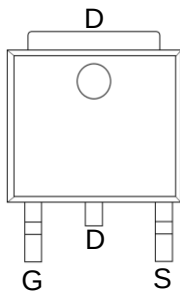


Features

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

Application

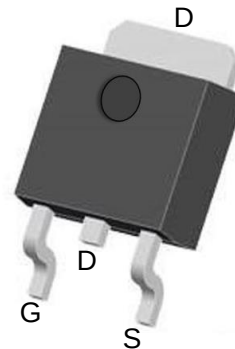
- High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA
- Networking DC-DC Power System
- Load Switch



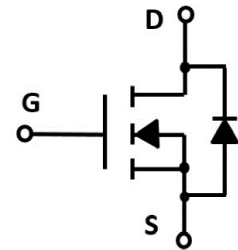
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
30V	9mΩ@10V	60A
	14mΩ@4.5V	



TO-252 top view



Schematic diagram

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ 60	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ 150	A
I_D	Continuous Drain Current@GS=10V	$T_c=25^\circ\text{C}$ 60	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 27	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient>(*1 in2 Pad of 2-oz Copper), Max.)	60	°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	2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=15A	--	6	9	mΩ
		VGS=4.5V, ID=15A	--	9	14	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=15V, VGS=0V, f=1MHz	--	1300	--	pF
COSS	Output Capacitance		--	180	--	pF
CRSS	Reverse Transfer Capacitance		--	110	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=20V, ID=12A, VGS=4.5V	--	14	--	nC
Qgs	Gate Source Charge		--	3.5	--	nC
Qgd	Gate Drain Charge		--	7	--	nC
td(on)	Turn-on Delay Time	VDD=12V, ID=5A, VGS=10V, RG=3.3Ω	--	5	--	nS
tr	Turn-on Rise Time		--	12	--	nS
td(off)	Turn-Off Delay Time		--	27	--	nS
tf	Turn-Off Fall Time		--	10	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25℃, Is=10A,	--	--	1.2	V

Typical Operating Characteristics

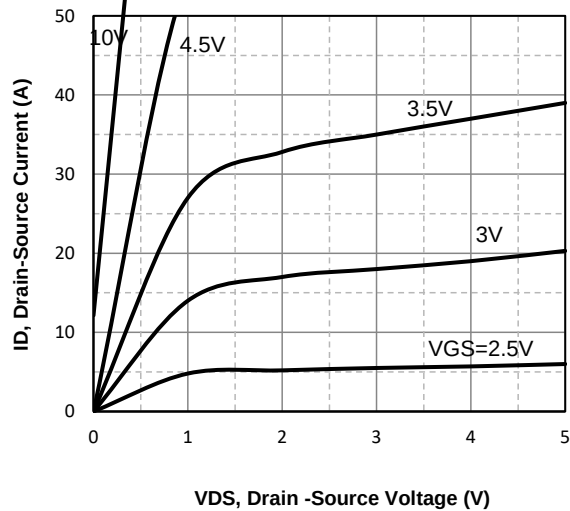


Fig1. Typical Output Characteristics

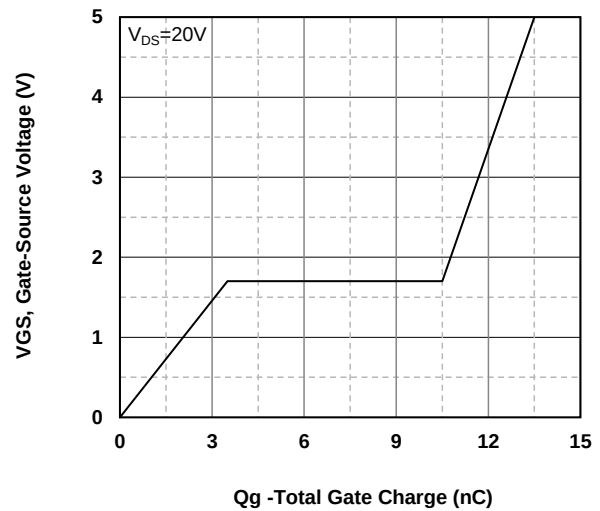


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

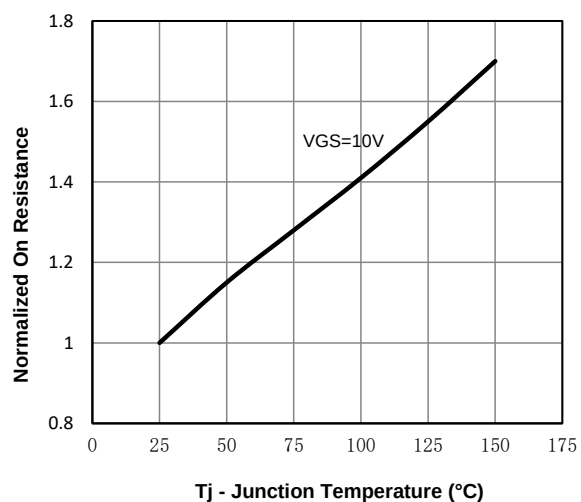


Fig3. Normalized On-Resistance Vs. Temperature

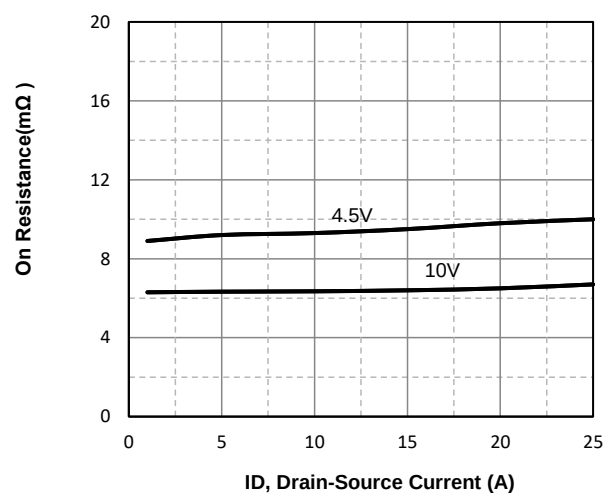


Fig4. On-Resistance Vs. Drain-Source Current

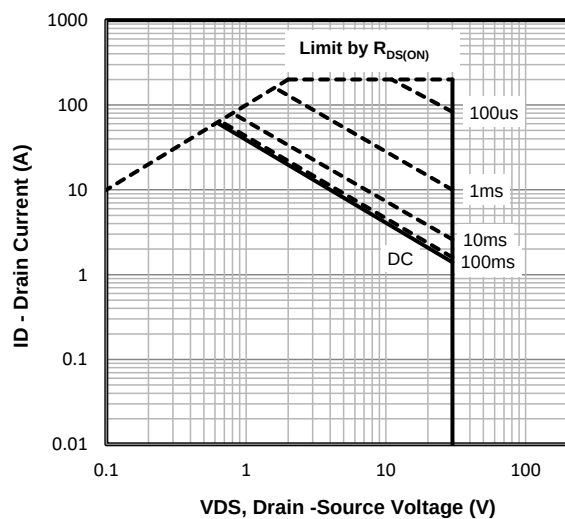


Fig5. Maximum Safe Operating Area

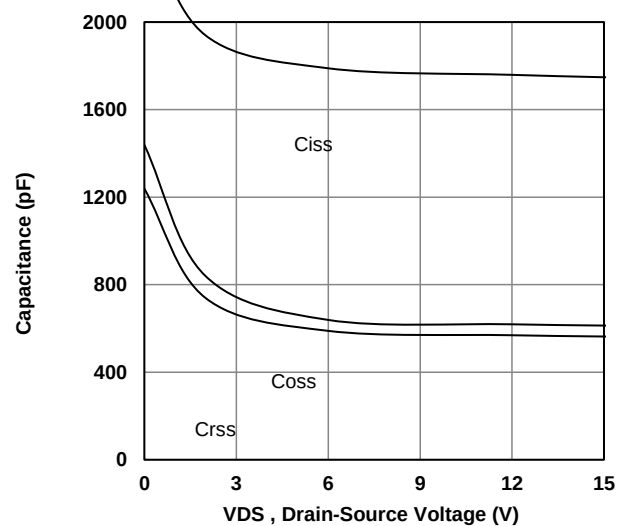
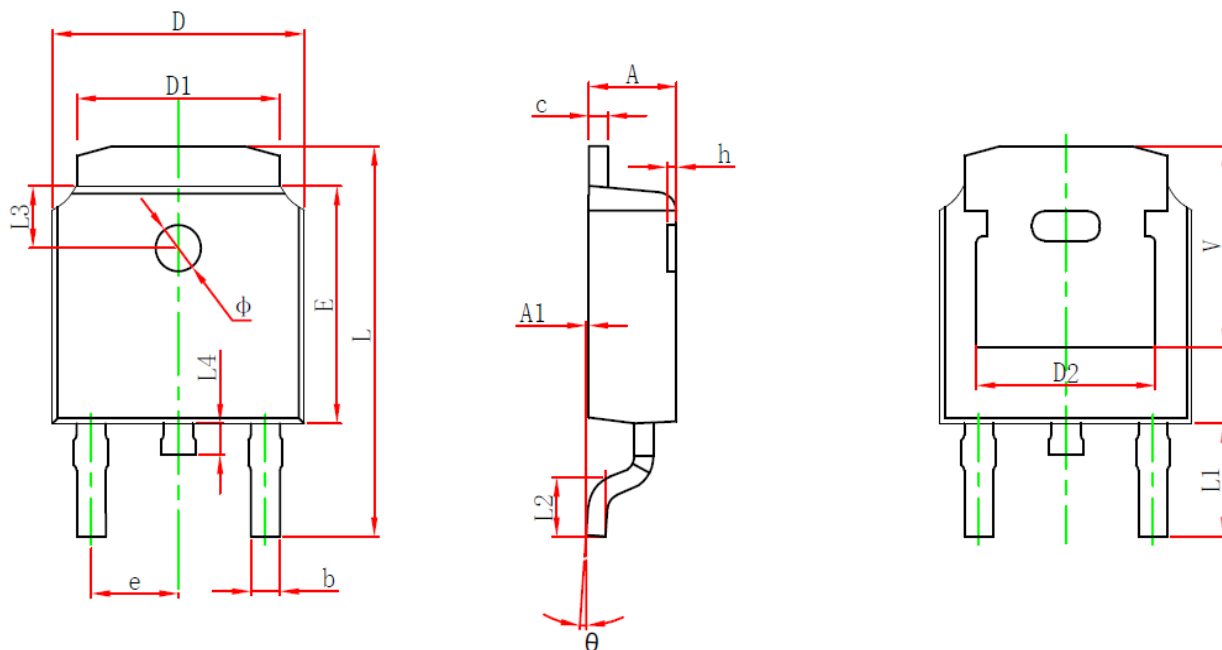


Fig6 Typical Capacitance Vs. Drain-Source Voltage

TO-252 Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.095
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	0.257	0.265
D1	5.100	5.460	0.202	0.216
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.237	0.245
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.384	0.408
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	0.040
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.	