



YEA SHIN TECHNOLOGY CO., LTD

YS8205AOE

Dual N-Channel Enhancement MOSFET



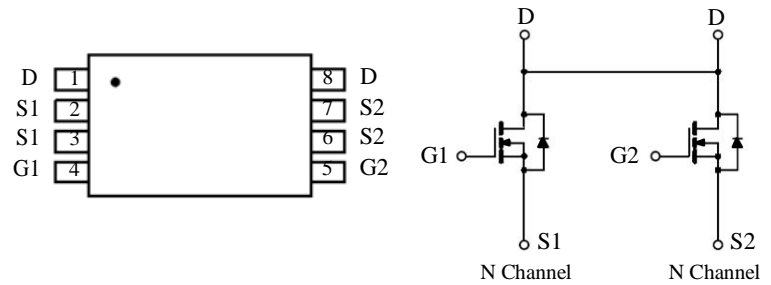
VDS= 20V, ID= 6A

Features

Super high dense cell trench design for low RDS(on).

Rugged and reliable.

TSSOP-8 Dual Pin Configuration



Applications

Ideal for Li ion battery pack application.

Marking : 8205A

ABSOLUTE MAXIMUM RATING (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	± 8	V
Drain Current-Continuous ^a @ TA = 25 °C -Pulse ^b	I _D	6	A
	I _{DM}	24	A
Drain-Source Diode Forward Current ^a	I _S	1.7	A
Maximum Power Dissipation ^a	P _D	TA=25°C	1.5
		TA=75°C	0.96
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	- 55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance,Junction-to-Ambient ^a	R _{thJA}	83	°C/W
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Note

a. Surface Mounted on FR4 Board , t = 10sec .

b. Pulse width limited by maximum junction temperature.

DEVICE CHARACTERISTICS

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Electrical Characteristics (T_j=25°C, unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit	
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V , I _D = 250uA	20			V	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V , V _{GS} = 0V			1	uA	
Gate-Body Leakage	I _{GSS}	V _{GS} = ±12V , V _{DS} = 0V			±100	nA	
ON CHARACTERISTICS^b							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	0.5	0.9	1.5	V	
Drain-Source On-State Resistance	R _{DSON}	V _{GS} = 4V , I _D = 6A		23	27	m	
		V _{GS} = 2.5V , I _D = 5.2A		30	38		
DRAIN-SOURCE DIODE CHARACTERISTICS^b							
Diode Forward Voltage	V _{SD}	V _{GS} = 0V , I _S = 1.7A			1.2	V	
DYNAMIC CHARACTERISTICS^c							
Input Capacitance	C _{ISS}	V _{DS} = 8V , V _{GS} = 0V f = 1.0MHz		522		pF	
Output Capacitance	C _{OSS}				124		pF
Reverse Transfer Capacitance	C _{RSS}				148		pF
SWITCHING CHARACTERISTICS^c							
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 10V , I _D = 1A		10		ns	
Rise Time	t _r		V _{GEN} = 4.5V		8.2		ns
Turn-Off Delay Time	t _{D(OFF)}	R _L = 10 R _{GEN} = 6		2.5		ns	
Fall Time	t _f				6		ns
Total Gate Charge	Q _g	V _{DS} = 10V , I _D = 3A V _{GS} = 4.5V		6.1		nC	
Gate-Source Charge	Q _{gs}				1.7		nC
Gate-Drain Charge	Q _{gd}				1.4		nC

Note :

b. Pulse Test : Pulse width 300us , Duty Cycle 2% .

c. Guaranteed by design , not subject to production testing .

DEVICE CHARACTERISTICS

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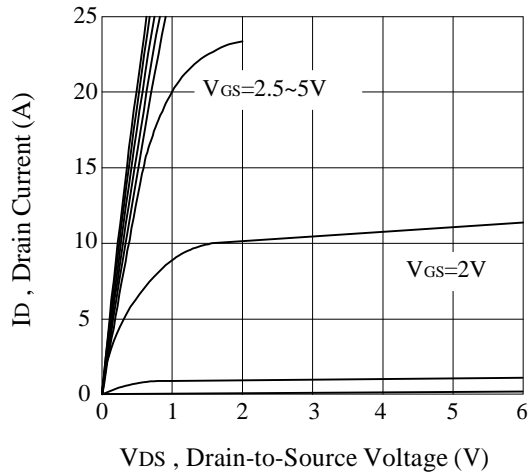


Figure 1. Output Characteristics

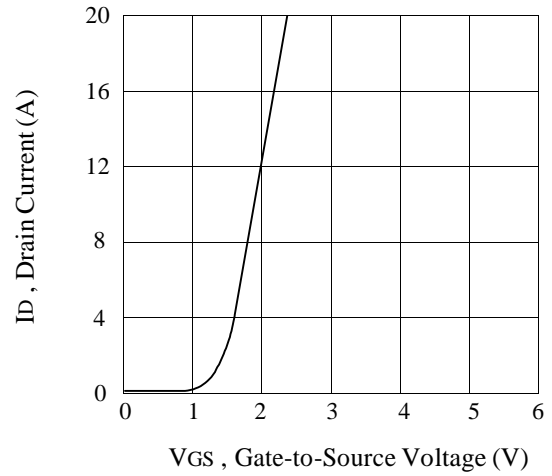


Figure 2. Transfer Characteristics

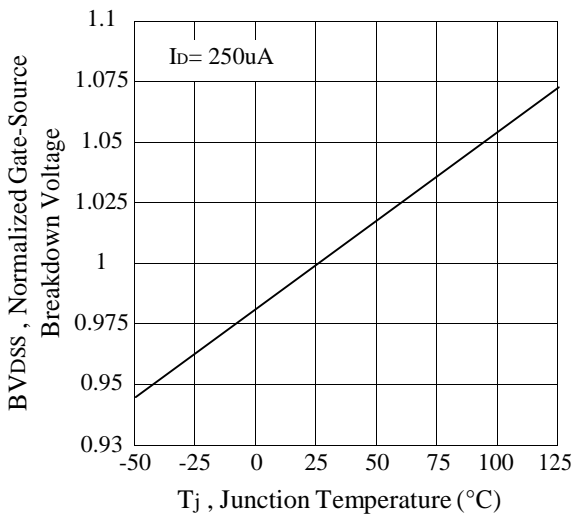


Figure 3. Breakdown Voltage Variation with Temperature

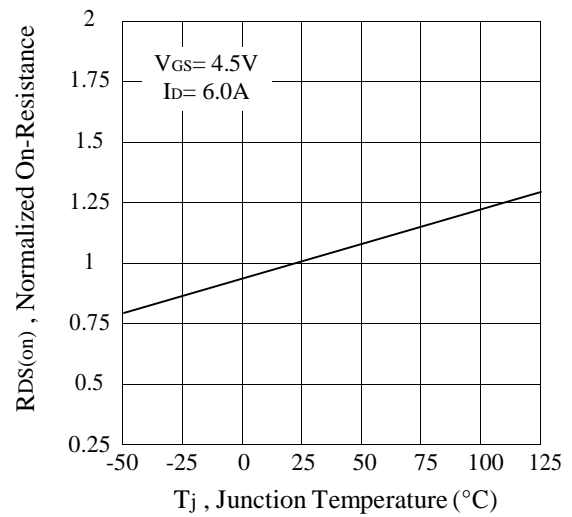


Figure 4. On-Resistance Variation with Temperature

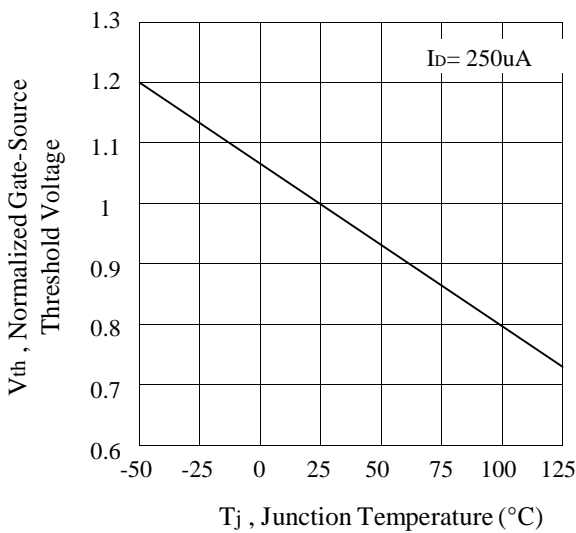


Figure 5. Gate Threshold Variation with Temperature

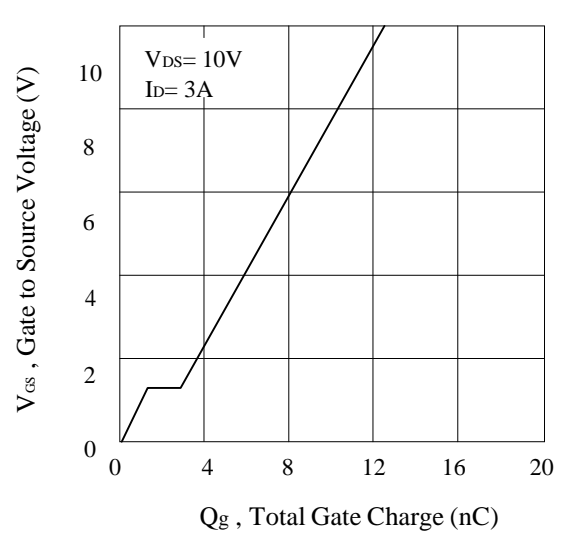
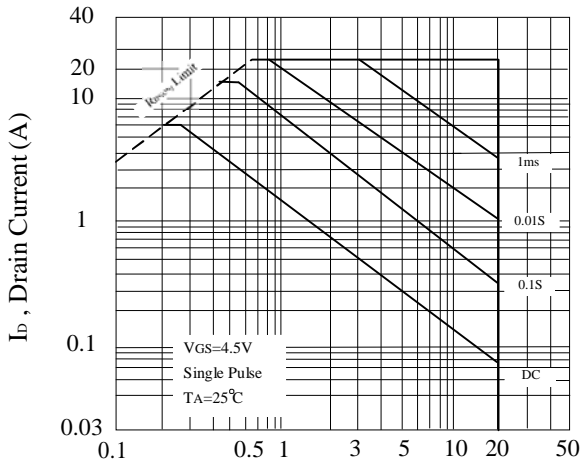


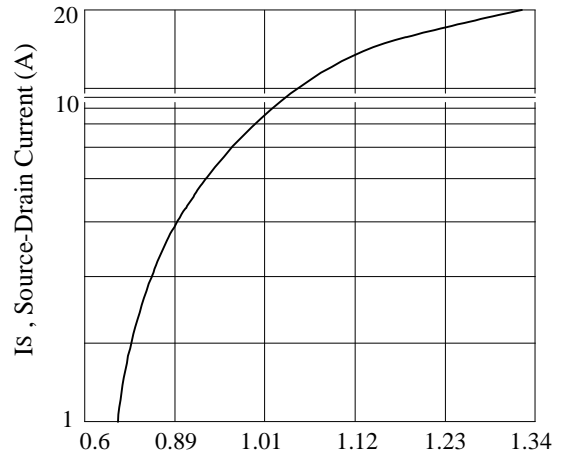
Figure 6. Gate Charge

DEVICE CHARACTERISTICS

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VDS, Drain-Source Voltage (V)
Figure 7. Maximum Safe Operating Area



VSD, Body Diode Forward Voltage (V) Figure 8.
Body Diode Forward Voltage Variation with Source Current

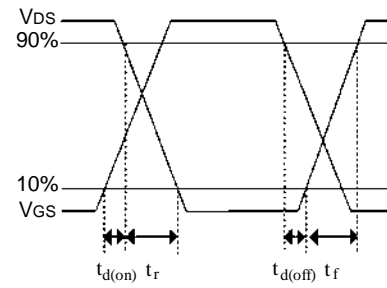
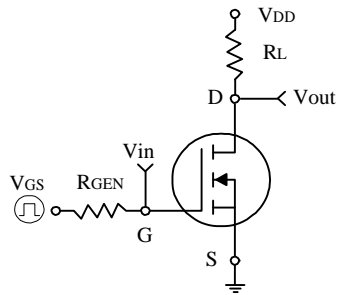


Figure 9. Switching Test Circuit and Switching Waveforms

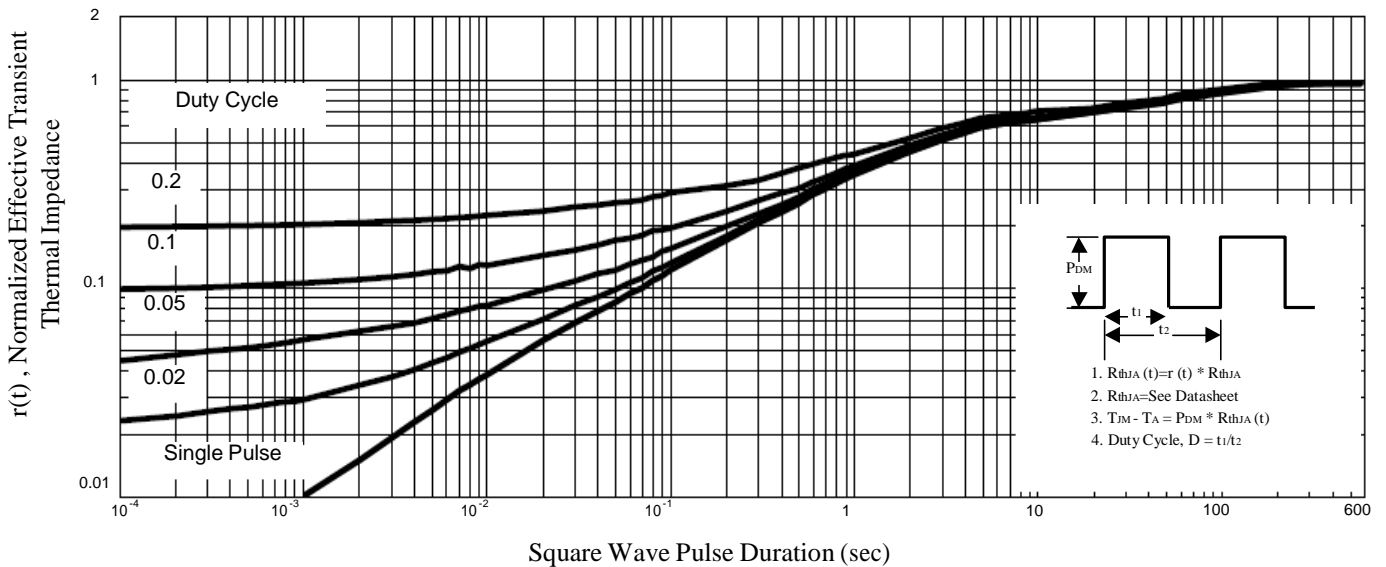
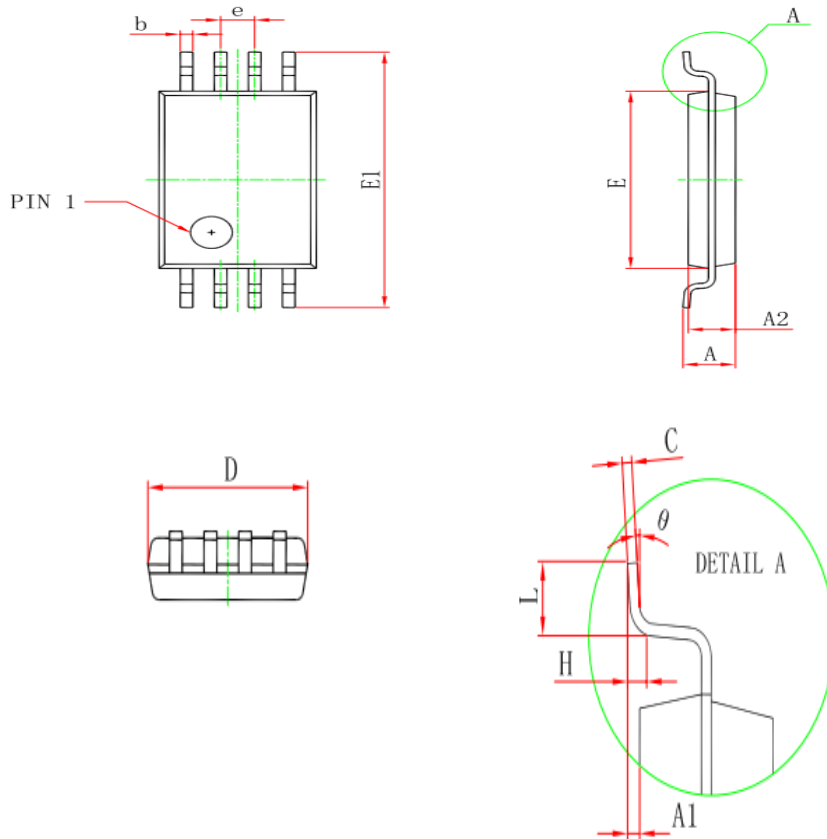


Figure 10. Normalized Thermal Transient Impedance Curve

PACKAGE OUTLINE & DIMENSIONS

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TSSOP-8 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
D	2.900	3.100	0.114	0.122
E	4.300	4.500	0.169	0.177
b	0.190	0.300	0.007	0.012
c	0.090	0.200	0.004	0.008
E1	6.250	6.550	0.246	0.258
A		1.200		0.047
A2	0.800	1.000	0.031	0.039
A1	0.050	0.150	0.002	0.006
e	0.65 (BSC)		0.026 (BSC)	
L	0.500	0.700	0.020	0.028
H	0.25(TYP)		0.01(TYP)	
θ	1°	7°	1°	7°