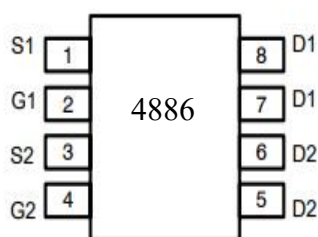


**Features**

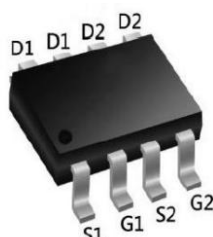
- Green Device Available
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

 $Bvdss$ **100V** **$Rdson$** **88mΩ** **ID** **8A****Application****RoHS**

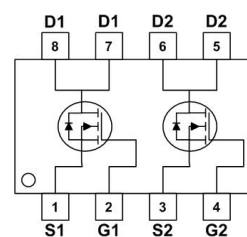
- Power management functions
- Synchronous-rectification applications
- DC-DC Converter

Package

Marking and pin assignment



SOP-8 top view



Schematic diagram

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
4886	HL4886	SOP-8	3000

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current, $V_{GS}@10V^1$	$I_D@T_C=25^\circ C$	8	A
	$I_D@T_C=100^\circ C$	5	A
Pulsed Drain Current ²	I_{DM}	15	A
Single Pulsed Avalanche Energy ³	EAS	6	mJ
Avalanche Current	I_{AS}	--	A
Total Power Dissipation ³	P_D	5	W
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ C$

Thermal Resistance Ratings

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient ¹	--	125	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case ¹	--	3.6	$^\circ C/W$



Ordering Information

Ordering Number	Package	Pin Assignment						Packing
Halogen Free		G1	G2	D1	D2	S1	S2	
HL4886	SOP-8	2	4	7,8	5,6	1	3	Tape Reel

Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	μA
Gate to Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	1	1.5	2.5	V
Static Drain-Source On-Resistance ³	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$	-	88	115	m Ω
		$V_{GS}=4.5V, I_D=2A$	-	100	140	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	-	610	-	pF
Output Capacitance	C_{oss}		-	40	-	
Reverse Transfer Capacitance	C_{rss}		-	25	-	
Total Gate Charge	Q_g	$V_{DS}=50V, V_{GS}=10V, I_D=2A$	-	12	-	nC
Gate-Source Charge	Q_{gs}		-	2.2	-	
Gate-Drain("Miller")Charge	Q_{gd}		-	2.5	-	
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=50V, I_D=3A,$ $V_{GS}=10V, R_G=1.8\Omega$	-	7	-	ns
Turn-on Rise Time	t_r		-	5	-	
Turn-off Delay Time	$t_{d(off)}$		-	16	-	
Turn-off Fall Time	t_f		-	6	-	
Maximum Continuous Drain to Source Diode Forward Current	I_S	--	-	-	3	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}	--	-	-	8	A
Drain to Source Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0V$	-	-	1.2	V
Body Diode Reverse Recovery Time	t_{rr}	$I_F=3A, di/dt=100A/\mu s$	-	21	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	21	-	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. EAS condition : $T_J=25^{\circ}\text{C}, V_{DD}=50V, V_G=10V, L=0.5mH, R_G=25\Omega, I_{AS}=4A$.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.



Typical Performance Characteristics

Figure1: Output Characteristics

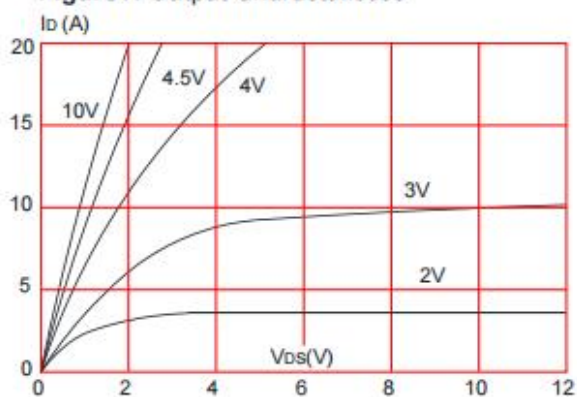


Figure 2: Typical Transfer Characteristics

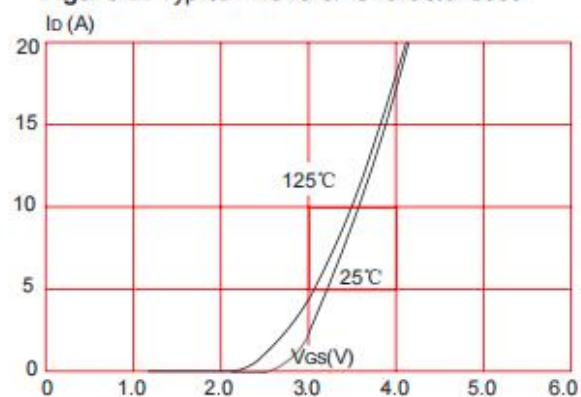


Figure 3: On-resistance vs. Drain Current

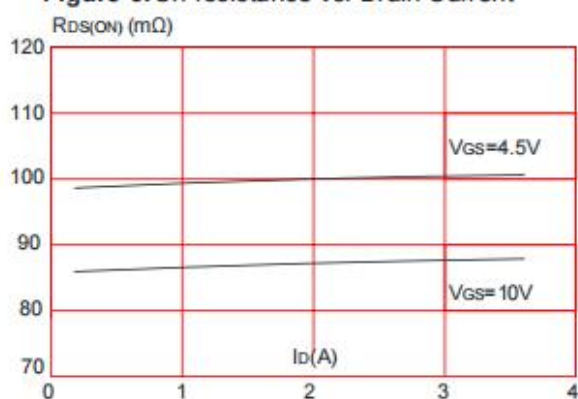


Figure 4: Body Diode Characteristics

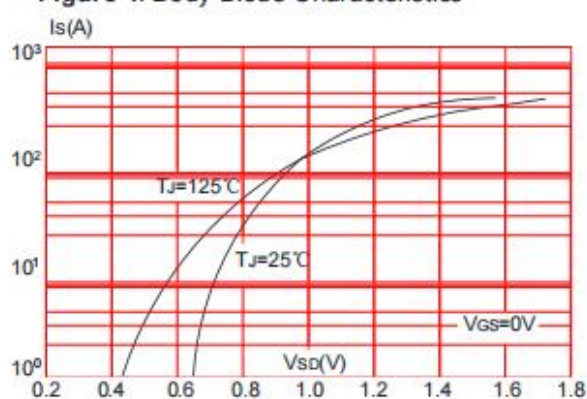


Figure 5: Gate Charge Characteristics

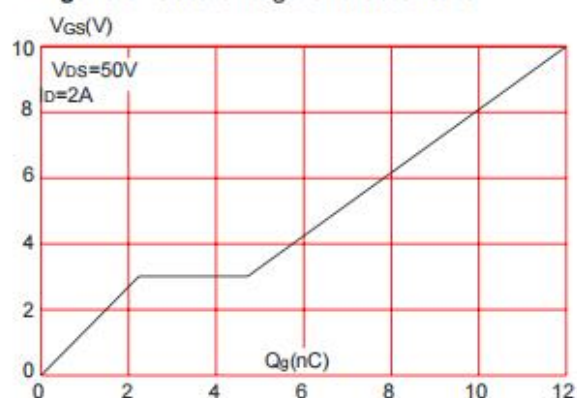


Figure 6: Capacitance Characteristics

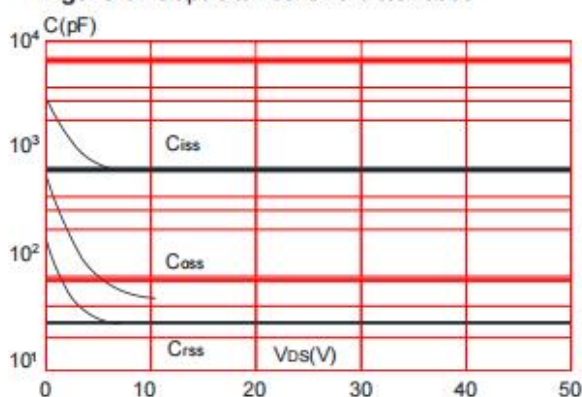
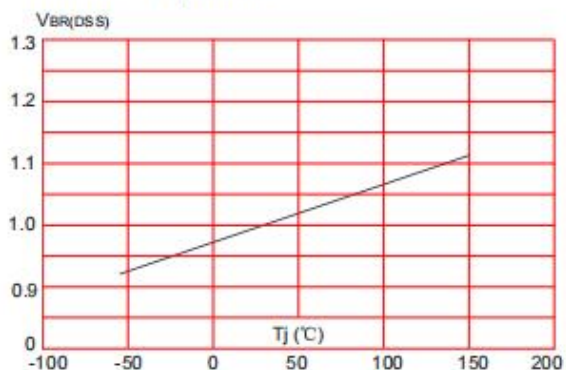
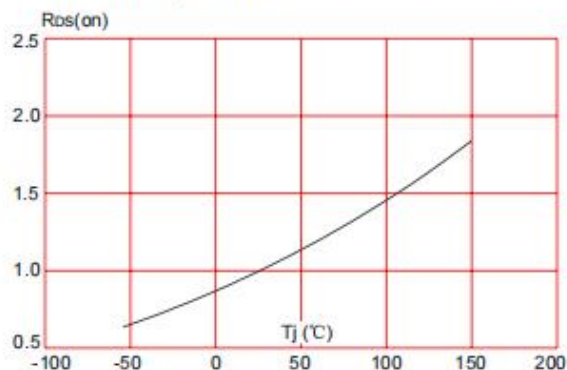
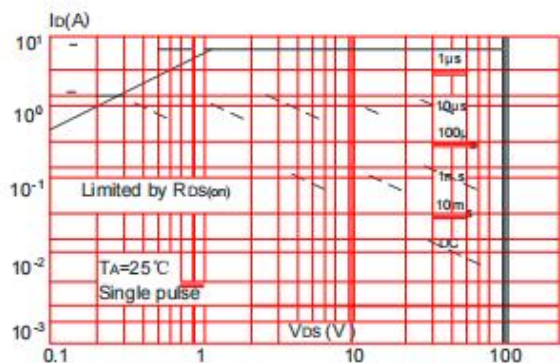
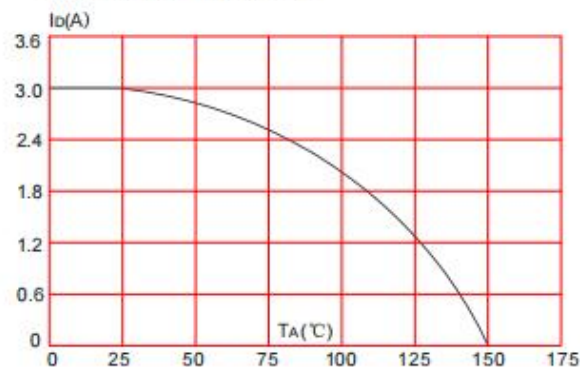
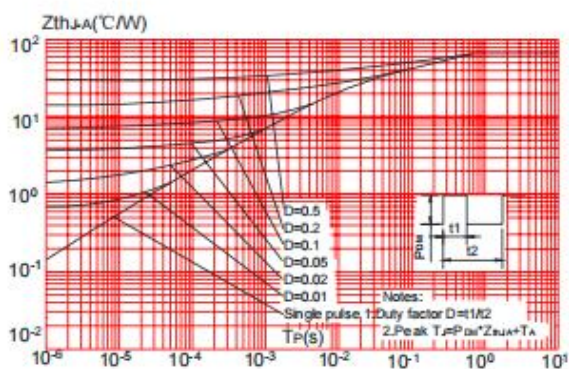
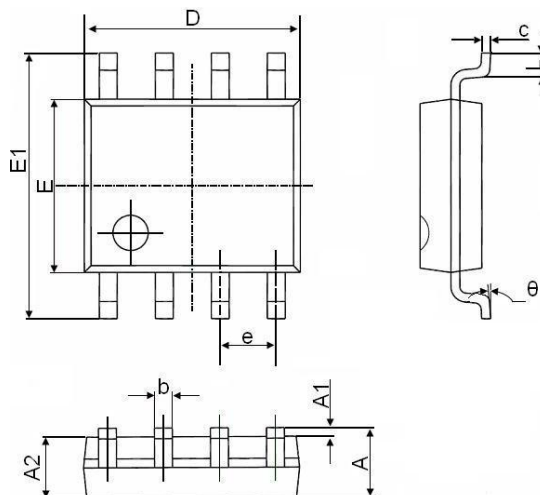


**Figure 7:** Normalized Breakdown Voltage vs. Junction Temperature**Figure 8:** Normalized on Resistance vs. Junction Temperature**Figure 9:** Maximum Safe Operating Area**Figure 10:** Maximum Continuous Drain Current vs. Ambient Temperature**Figure.11:** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Package Mechanical Data SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



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