TM07H02TS

N+N-Channel Enhancement Mode MOSFET

General Description

- Low $R_{DS(ON)}$
- RoHS and Halogen-Free Compliant

Applications

- Load switch
- PWM

General Features

V_{DS} = 20V I_D = 7.0 A

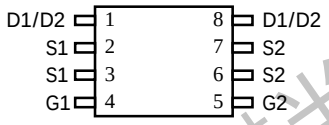
$R_{DS(ON)}$ =19mΩ (typ) @V_{GS}=4.5V

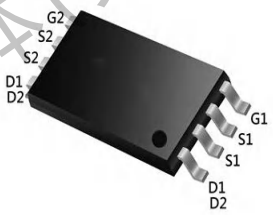
100% UIS Tested

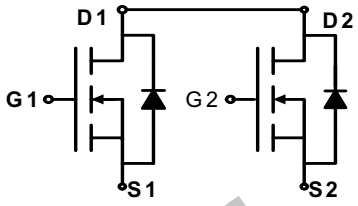
100% R_g Tested

Green Product

TS:TSSOP-8L







Marking:8205A

Absolute Maximum Ratings (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D@T_C=25℃	Continuous Drain Current, V_{GS}@ 4.5V	7.0	A
I_D@T_C=100℃	Continuous Drain Current, V_{GS}@ 4.5V	---	A
I_{DM}	Pulsed Drain Current	25	A
P_D@T_A=25℃	Total Power Dissipation	1.25	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	---	100	℃/W

ElectricalCharacteristics (T_J=25°Cunlessotherwisespecified)

Gate-Body Leakage Current	I_{GSS}	V_{GS}=±10V,V_{DS}=0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.5	0.7	0.9	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=4A	-	19	27	mΩ
		V_{GS}=2.5V, I_D=3A	-	24	35	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=4A	-	10	-	S
Dynamic Characteristics						
Input Capacitance	C_{lss}	V_{DS}=8V,V_{GS}=0V, F=1.0MHz	-	600	-	PF
Output Capacitance	C_{oss}		-	330	-	PF
Reverse Transfer Capacitance	C_{rss}		-	140	-	PF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V,I_D=1A V_{GS}=4V,R_{GEN}=10Ω	-	18	-	nS
Turn-on Rise Time	t_r		-	5	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	43	-	nS
Turn-Off Fall Time	t_f		-	20	-	nS
Total Gate Charge	Q_g	V_{DS}=10V,I_D=4A, V_{GS}=4.5V	-	11	-	nC
Gate-Source Charge	Q_{gs}		-	2.3	-	nC
Gate-Drain Charge	Q_{gd}		-	2.5	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=2A	-	0.8	1.2	V
Diode Forward Current	I_S		-	-	7.0	A

TM07H02TS

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Dual N-ch 20V Fast Switching MOSFETs

Typical Electrical and Thermal Characteristics

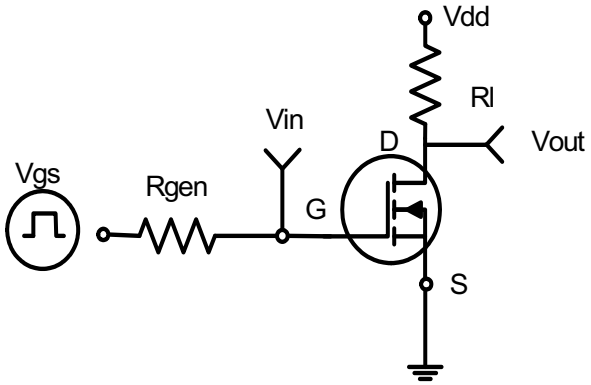


Figure 1:Switching Test Circuit

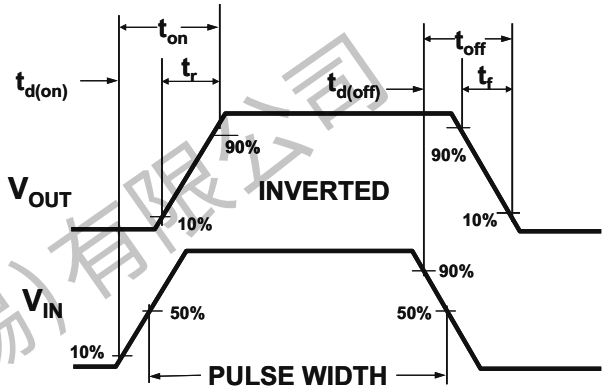


Figure 2:Switching Waveforms

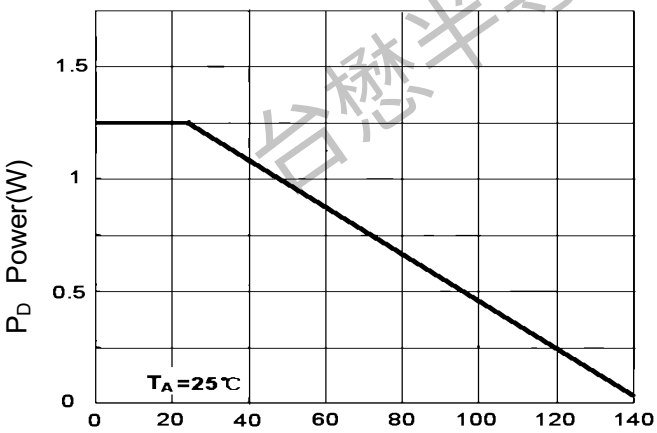


Figure 3 Power Dissipation

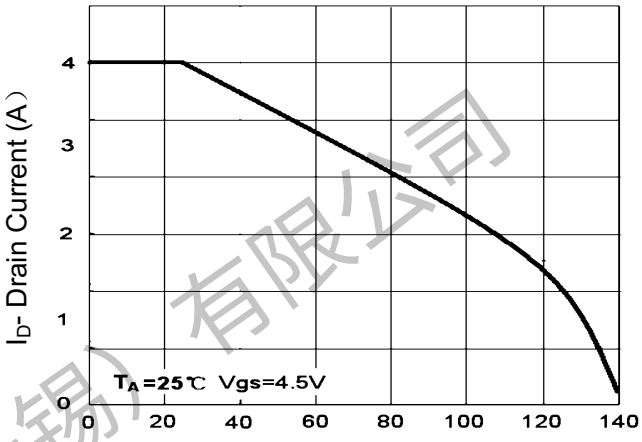


Figure 4 Drain Current

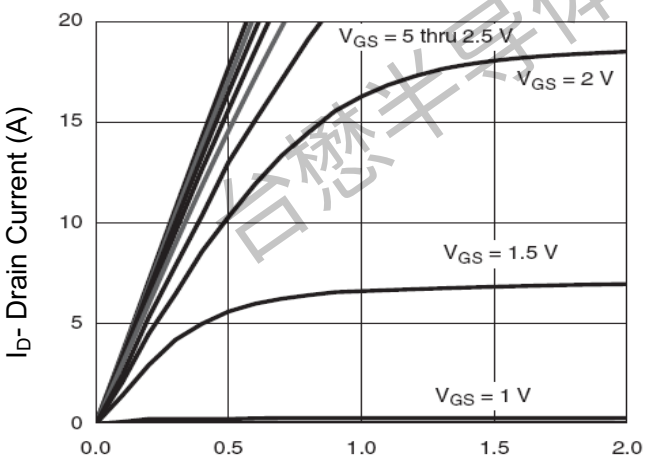


Figure 5 Output Characteristics

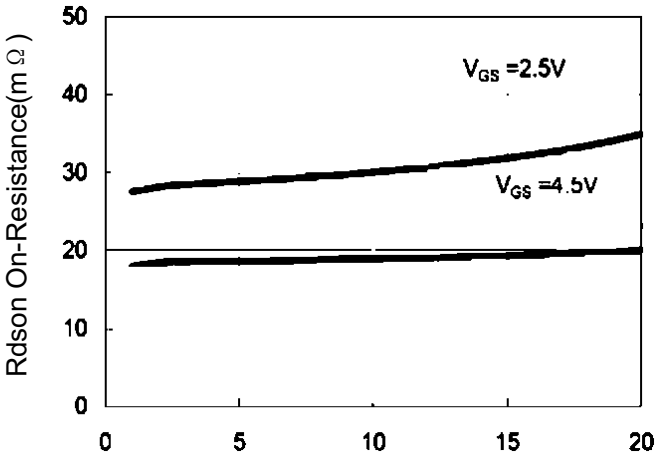


Figure 6 Drain-Source On-Resistance

TM07H02TS N+N-Channel Enhancement Mode MOSFET

Dual N-ch 20V Fast Switching MOSFETs

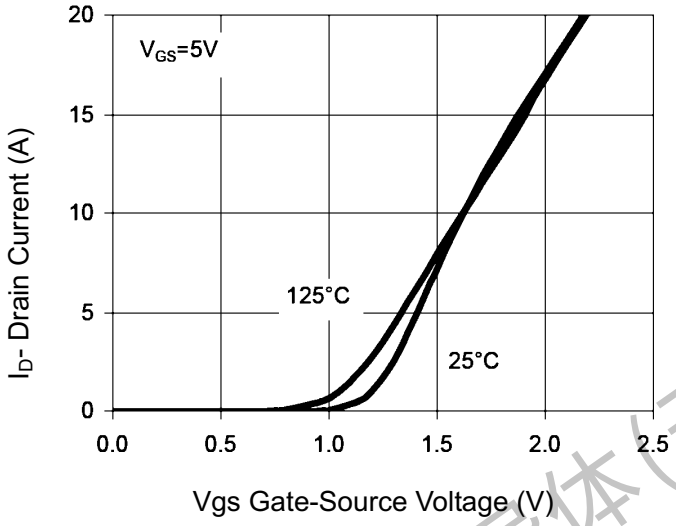


Figure 7 Transfer Characteristics

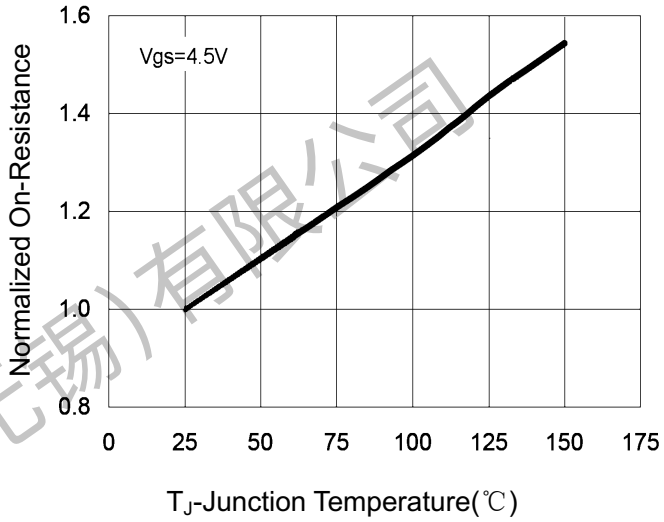


Figure 8 Drain-Source On-Resistance

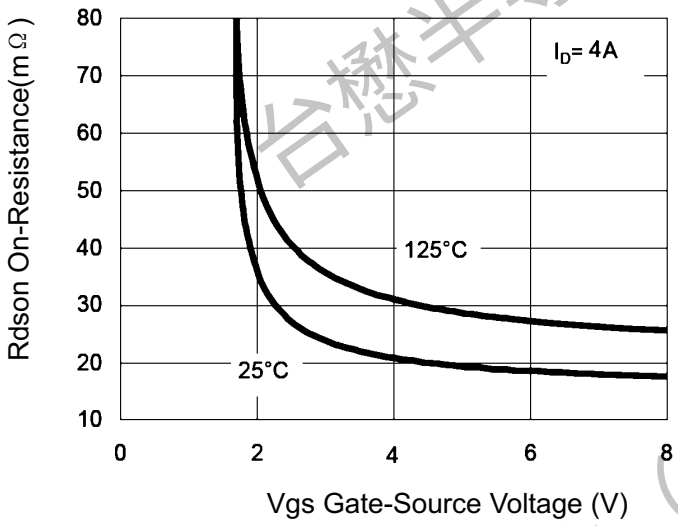


Figure 9 Rdson vs Vgs

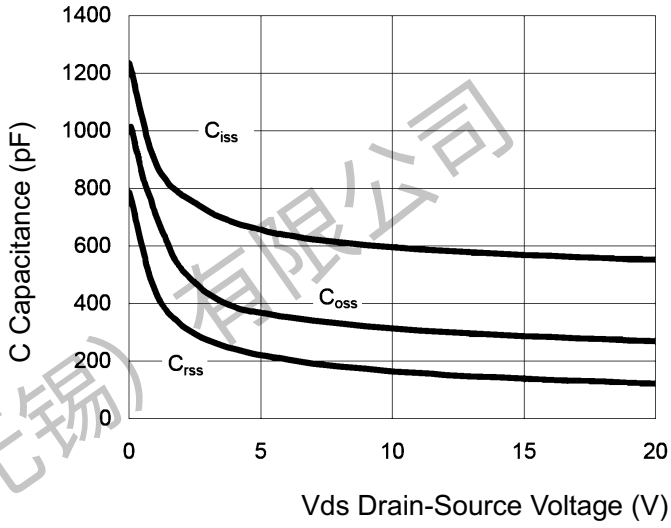


Figure 10 Capacitance vs Vds

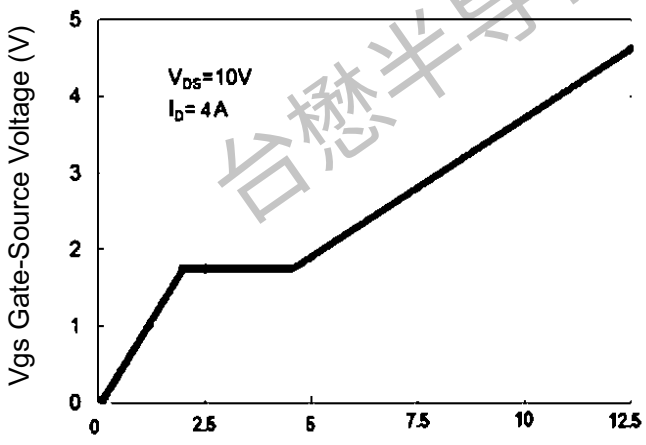


Figure 11 Gate Charge

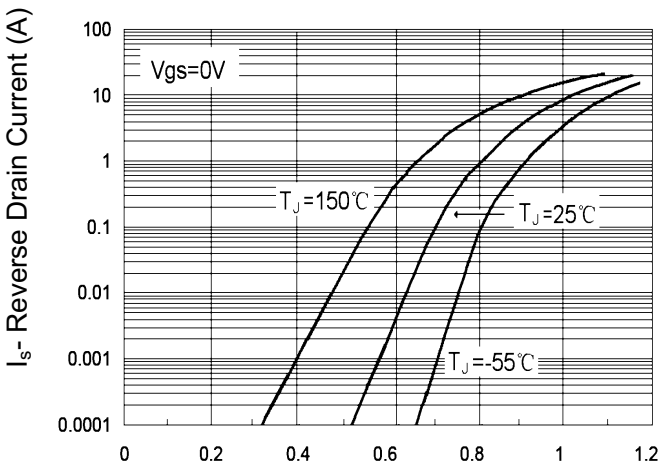


Figure 12 Source- Drain Diode Forward

Dual N-ch 20V Fast Switching MOSFETs

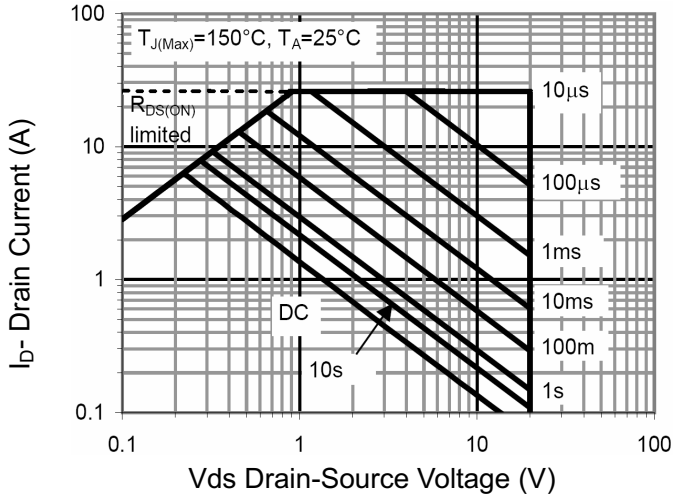


Figure 13 Safe Operation Area

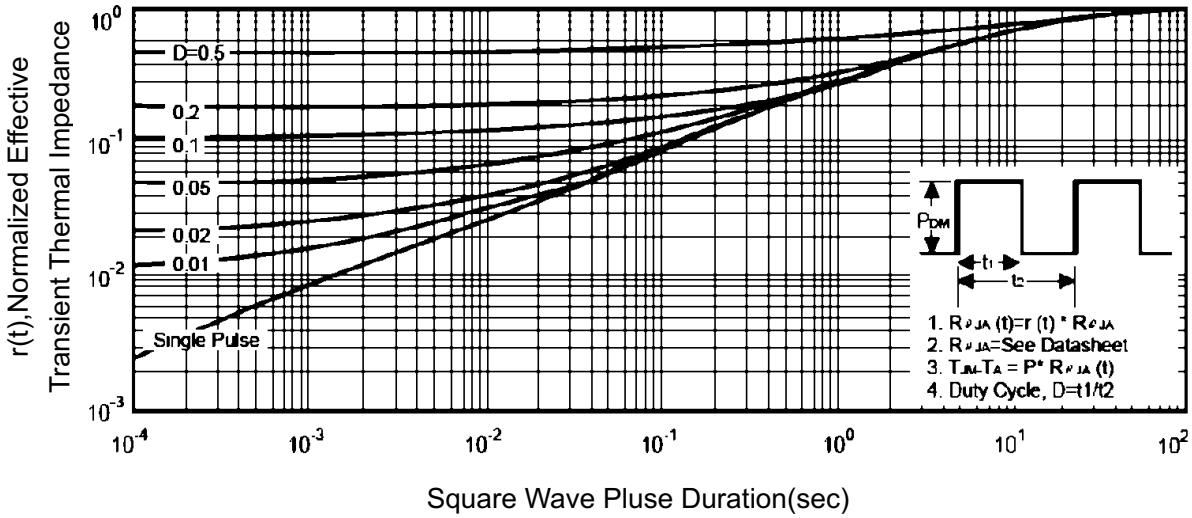
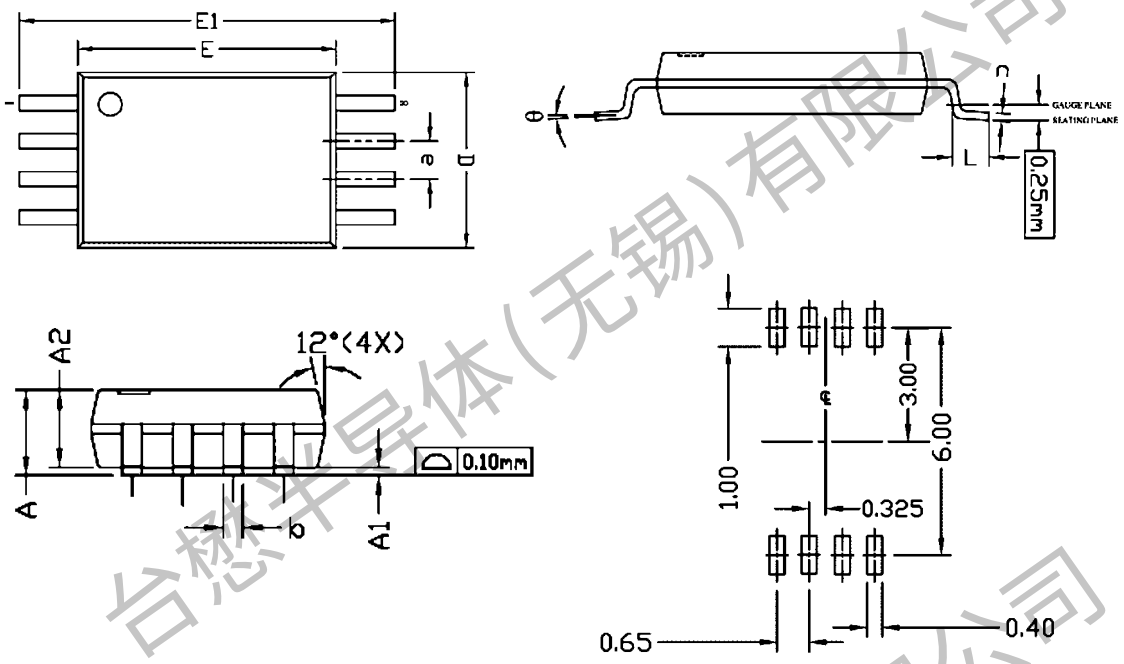


Figure 14 Normalized Maximum Transient Thermal Impedance

Package Mechanical Data: TSSOP-8L



Symbol	Common		
	mm		
	Mim	Nom	Max
A	/	/	1.20
A1	0.05	/	0.15
A2	0.80	1.00	1.05
b	0.19	/	0.30
c	0.09	/	3.45
D	2.90	3.00	3.1
E1	6.40BSC		
E	4.30	4.40	4.50
E	0.65BSC		
L	0.45	0.60	0.75
Φ	0°	0.48	8°

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Revision history:

Date	Rev	Description	Page
2023.04.21	23.04	Original	