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

Product Summary

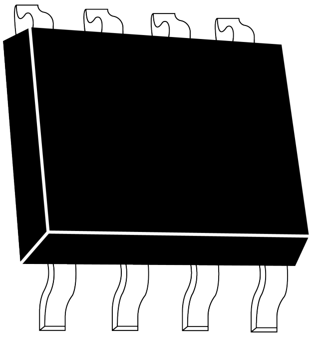
BVDSS	RDSON	ID
-30V	18mΩ	-9.5A

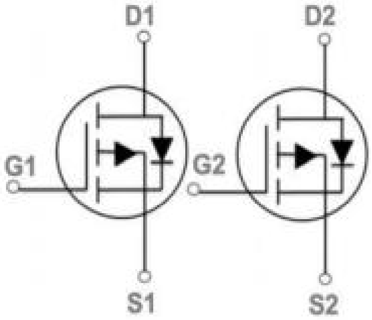
Description

The JH4805A 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 JH4805A meet the RoHS and Green Product

SOP8 Pin Configuration





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 inch^2 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

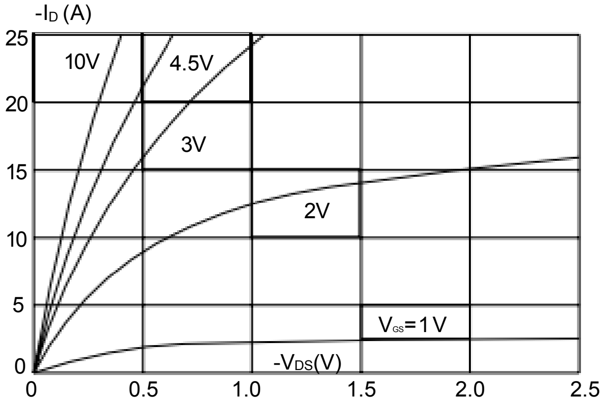


Figure 2: Typical Transfer Characteristics

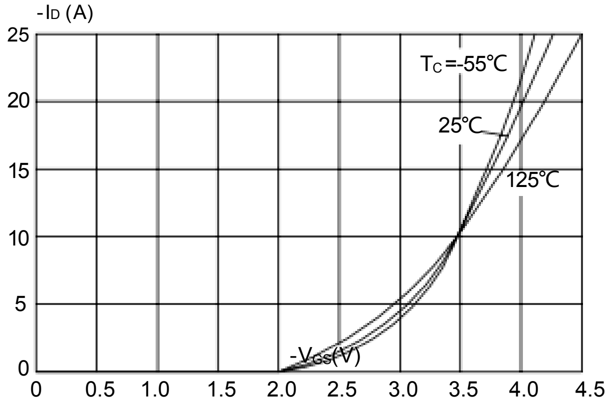


Figure 3: On-resistance vs. Drain Current

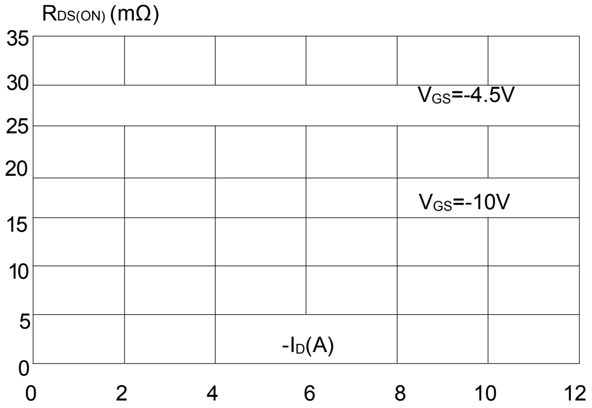


Figure 4 : Body Diode Characteristics

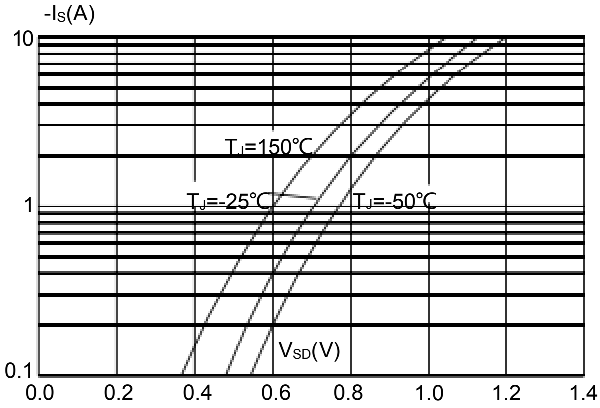


Figure 5: Gate Charge Characteristics

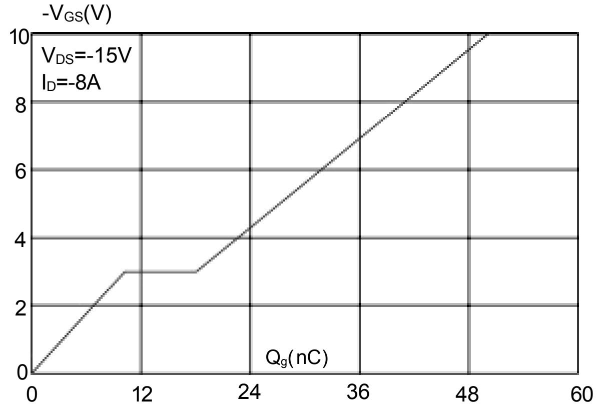


Figure 6: Capacitance Characteristics

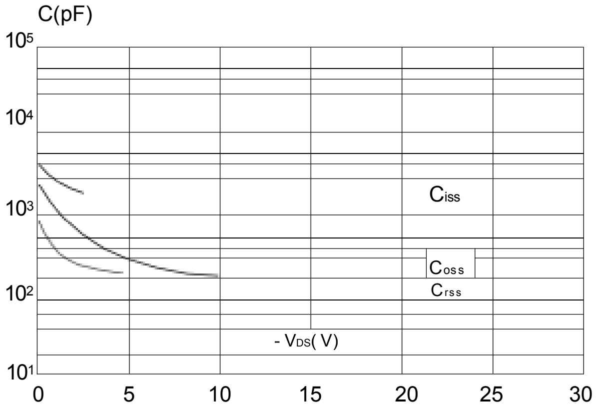


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

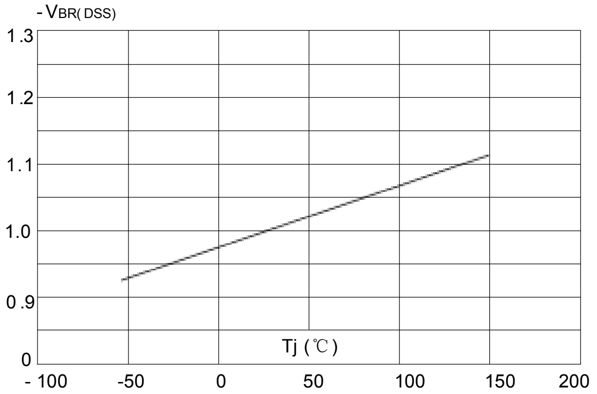


Figure 8: Normalized on Resistance vs. Junction Temperature

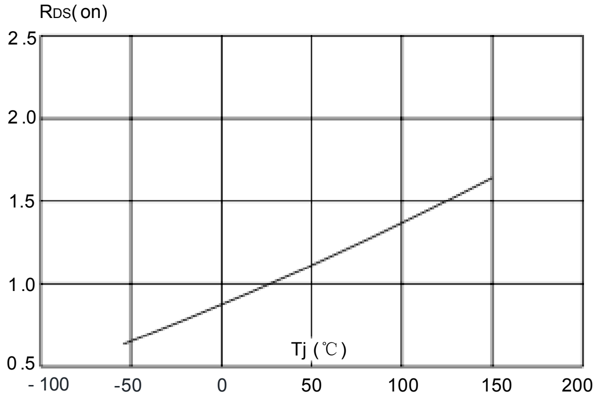


Figure 9: Maximum Safe Operating Area

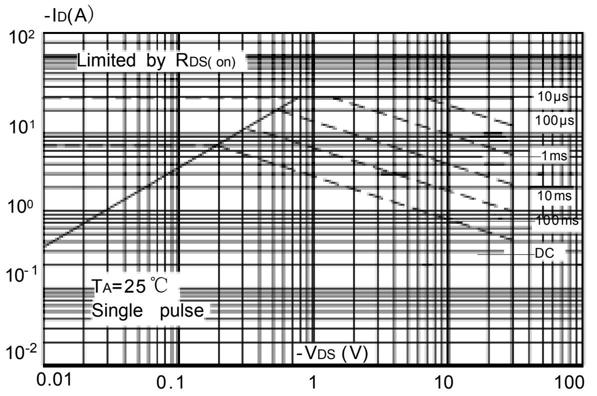
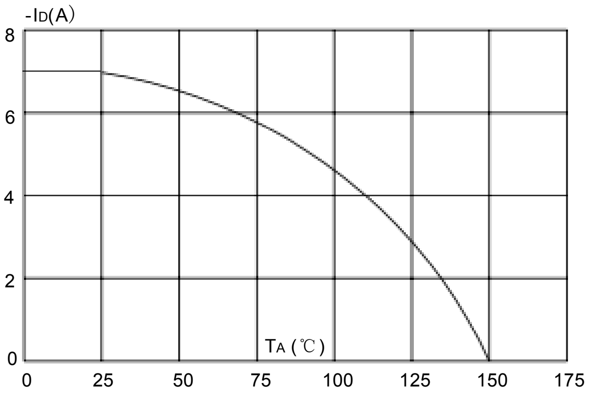
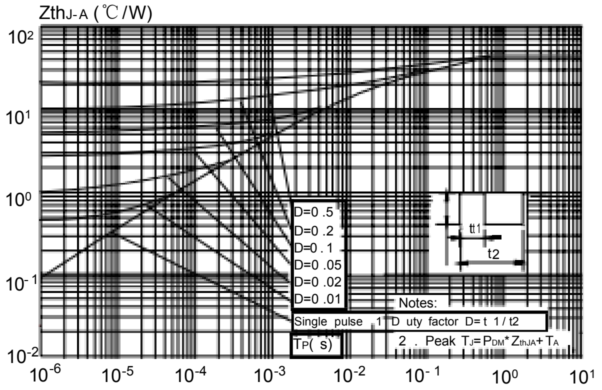


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

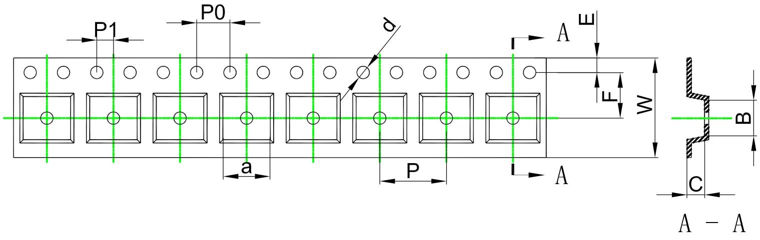


Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



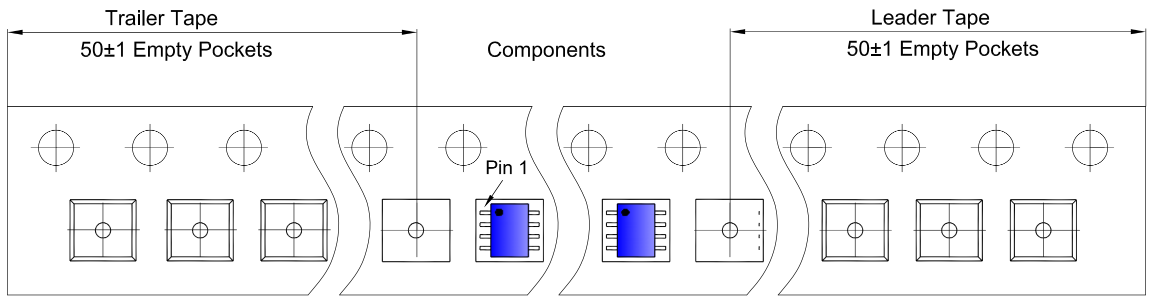
SOP8 Tape and Reel Information

Embossed Carrier Tape

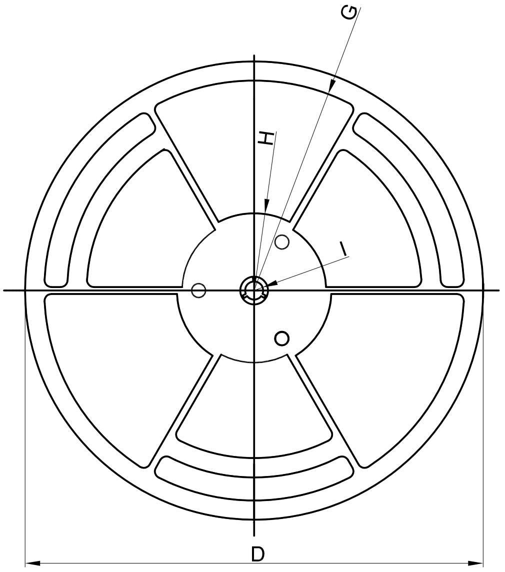


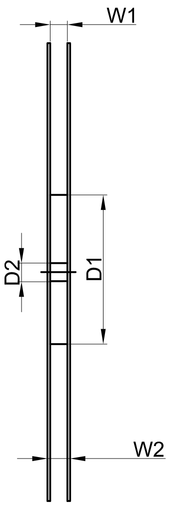
Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

Tape Leader and Trailer



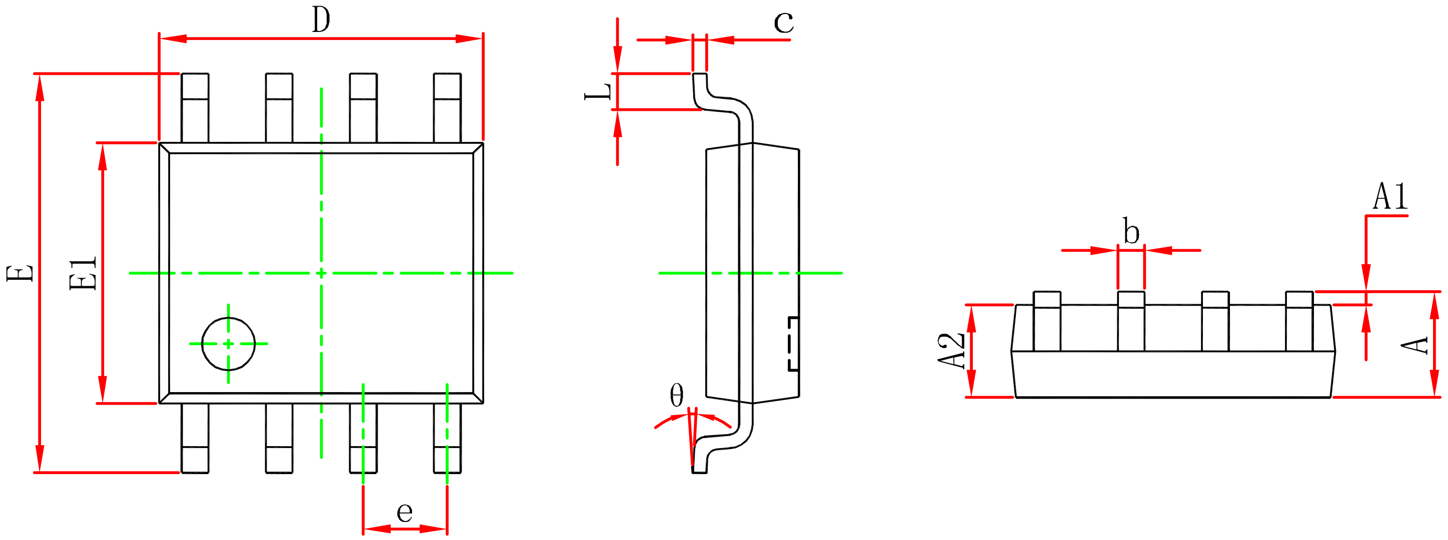
Reel





Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3,000 pcs	13 inch	6,000 pcs	360×360×65	48,000 pcs	565×380×390	



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°

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