30V/10.5A N-Channel MOSFET

Product Summary

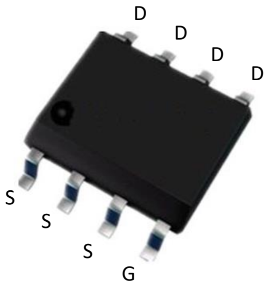
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
30V	19mΩ@10V	10.5A
	27mΩ@4.5V	

Features

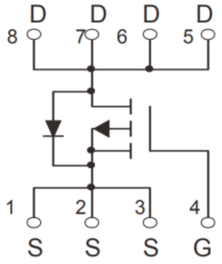
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Application

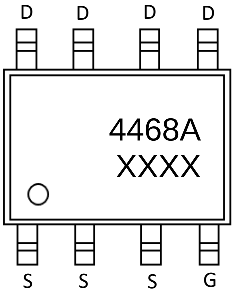
- Power switching application



SOP-8 top view



Schematic diagram



4468A : Device code
XXXX : Code

Marking and pin assignment

Pb-Free

RoHS

Halogen-Free

Absolute Maximum Ratings (TA=25℃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
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°C
I_S	Diode Continuous Forward Current	Tc=25°C	10.5	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	50	A
I_D	Continuous Drain Current	Tc=25°C	10.5	A
P_D	Maximum Power Dissipation	Tc=25°C	2.5	W
$R_{θJA}$	Thermal Resistance Junction-Ambient		75	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
$BV_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V，I_D=250μA	30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V，V_{GS}=0V	--	--	1.0	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V，V_{DS}=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}，I_D=250μA	1.0	1.5	2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=10V，I_D=10.5A	--	14	19	mΩ
		V_{GS}=4.5V，I_D=9A	--	20	27	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	V_{DS}=15V，V_{GS}=0V，f=1MHz	--	572	--	pF
C_{OSS}	Output Capacitance		--	81	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	65	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DD}=15V，I_D=10A， V_{GS}=10V	--	6.2	--	nC
Q_{gs}	Gate Source Charge		--	2.4	--	nC
Q_{gd}	Gate Drain Charge		--	2.5	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=30V，I_D=10A， V_{GS}=10V，R_G=3Ω	--	3	--	nS
t_r	Turn-on Rise Time		--	7.5	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	20	--	nS
t_f	Turn-Off Fall Time		--	4	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃，Is=10.5A，	--	0.8	1.2	V

Typical Operating Characteristics

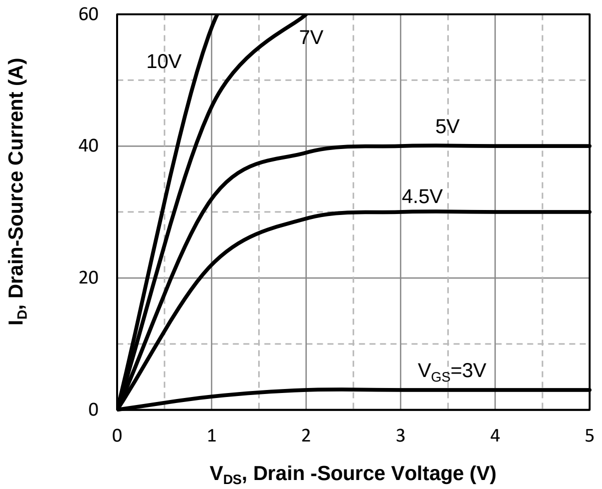


Fig1. Typical Output Characteristics

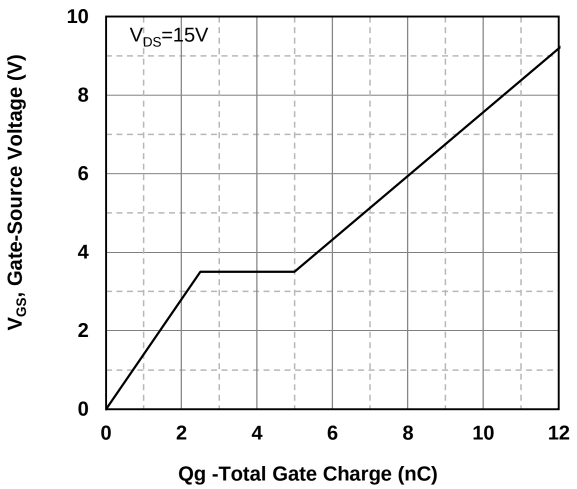


Fig2. Typical Gate Charge Vs.Gate-Source Voltage

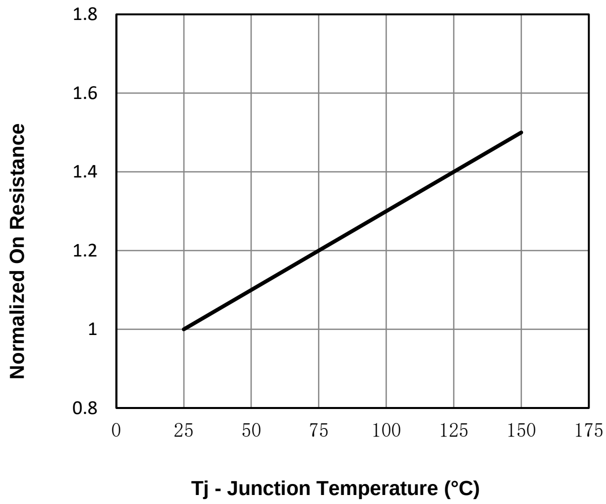


Fig3. Normalized On-Resistance Vs. Temperature

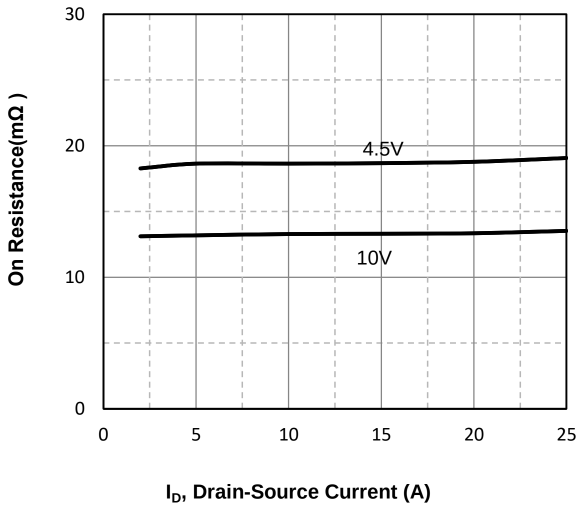


Fig4. On-Resistance Vs. Drain-Source Current

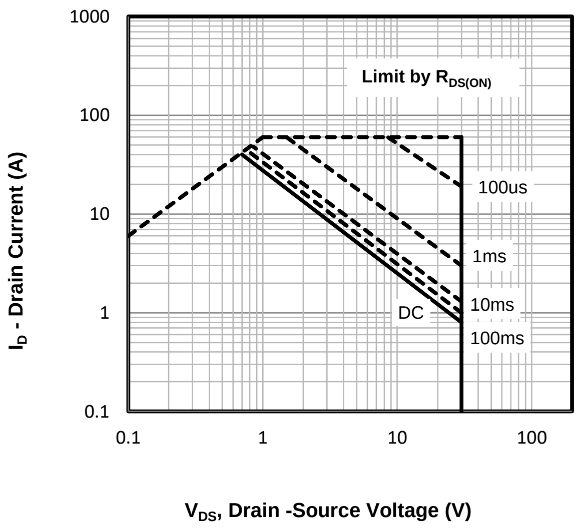


Fig5. Maximum Safe Operating Area

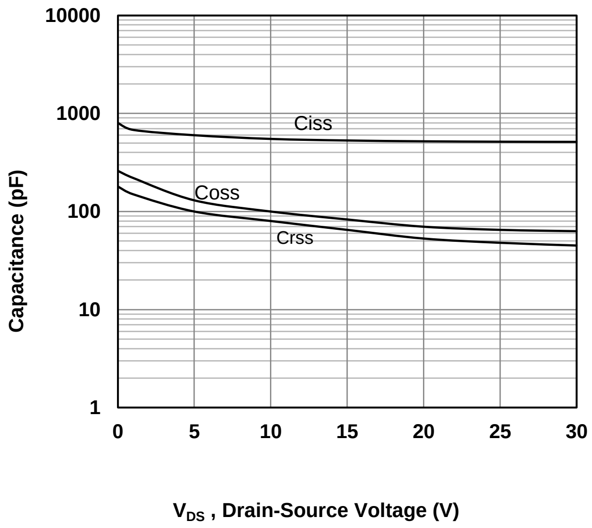
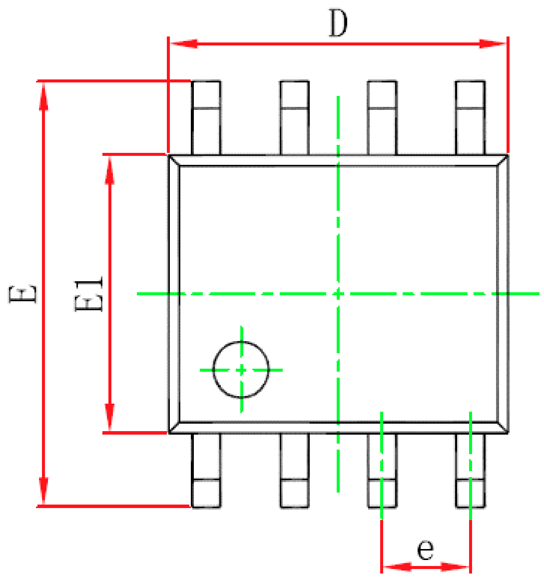
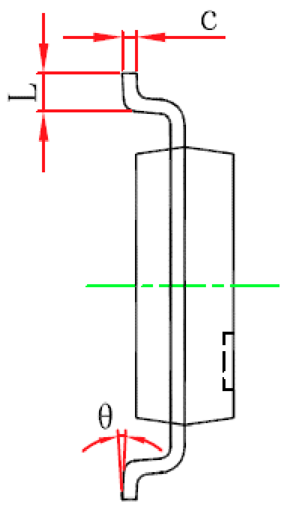
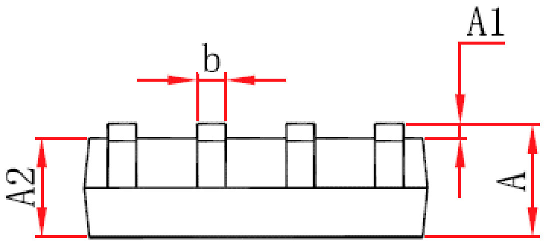


Fig6 Typical Capacitance Vs.Drain-Source

SOP-8 Package information







Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
e	1.270(BSC)		0.050(BSC)	
E	5.800	6.200	0.028	0.035
E1	3.800	4.000	0.057	0.069
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°