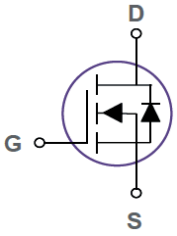
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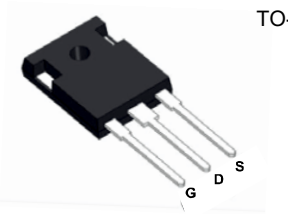
Silicon N-Channel Power MOSFET

V_{DSS}	1500V
$I_{D(@25℃)}$	6A
$R_{DS(ON)}$ typ.	2.5Ω

Features

- Fast Switching
- Low On-Resistance
- Low Gate Charge Minimize Switching Loss
- Fast Recovery Body Diode
- 100% Single Pulse Avalanche Energy Test

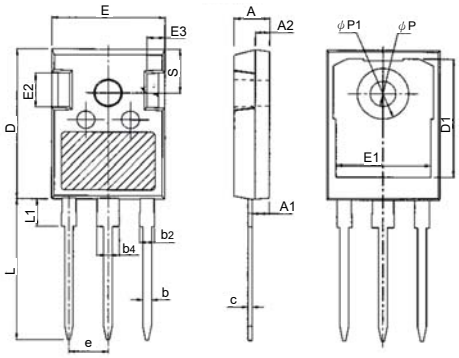




Package Dimensions

Applications

- Adaptor
- Charger
- SMPS Standby Power



Absolute Maximum Ratings

(Tc = 25℃ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain Source Voltage	V_{DS}	1500	V
Gate Source Voltage	V_{GS}	± 30	V
Drain Current Continuous @ T_C = 25°C @ T_C = 100°C	I_D	6 4.4	A
Drain Current Pulsed	I_{DM}	24	A
Single Pulse Avalanche Energy	E_{AS}	200	mJ
Power Dissipation @ T_C= 25°C	P_D	300	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Thermal Resistance Junction to Case	$R_{\theta JC}$	0.42	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	40	°C/W

UNIT:mm			
Symbol	MIn.	Nom	Max.
A	4.80	5.00	5.20
A1	2.21	2.41	2.61
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
b4	2.91	3.01	3.21
c	0.51	0.61	0.75
D	20.70	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.30	13.60
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	5.44BSC		
L	19.62	19.92	20.22
L1	-	-	4.30
ØP	3.40	3.60	3.80
ØP1	-	-	7.30
S	6.15BSC		

Electrical Characteristics @ T_C =25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V，I_{DS}=0.5mA	1500	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V，V_{DS}=1500V	-	-	10	μA
Gate To Source Forward Leakage	$I_{GSS(F)}$	V_{GS}=±30V，V_{DS}=0V	-	-	±100	nA
ON Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}，I_{DS}=0.25mA	2.5	-	4.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V，I_{DS}=3A	-	2.5	3.5	Ω
Forward Transconductance	g_{fs}	V_{DS}=15V，I_D =3A	-	2.0	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V	-	3800	-	pF
Output Capacitance	C_{oss}	V_{GS}=0V	-	200	-	
Reverse Transfer Capacitance	C_{rss}	Freq.=1MHz	-	26	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=750V	-	45	-	ns
Rise Time	t_r	V_{GS}=10V	-	20	-	
Turn-Off Delay Time	$t_{d(off)}$	I_D=3A	-	70	-	
Fall Time	t_f	R_G =10Ω	-	35	-	
Total Gate Charge	Q_g	V_{DS}=750V	-	19	-	nC
Gate to Source Charge	Q_{gs}	V_{GS}=10V	-	30	-	
Gate to Drain Charge	Q_{gd}	I_{DS}=3A	-	11	-	
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V，I_S=6A	-	-	5	V
Continuous Source Current (Body Diode)	I_{SD}		-	-	6	A
Max. Pulsed Current (Body Diode)	I_{SM}		-	-	24	A
Reverse Recovery Time	T_{rr}	V_{GS}=0V I_S=6A，T_J=25°C di_F/dt=100A/μs	-	300	-	ns
Reverse Recovery Charge	Q_{rr}		-	1900	-	nC

*Pulse Width < 380μs, Duty Cycle < 2%.

Typical Performance Characteristics

Fig. 1. Output Characteristics @ T_J = 25°C

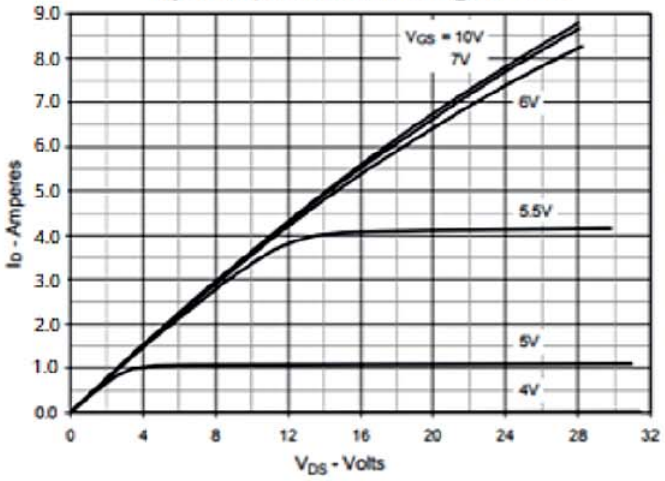


Fig. 2. Output Characteristics @ T_J = 125°C

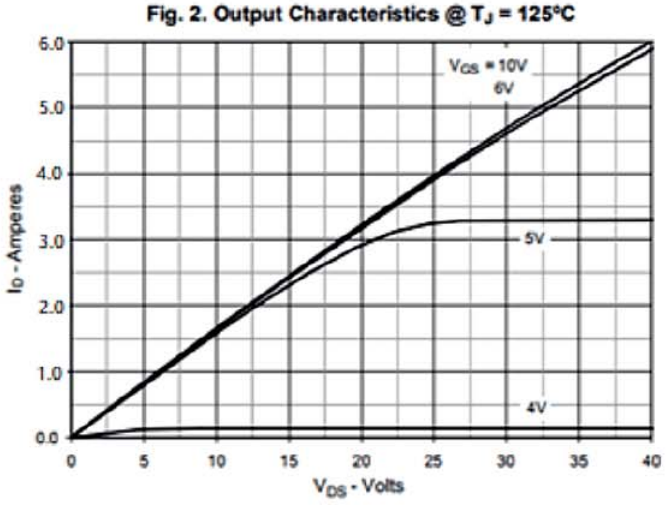


Fig. 3. $R_{DS(on)}$ Normalized to I_D = 3.0A Value vs. Junction Temperature

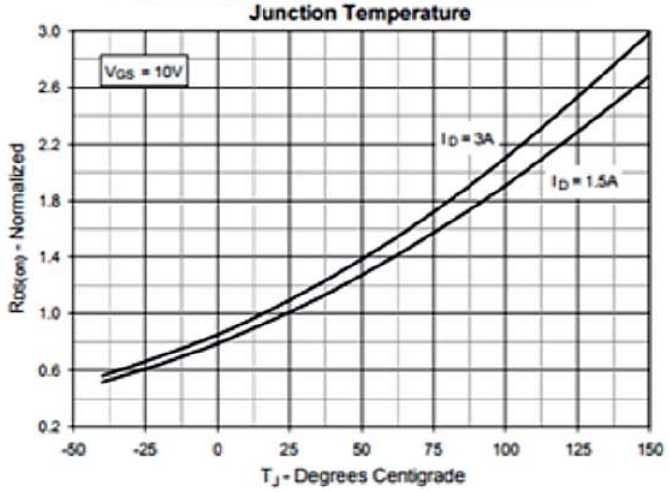


Fig. 4. $R_{DS(on)}$ Normalized to I_D = 3.0A Value vs. Drain Current

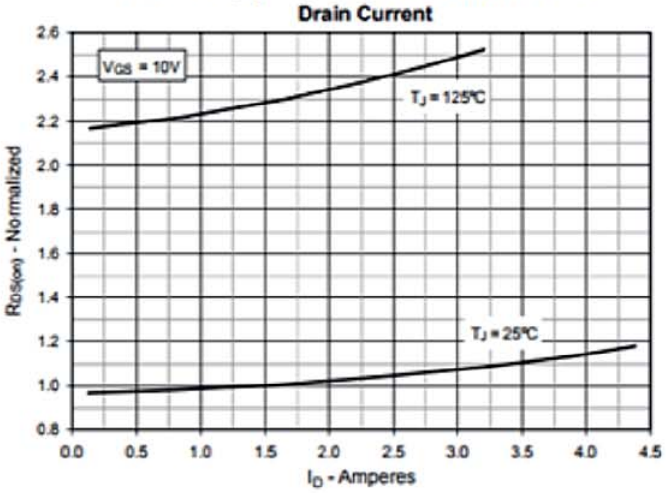


Fig. 5. Maximum Drain Current vs. Case Temperature

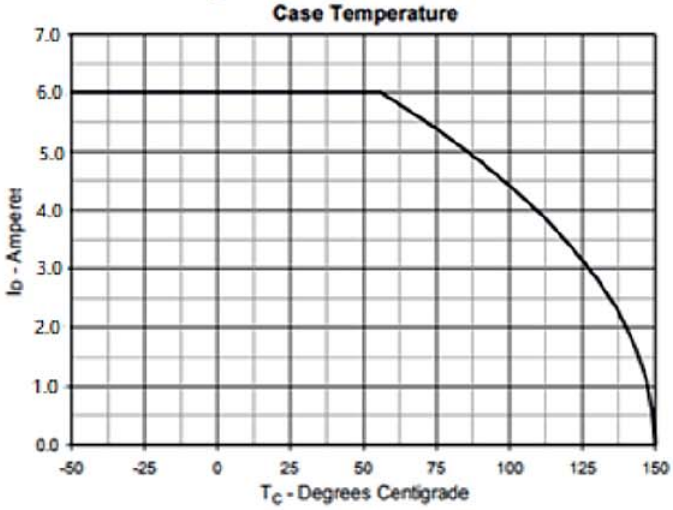
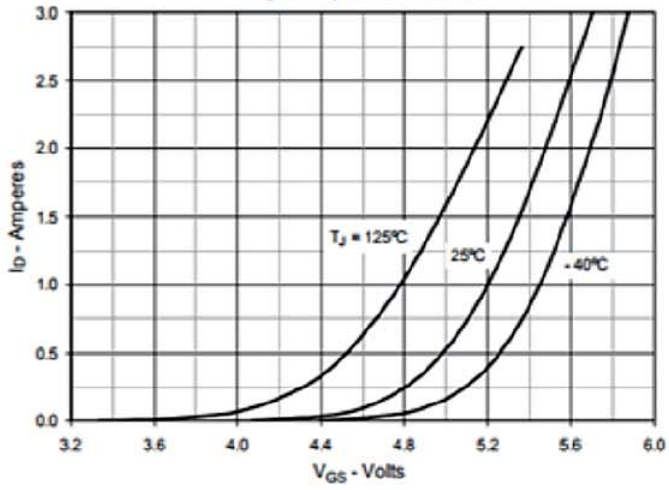


Fig. 6. Input Admittance



Typical Performance Characteristics

Fig. 7. Transconductance

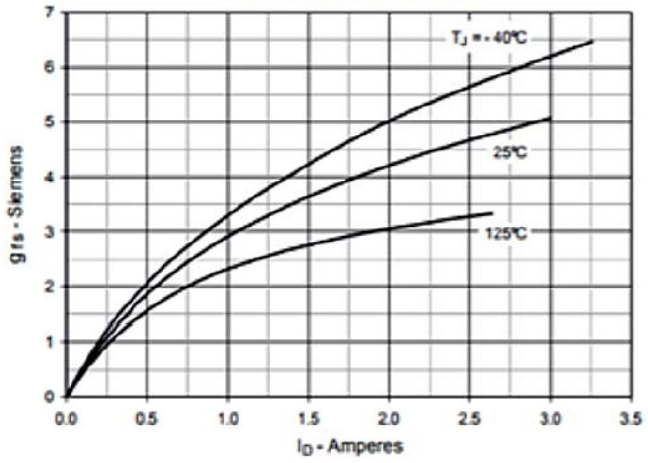


Fig. 8. Forward Voltage Drop of Intrinsic Diode

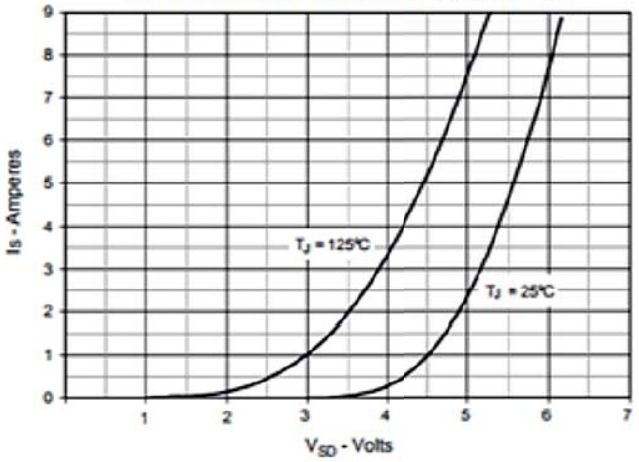


Fig. 9. Gate Charge

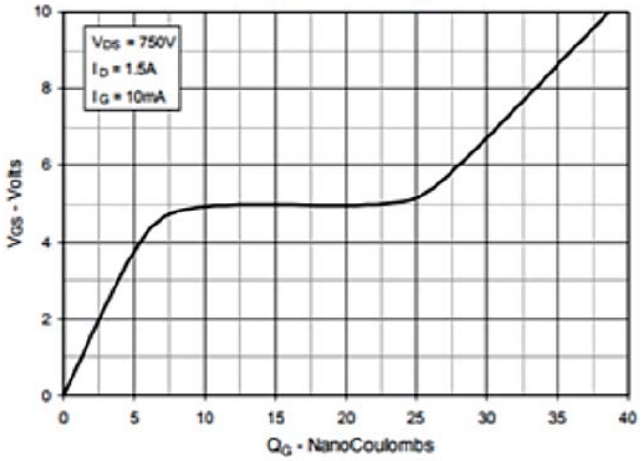


Fig. 10. Capacitance

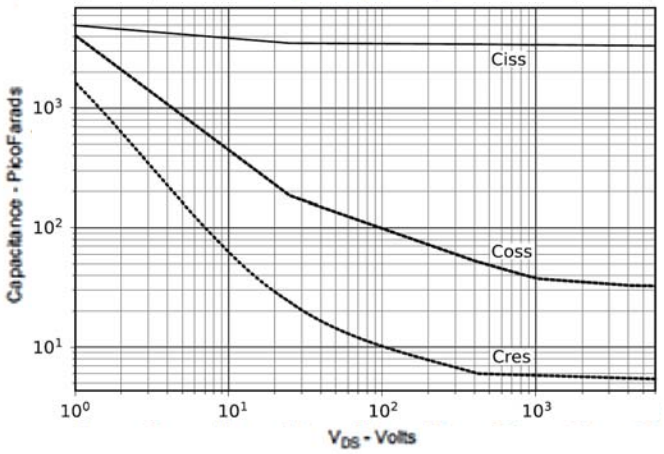


Fig. 11. Maximum Transient Thermal Impedance

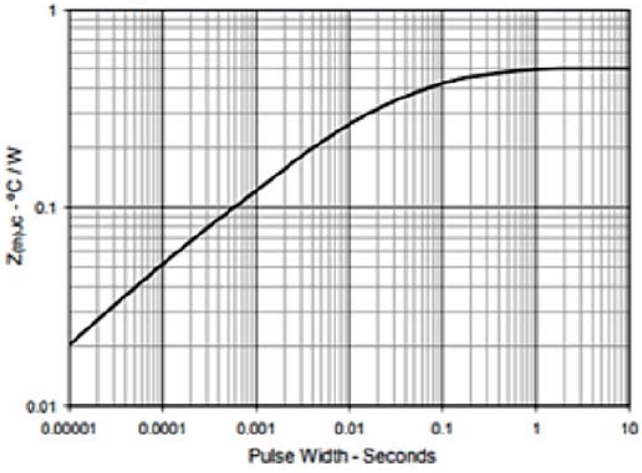
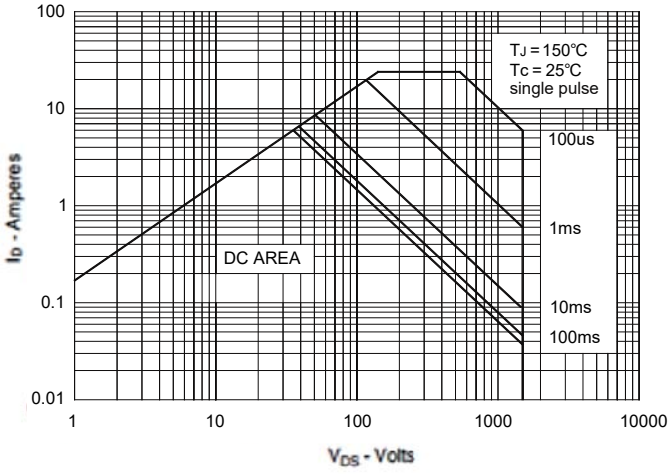


Fig. 12. Forward-Bias Safe Operating Area



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