Features

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

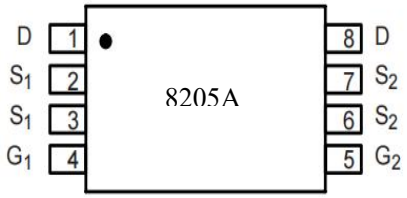
Bvdss	Rdson	ID
20V	19mΩ	4.5A

Application

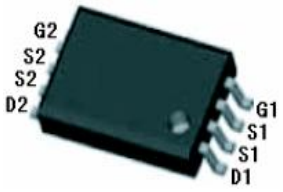
RoHS

- Battery protection
- Battery Powered Systems
- Power Management in Notebook Computer
- Portable Equipment

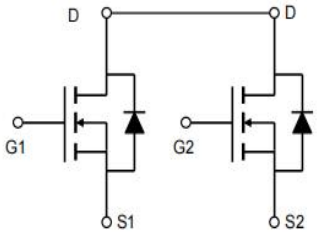
Package



Marking and pin assignment



TSSOP-8 Top view



Schematic diagram

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
8205A	8205A	TSSOP-8	5000

Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current,	I_D	4.5	A
Pulsed Drain Current	I_{DM}	18	A
Power Dissipation	P_D	1.2	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ 150	℃

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient	$R_{\theta JA}$	1.2	℃/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	--	℃/W

Ordering Information

Ordering Number	Package	Pin Assignment			Packing
Halogen Free		G	D	S	
HL8205A	TSSOP-8	4,5	1,8	2,3,6,7	Tape Reel

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS}=0V,I_D=250uA	19.5	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=19.5V,V_{GS}=0V	-	-	1	uA
Gate-body leakage current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V ,	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250uA	0.55	0.7	0.95	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V,I_D=3A	-	19	22	mΩ
		V_{GS}=2.5V,I_D=2A	-	22	29	
Input Capacitance[2]	C_{iss}	V_{DS}=10V,V_{GS}=0V, f=1MHz	-	465	-	pF
Output Capacitance	C_{oss}		-	99	-	
Reverse Transfer Capacitance	C_{rss}		-	76	-	
Total Gate Charge [2]	Q_g	V_{DS}=10V,V_{GS}=4.5V, I_D=4A	-	6.1	-	nC
Gate-Source Charge	Q_{gs}		-	0.9	-	
Gate-Drain Charge	Q_{gd}		-	1.8	-	
Turn-On Delay Time[2]	$T_{d(on)}$	V_{DD}=10V,V_{GS}=4.5V, R_{GEN}=10Ω,I_D=1A	-	8	-	ns
Rise Time	T_r		-	17	-	
Turn-Off Delay Time	$T_{d(off)}$		-	19	-	
Fall Time	T_f		-	12	-	
Diode Forward Voltage[1]	V_{SD}	V_{GS}=0V,I_S=2.8A	-	0.7	1.2	V
Diode forward current[3]	I_S	-	-	-	4.5	A

Notes:

1. Pulse Test: pulse width ≤ 300μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production.
3. Surface mounted on FR4 board, t ≤10sec.

Typical Characteristics

Figure 1 Output Characteristics

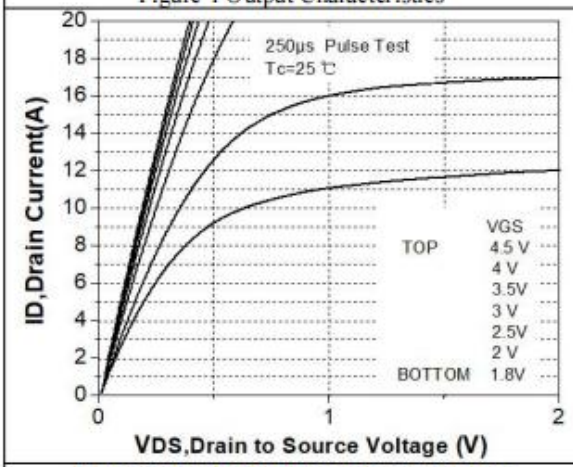


Figure 2 Transfer Characteristics

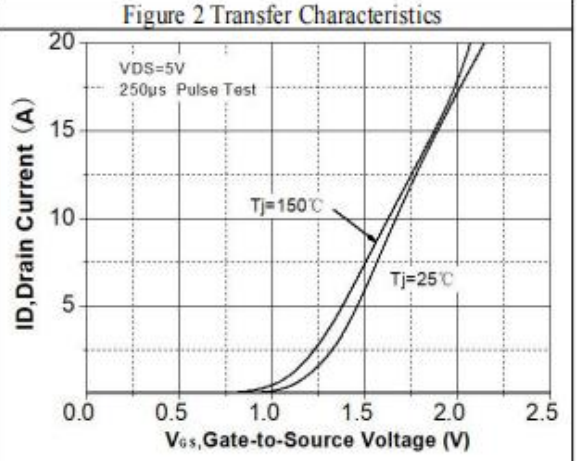


Figure 3 Threshold Voltage VS. Temperature

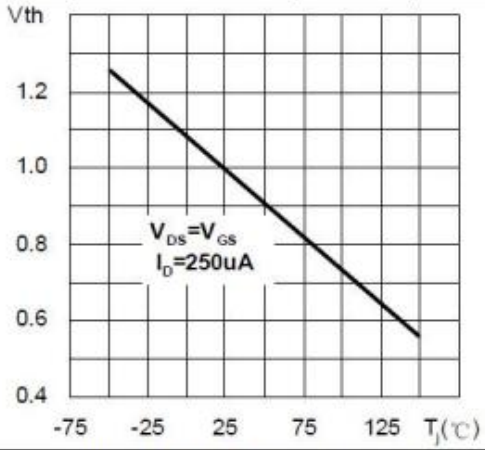


Figure 4 BVdss VS. Temperature

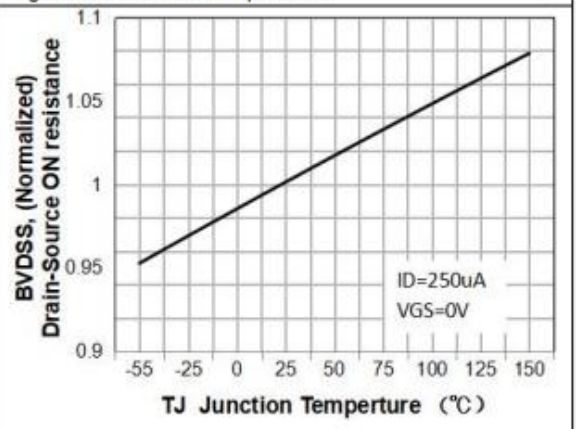


Figure 5 Rds(ON) VS. Temperature

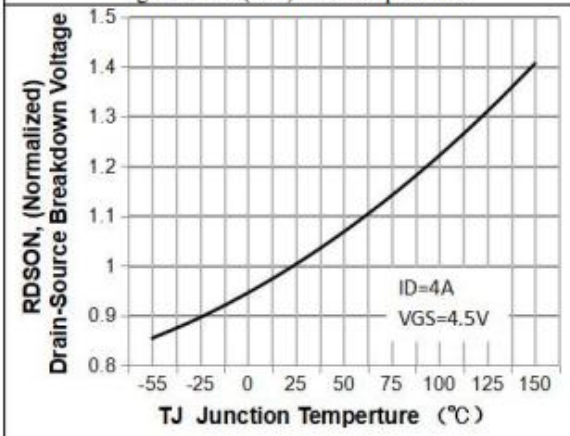


Figure 6 Source to Drain VS. Temperature

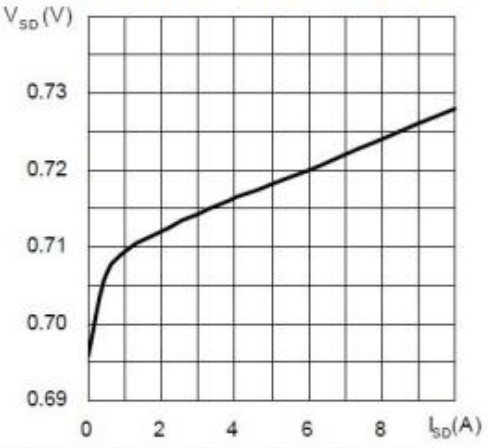


Figure 7 Safe Operating Area

Figure 8 Maximum Drain Current VS. Case Temperature

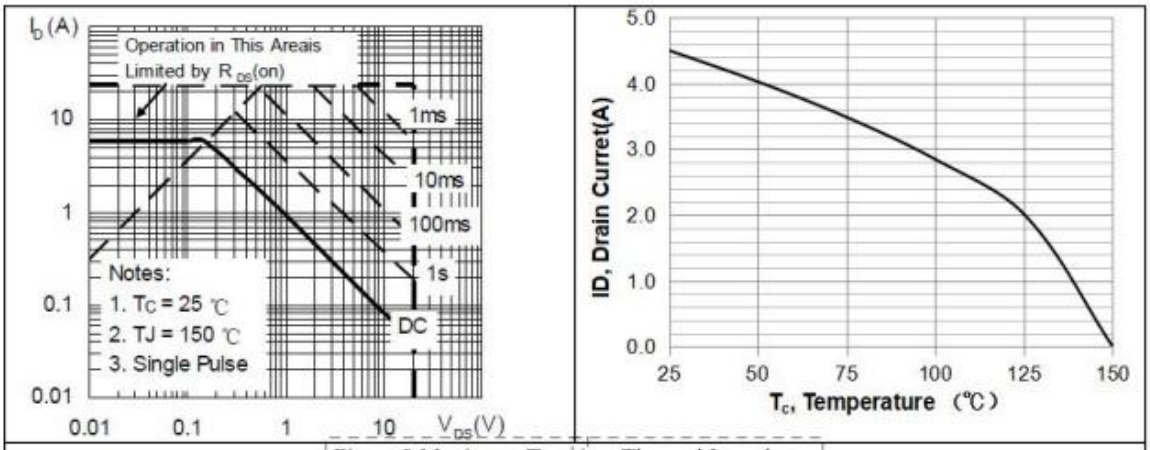
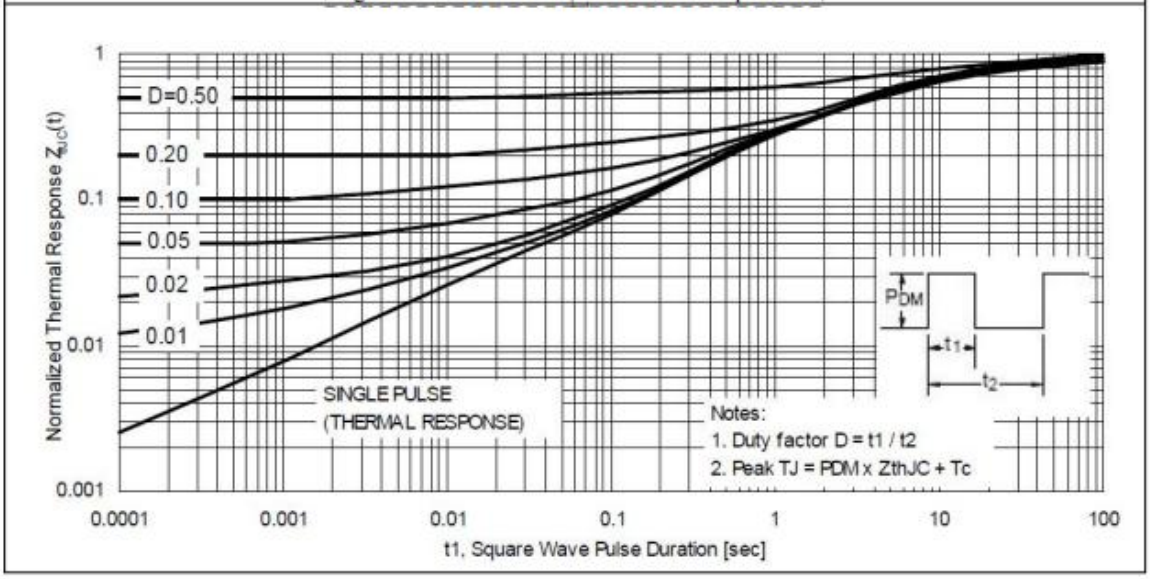
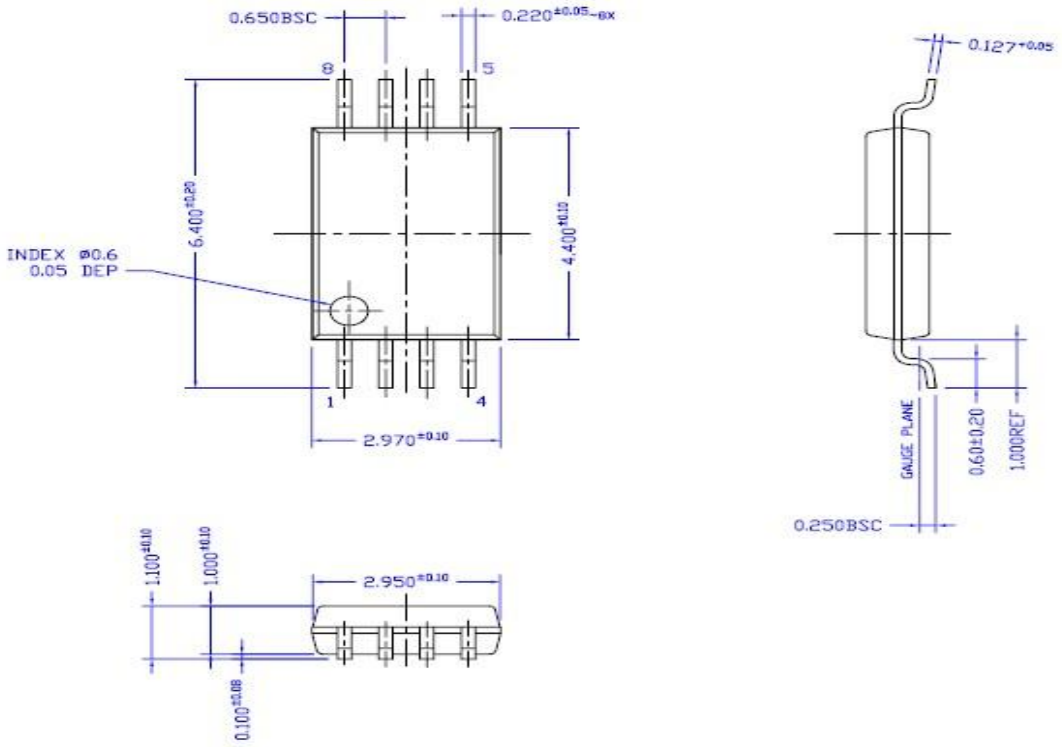


Figure 9 Maximum Transient Thermal Impedance



Package Dimensions TSSOP-8



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