



## Features

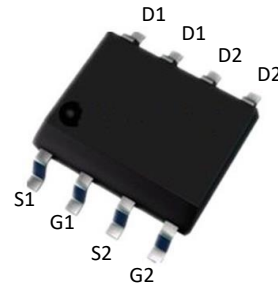
- Trench Power LV MOSFET technology
- High Density Cell Design for Low  $R_{DS(ON)}$
- High Speed switching

## Product Summary

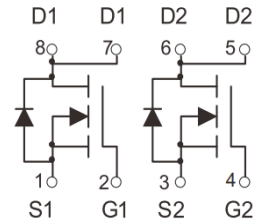
$V_{DS}$	$R_{DS(ON)}$ MAX	$I_D$ MAX
40V	17m $\Omega$ @10V	10A
	25m $\Omega$ @4.5V	

## Application

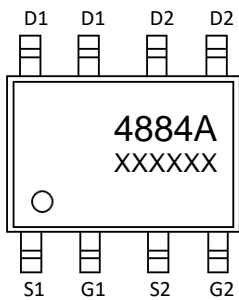
- Battery protection
- Load switch
- Power management



SOP-8 top view



Schematic diagram



4884A: Device code  
XXXXXX: Code



Marking and pin assignment

Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter	Rating	Unit	
<b>Common Ratings (TC=25°C Unless Otherwise Noted)</b>				
$V_{DS}$	Drain-Source Breakdown Voltage	40	V	
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V	
$T_J$	Maximum Junction Temperature	150	°C	
$T_{STG}$	Storage Temperature Range	-55 to 150	°C	
$I_S$	Diode Continuous Forward Current	10	$T_c=25^\circ C$	A
<b>Mounted on Large Heat Sink</b>				
$I_{DM}$	Pulse Drain Current Tested	50	$T_c=25^\circ C$	A
$I_D$	Continuous Drain Current@GS=10V	10	$T_c=25^\circ C$	A
$P_D$	Maximum Power Dissipation	2	$T_c=25^\circ C$	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient>(*1 in2 Pad of 2-oz Copper), Max.)	60	°C/W	

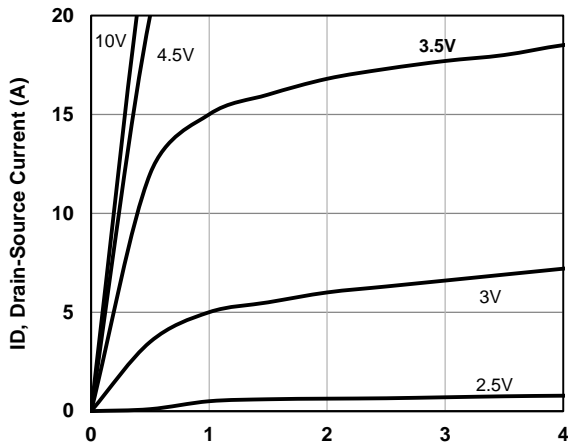
Ordering Information (Example)						
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
FS4884	SOP-8	4884A	3,000	6,000	42,000	13"reel



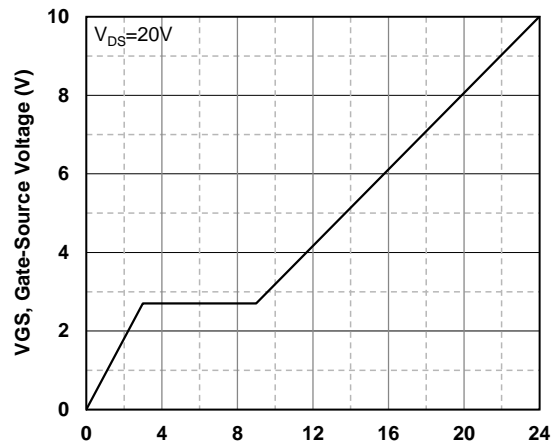
Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T <sub>J</sub> = 25°C (unless otherwise stated)						
BV <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	40	--	--	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =40V, V <sub>GS</sub> =0V	--	--	1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	--	--	±100	nA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1	1.5	2.5	V
R <sub>DS(on)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =10A	--	13	17	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =10A	--	19	25	
Dynamic Electrical Characteristics @ T <sub>J</sub> = 25°C (unless otherwise stated)						
C <sub>ISS</sub>	Input Capacitance	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V, f=1MHz	--	965	--	pF
C <sub>OSS</sub>	Output Capacitance		--	110	--	pF
C <sub>RSS</sub>	Reverse Transfer Capacitance		--	95	--	pF
Switching Characteristics						
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =20V, I <sub>D</sub> =8A, V <sub>GS</sub> =10V	--	23	--	nC
Q <sub>gs</sub>	Gate Source Charge		--	3.5	--	nC
Q <sub>gd</sub>	Gate Drain Charge		--	5.5	--	nC
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> =20V, R <sub>L</sub> =2.5Ω, V <sub>GS</sub> =10V, R <sub>G</sub> =3Ω	--	5.5	--	nS
t <sub>r</sub>	Turn-on Rise Time		--	15	--	nS
t <sub>d(off)</sub>	Turn-Off Delay Time		--	25	--	nS
t <sub>f</sub>	Turn-Off Fall Time		--	12	--	nS
Source- Drain Diode Characteristics						
V <sub>SD</sub>	Forward on voltage	T <sub>J</sub> =25°C, I <sub>S</sub> =10A,	--	--	1.2	V



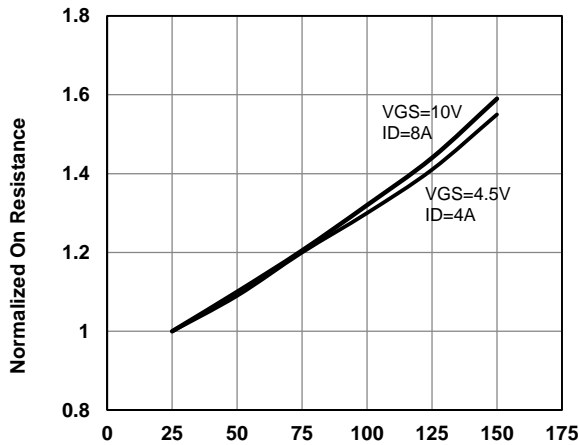
## Typical Operating Characteristics



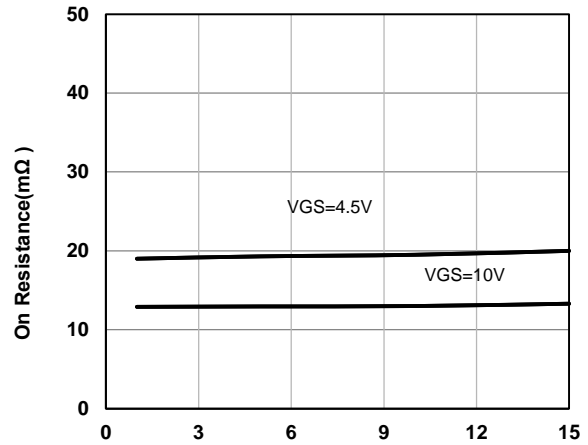
V<sub>DS</sub>, Drain -Source Voltage (V)  
Fig1. Typical Output Characteristics



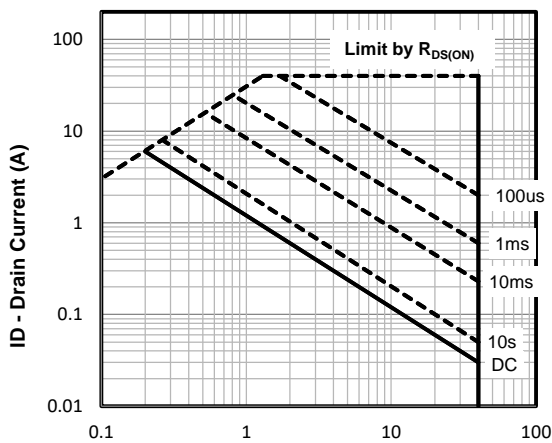
Q<sub>g</sub> -Total Gate Charge (nC)  
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



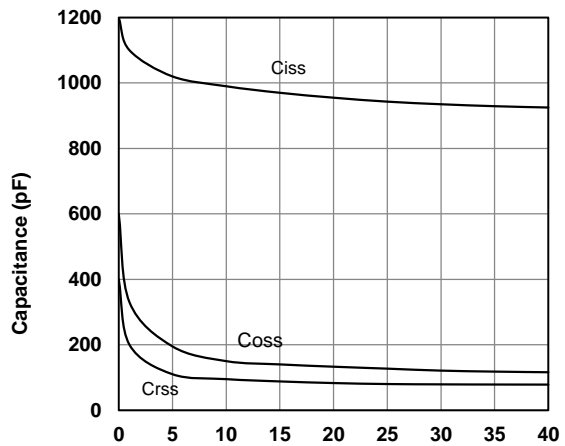
T<sub>j</sub> - Junction Temperature (°C)  
Fig3. Normalized On-Resistance Vs. Temperature



I<sub>D</sub>, Drain-Source Current (A)  
Fig4. On-Resistance Vs. Drain-Source Current



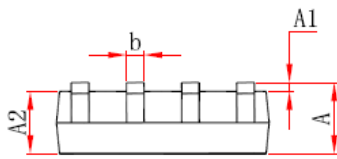
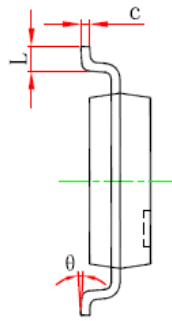
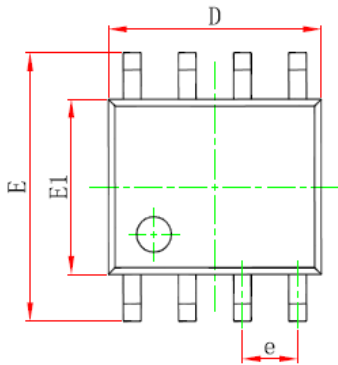
V<sub>DS</sub>, Drain -Source Voltage (V)  
Fig5. Maximum Safe Operating Area



V<sub>DS</sub>, Drain-Source Voltage (V)  
Fig6. Typical Capacitance Vs. Drain-Source Voltage



## SOP-8 Package information



Symbol	Dimensions in Millimeters		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	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°