

- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology
- ★ 100% EAS Guaranteed

Product Summary

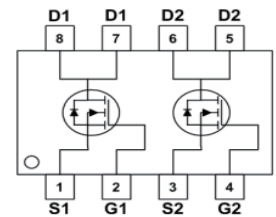
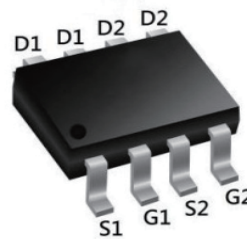
BVDSS	RDS(on)	ID
40V	17mΩ	8A

Description

The 4882 is the high cell density trenched N-ch MOSFETs, which provide excellent RDS(on) and gate charge for most of the synchronous buck converter applications.

The 4882 meet the RoHS and Green Product, requirement 100% EAS guaranteed with full function reliability approved.

SOP8 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
V _{DS}	Drain-Source voltage	40	V
V _{GS}	Gate-Source voltage	±20	V
I _D	Continuous Drain Current	T _A =25°C	8
		T _A =100°C	6
I _{DM}	Pulsed Drain Current ₁	32.8	A
EAS	Single Pulse Avalanche Energy ₂	13	mJ
P _D	Total Power Dissipation	T _A =25°C	2.9
R _{θJA}	Thermal Resistance, Junction to Ambient	63	°C/W
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

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

Symbol	Parameter	Test condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=40V, V_{GS}=0V$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note3</small>	$V_{GS}=10V, I_D=8A$	-	17	22	m Ω
		$V_{GS}=4.5V, I_D=5A$	-	25	35	m Ω
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=20V, V_{GS}=0V, f=1.0MHz$	-	633	-	pF
C_{oss}	Output Capacitance		-	67	-	pF
C_{riss}	Reverse Transfer Capacitance		-	58	-	pF
Q_g	Total Gate Charge	$V_{DS}=20V, I_D=8A, V_{GS}=10V$	-	12	-	nC
Q_{gs}	Gate-Source Charge		-	3.2	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	3.1	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=20V, R_L=2.5\Omega$ $V_{GS}=10V, R_{REN}=3\Omega$	-	4	-	ns
t_r	Turn-on Rise Time		-	3	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	15	-	ns
t_f	Turn-off Fall Time		-	2	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	8	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	32	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=8A$	-	-	1.2	V

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current ^{1,5}	$V_G=V_b=0V, \text{Force Current}$	---	---	28	A
I_{SM}	Pulsed Source Current ^{2,5}		---	---	56	A
V_{SD}	Diode Forward Voltage ²	$V_{GS}=0V, I_S=1A, T_J=25^\circ\text{C}$	---	---	1.2	V

Note :

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

 2. EAS condition : $T_J=25^\circ\text{C}, V_{DD}=20V, V_G=10V, L=0.5mH, R_g=25\Omega, I_{AS}=7.2A$
 $T_J=25^\circ\text{C}, V_{DD}=-20V, V_G=-10V, L=0.5mH, R_g=25\Omega, I_{AS}=-8.4A$

 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

Figure 1: Output Characteristics

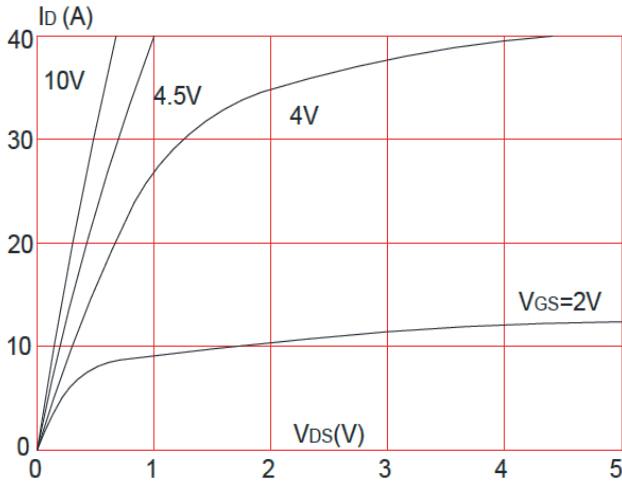


Figure 2: Typical Transfer Characteristics

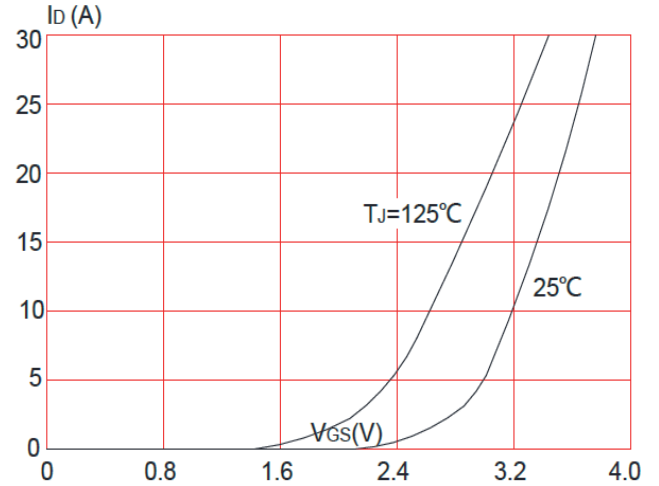


Figure 3: On-resistance vs. Drain Current

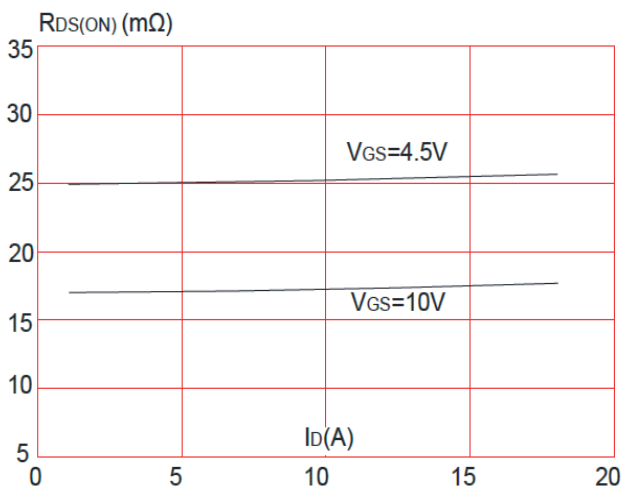


Figure 4: Body Diode Characteristics

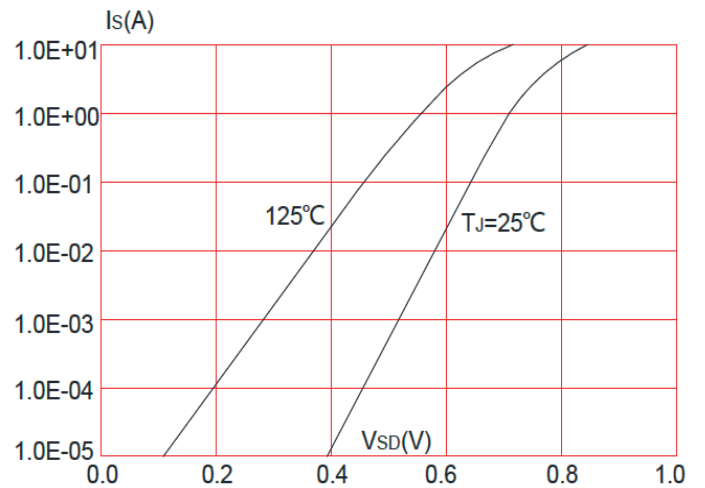


Figure 5: Gate Charge Characteristics

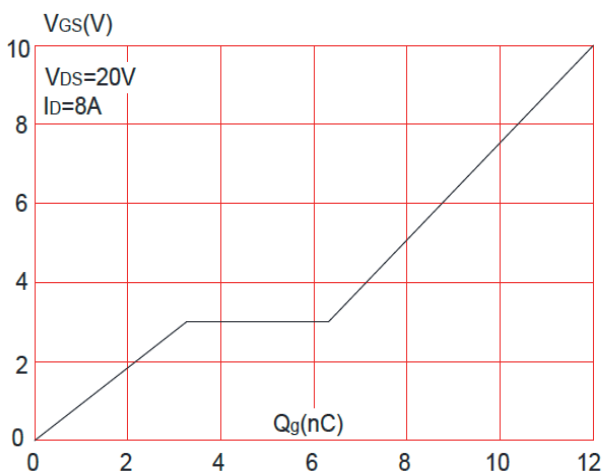
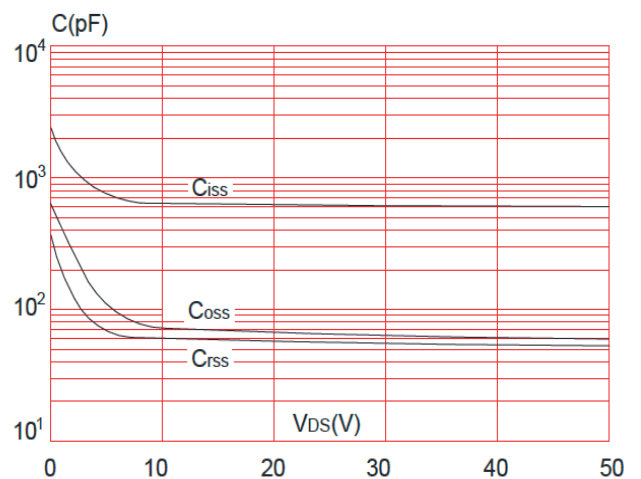


Figure 6: Capacitance Characteristics



Typical Performance Characteristics

Figure 7: Normalized Breakdown Voltage

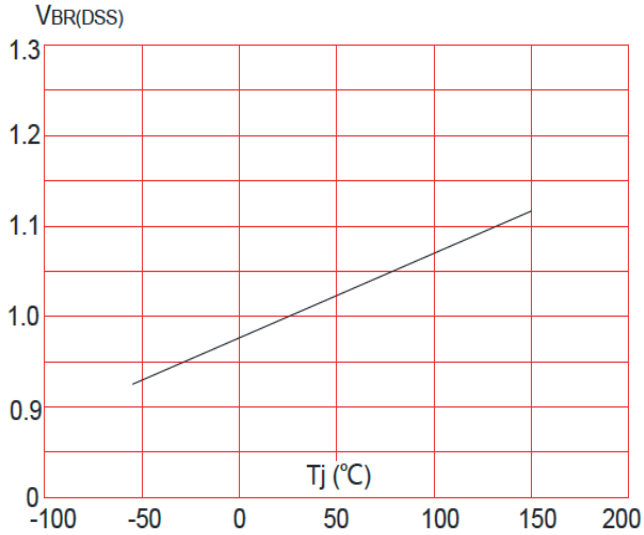


Figure 8: Normalized on Resistance vs. Junction Temperature

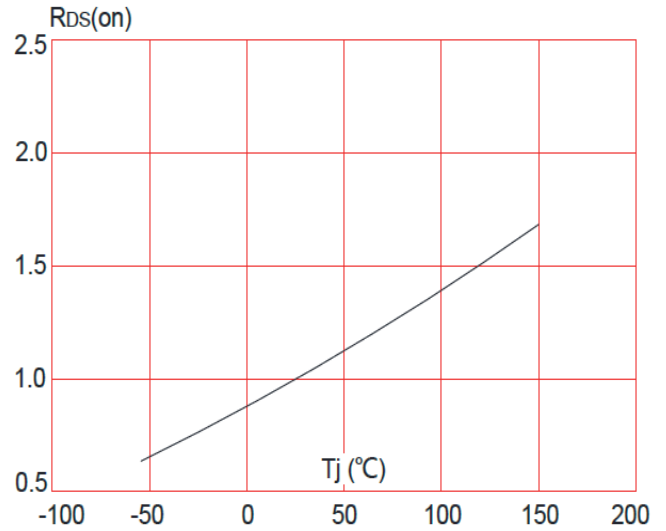


Figure 9: Maximum Safe Operating Area

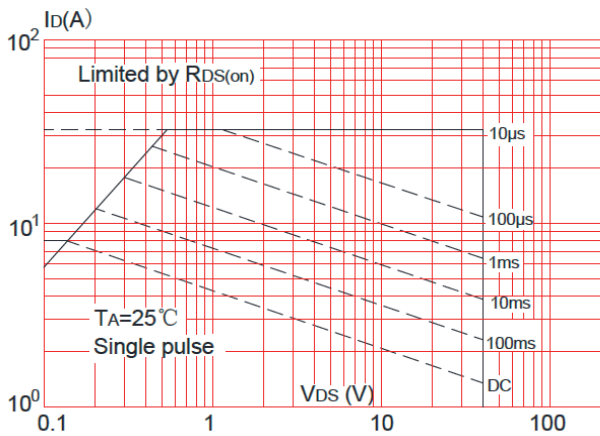


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

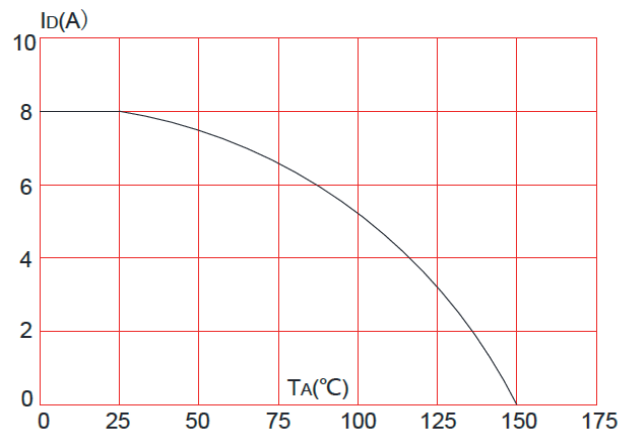
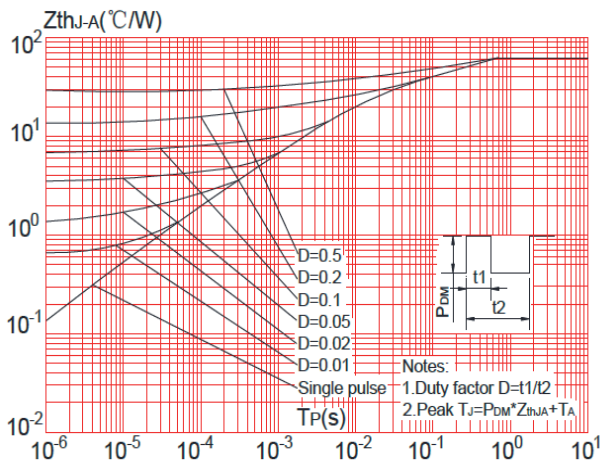
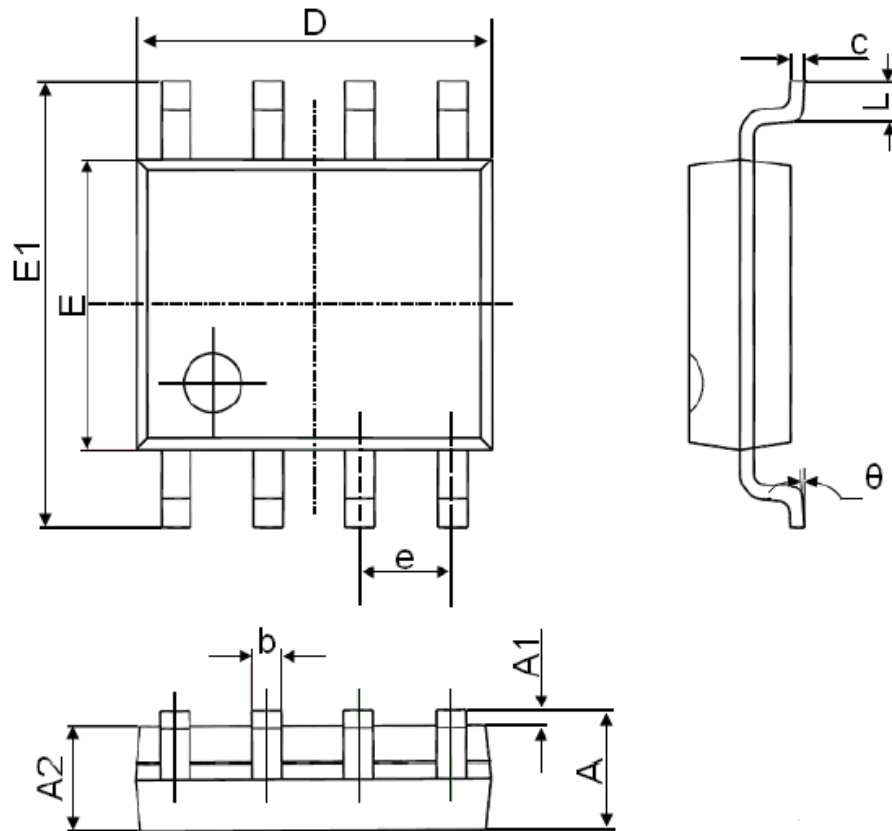


Figure 11: Maximum Effective Transient Thermal Impedance



SOP-8 Package Information



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
theta	0°	8°	0°	8°

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