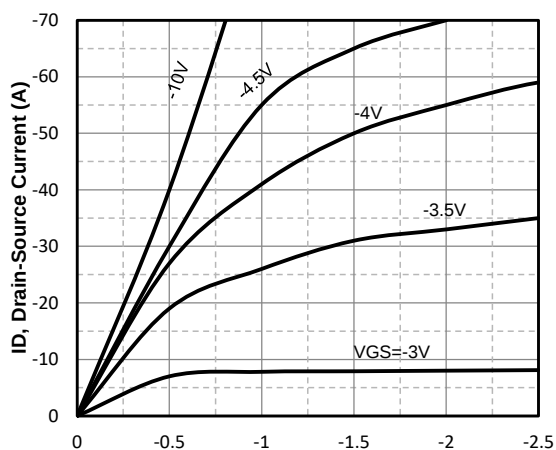


Fig1. Typical Output Characteristics

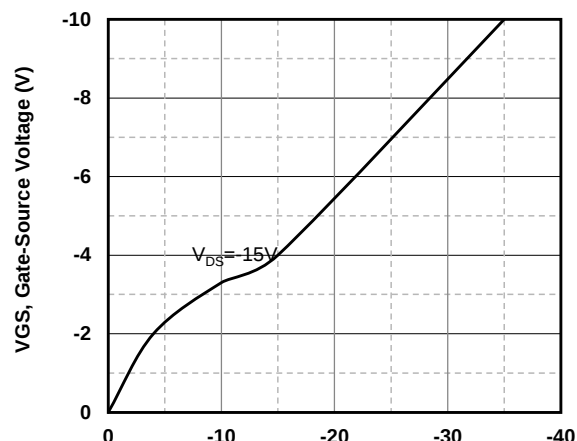


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

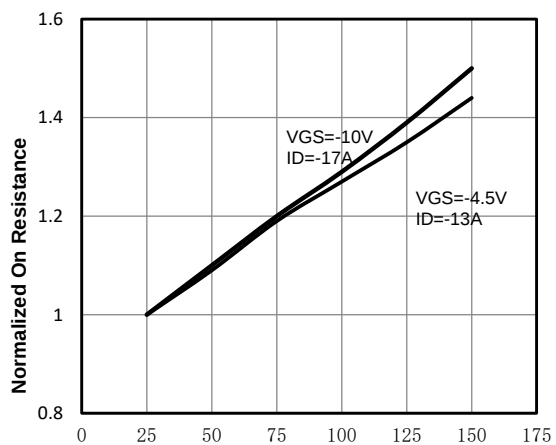


Fig3. Normalized On-Resistance Vs. Temperature

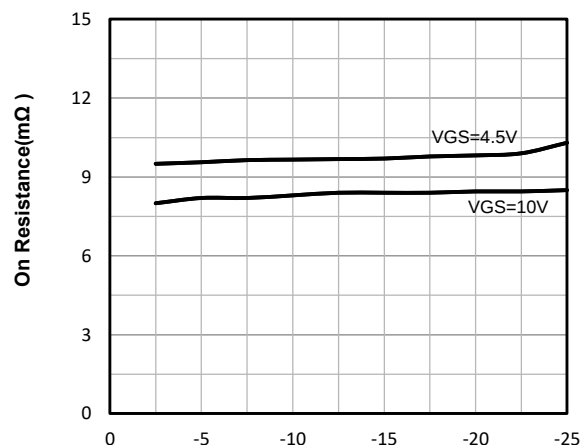


Fig4. On-Resistance Vs. Drain-Source Current

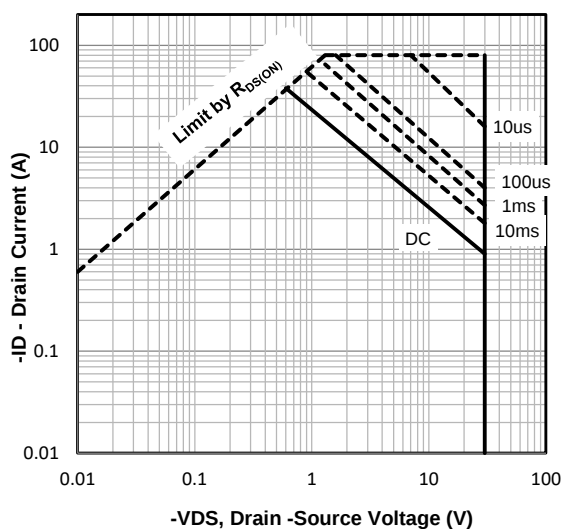


Fig5. Maximum Safe Operating Area

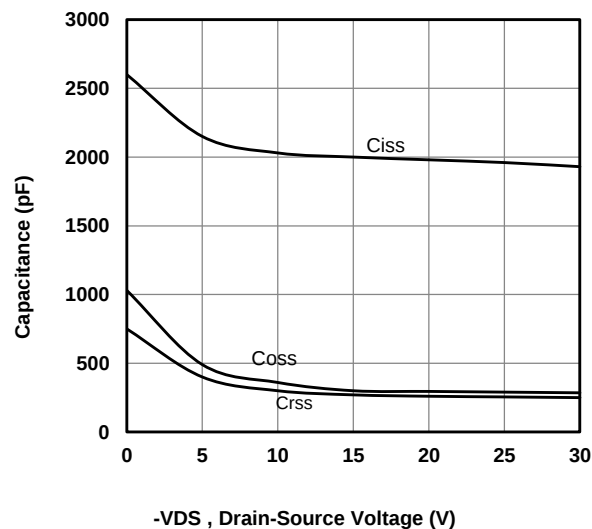
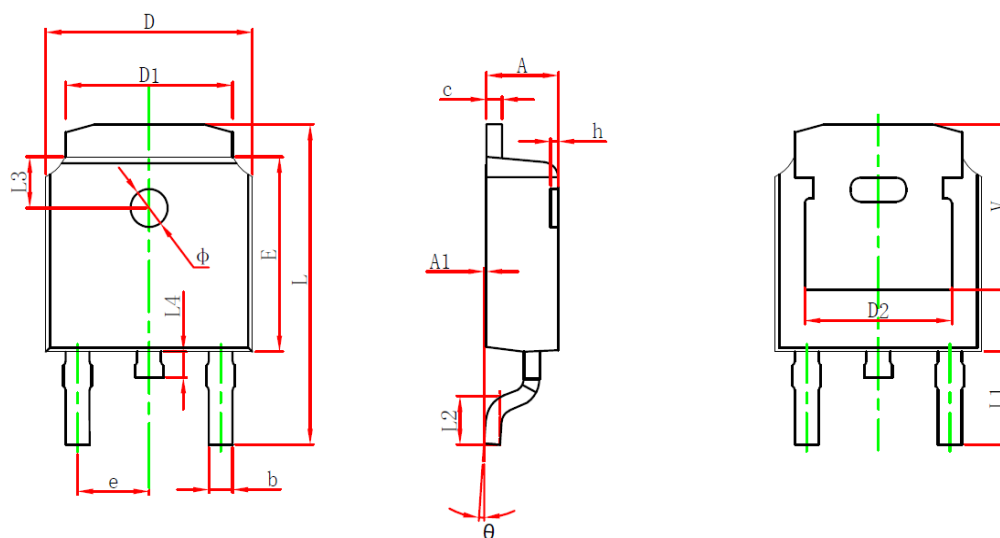


Fig6. Typical Capacitance Vs. Drain-Source Voltage

TO-252 Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	