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

Product Summary

BVDSS	RDSON	ID
-30V	18mΩ	-9.5A

Description

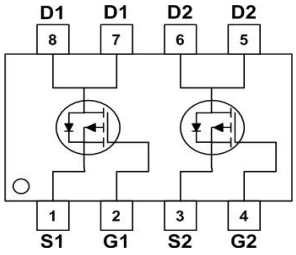
The ZX 4805A is the high cell density trenched P-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The ZX 4805A meet the RoHS and Green Product

Dual SOP8 Pin Configuration



pin assignment



Schematic diagram

Package Marking and Ordering Information

Product	Package	Marking	Packing	Min Unit Quantity
ZX 4805	SOP8	*	3000PCS/Reel	3000PCS

Absolute Maximum Ratings (T_A=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain- Source Voltage		-30	V
V_{GSS}	Gate- Source Voltage		±20	V
I_D	Continuous Drain Current	T_A= 25℃	-9.5	A
		T_A = 100℃	-5.9	A
I_{DM}	Pulsed Drain Current note1		-36	A
E_{AS}	Single Pulsed Avalanche Energy note2		25	mJ
P_D	Power Dissipation	T_A = 25℃	3.3	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		38	℃/W
T_J , T_{STG}	Operating and Storage Temperature Range		-55 to + 150	℃

Electrical Characteristics (T_J=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-30	---	---	V
$\triangle BV_{DSS}/\triangle T_J$	BV_{DSS} Temperature Coefficient	Reference to 25℃ , I_D=-1mA	---	-0.022	---	V/℃
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-10V , I_D=-6A	---	18	25	mΩ
		V_{GS}=-4.5V , I_D=-4A	---	25	42	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1.0	---	-2.5	V
$\triangle V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	4.6	---	mV/℃
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-24V , V_{GS}=0V , T_J=25℃	---	---	-1	uA
		V_{DS}=-24V , V_{GS}=0V , T_J=55℃	---	---	-5	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-5V , I_D=-6A	---	17	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	13	---	Ω
Q_g	Total Gate Charge (-4.5V)	V_{DS}=-15V , V_{GS}=-4.5V , I_D=-6A	---	12.6	---	nC
Q_{gs}	Gate-Source Charge		---	4.8	---	
Q_{gd}	Gate-Drain Charge		---	4.8	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-15V , V_{GS}=-10V , R_G=3.3Ω , I_D=-6A	---	4.6	---	ns
T_r	Rise Time		---	14.8	---	
$T_{d(off)}$	Turn-Off Delay Time		---	41	---	
T_f	Fall Time		---	19.6	---	
C_{iss}	Input Capacitance	V_{DS}=-15V , V_{GS}=0V , f=1MHz	---	1345	---	pF
C_{oss}	Output Capacitance		---	194	---	
C_{rss}	Reverse Transfer Capacitance		---	158	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	---	---	-6.5	A
I_{SM}	Pulsed Source Current[2,5]		---	---	-26	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=-1A , T_J=25℃	---	---	-1.2	V
t_{rr}	Reverse Recovery Time	I_F=-6A , dI/dt=100A/μs , T_J=25℃	---	16.3	---	nS
Q_{rr}	Reverse Recovery Charge		---	5.9	---	nC

Note :

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3. The EAS data shows Max. rating . The test condition is V_{DD}=-25V,V_{GS}=-10V,L=0.1mH, I_{AS}=-38A
4. The power dissipation is limited by 150℃ junction temperature
5. The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Performance Characteristics

Figure1 : Output Characteristics

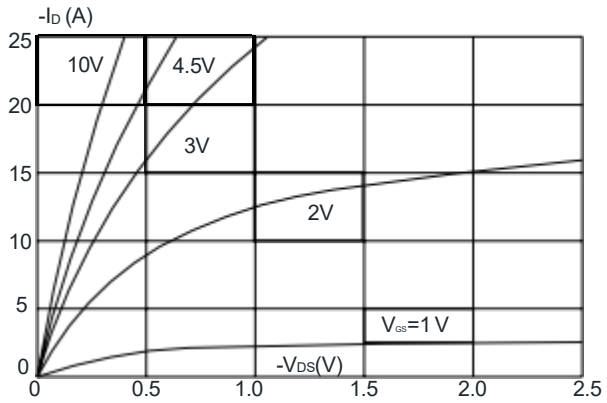


Figure 2 : Typical Transfer Characteristics

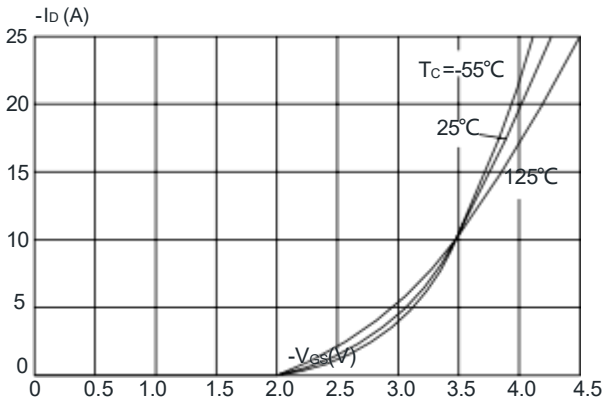


Figure 3: On-resistance vs. Drain Current

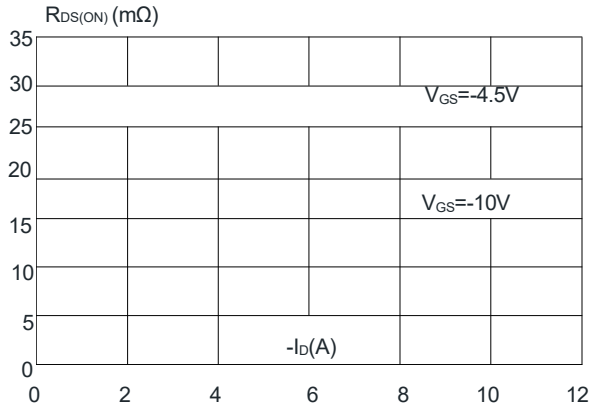


Figure 4 : Body Diode Characteristics

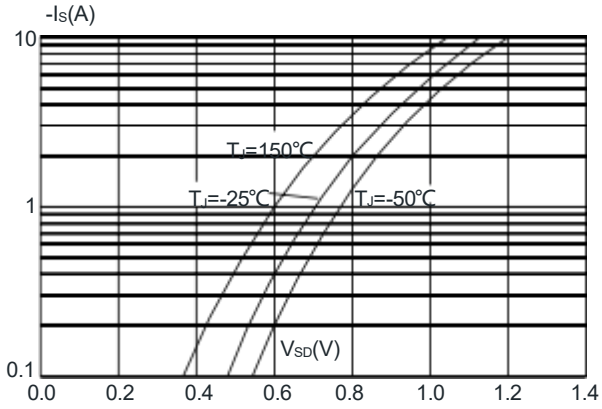


Figure 5: Gate Charge Characteristics

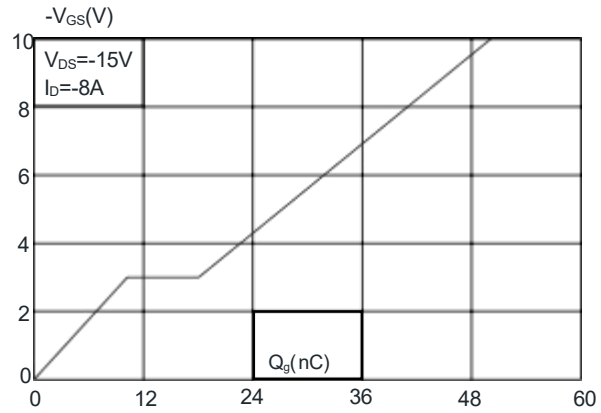


Figure 6: Capacitance Characteristics

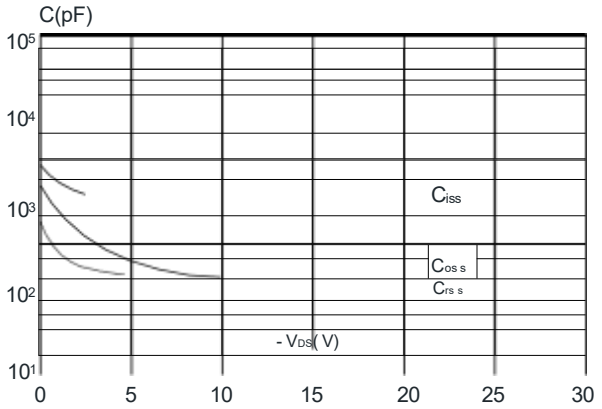


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

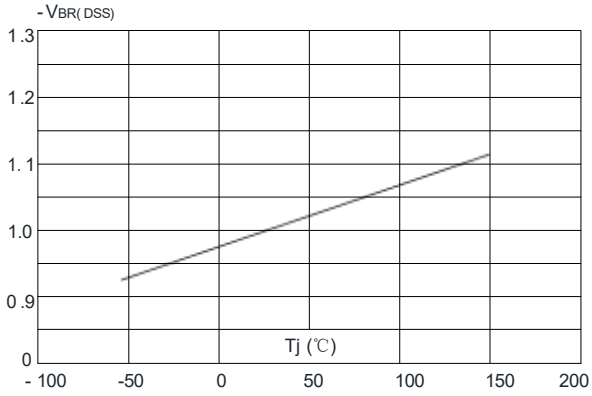


Figure 8: Normalized on Resistance vs. Junction Temperature

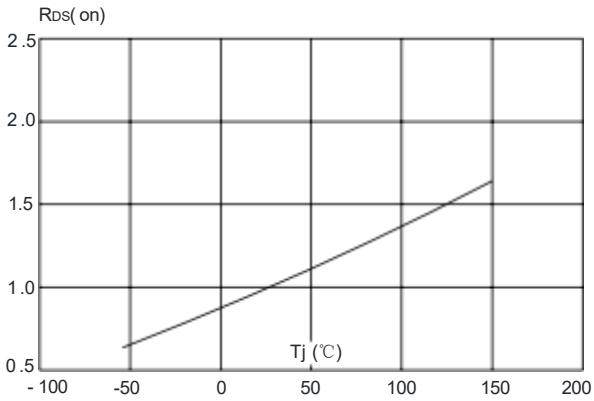
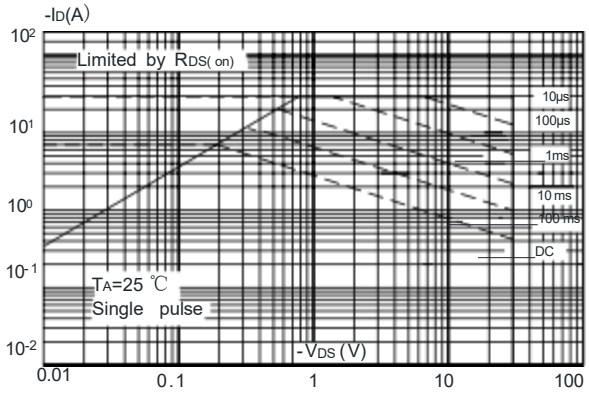


Figure 9: Maximum Safe Operating Area



Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

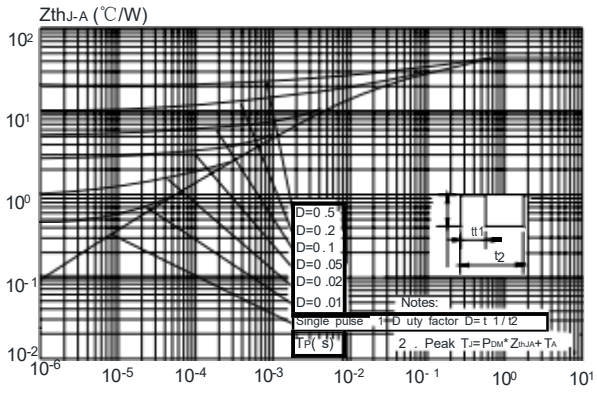
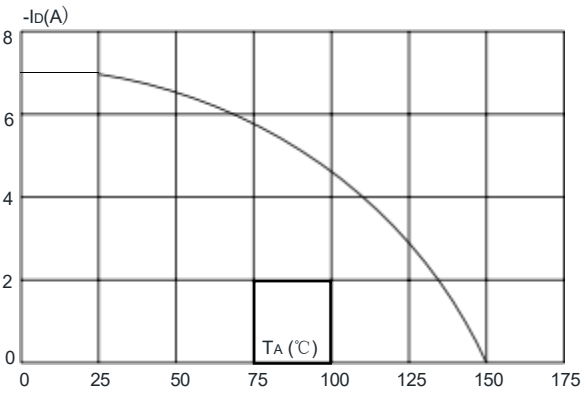
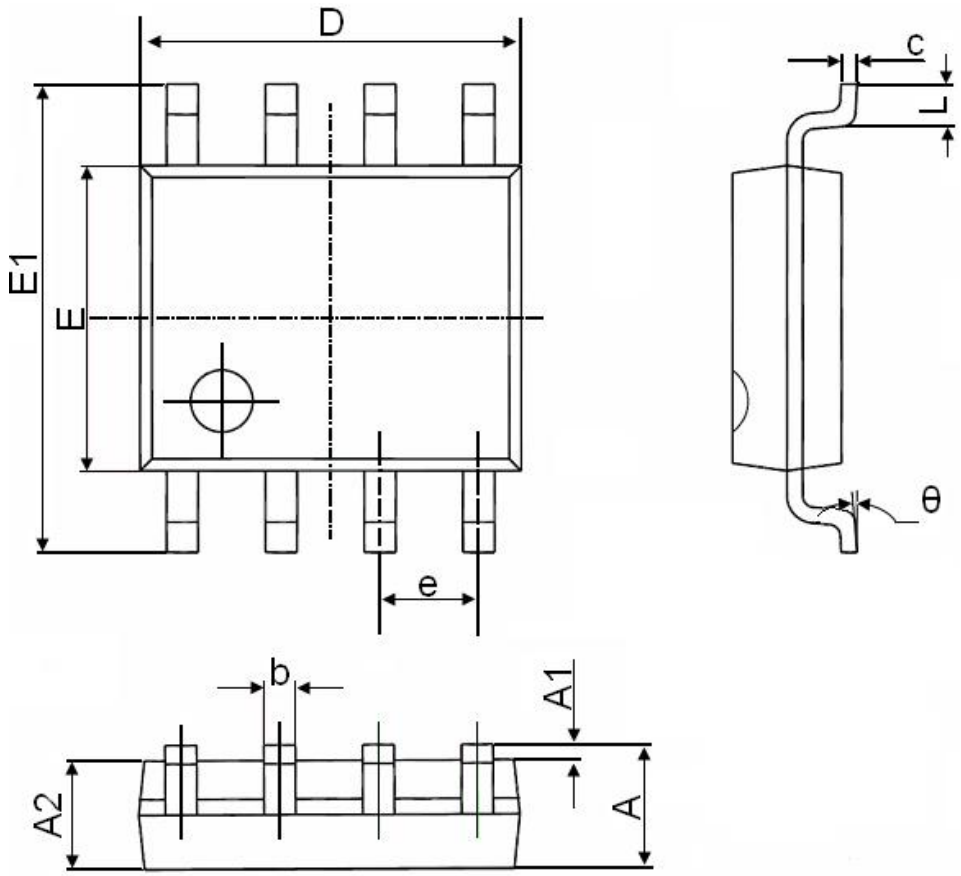


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature



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°