MY8D02B

-20V P+P-Channel Enhancement ModeMOSFET

MAOYUANWEI semiconductor

General Description

The MY8D02B is the high cell density trenched P-CH MOSFET,which provide excellent $R_{DS(ON)}$ and efficiency for most of the small power switching and load s witch applications.

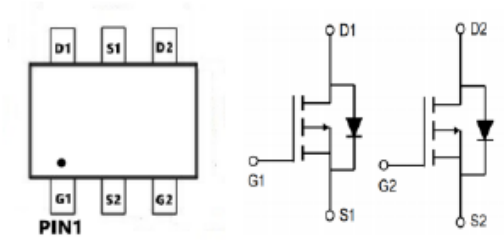
RoHS Compliant

Features

V_{DSS}	-20	V
I_D	-8	A
$R_{DS(ON)}$(atV_{GS} =4.5V)	23	mΩ
$R_{DS(ON)}$(atV_{GS} =2.5V)	28	mΩ

Application

- Green Device Available
- Super Low Gate Charge
- Excellent CdV/dt effect decline



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY8D02B	SOT-23-6	MY8D02B	3000

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

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±10	V
I_D@T_A=25℃	Continuous Drain Current, V_{GS} @ -4.5V[1]	-8	A
I_D@T_A=70℃	Continuous Drain Current, V_{GS} @ -4.5V[1]	-6.5	A
I_{DM}	Pulsed Drain Current[2]	-20	A
P_D@T_A=25℃	Total Po wer Dissipation[3]	2.6	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-20	-23	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V,V_{GS}=0V	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-0.4	-0.7	-1.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I=-4.2A	-	23	30	m
		V_{GS}=-2.5V, I_D=-2.9A	-	28	35	m
Forward Transconductance	g_{FS}	V_{DS}=-15V,I_D=-4.5A	4	7	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{lss}	V_{DS}=-15V,V_{GS}=0V, F=1.0MHz	-	540	-	PF
Output Capacitance	C_{oss}		-	150	-	PF
Reverse Transfer Capacitance	C_{rss}		-	75	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-15V, ID=-1A, V_{GS}=-10V,R_{GEN}=6	-	8	-	nS
Turn-on Rise Time	t_r		-	14	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	18	-	nS
Turn-Off Fall Time	t_f		-	10	-	nS
Total Gate Charge	Q_g	V_{DS}=-4.5V,I=-4.2A,V_{GS}=-8V	-	12	-	nC
Gate-Source Charge	Q_{gs}		-	2.4	-	nC
Gate-Drain Charge	Q_{gd}		-	3.2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=-4.2A	-	-	-1.0	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Electrical and Thermal Characteristics

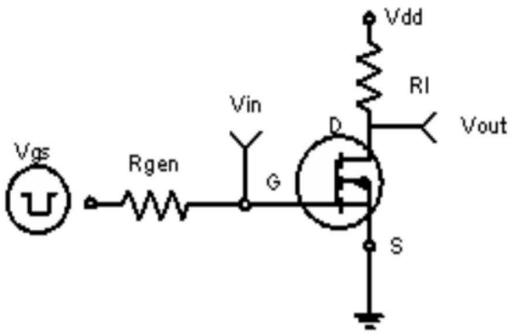


Figure 1:Switching Test Circuit

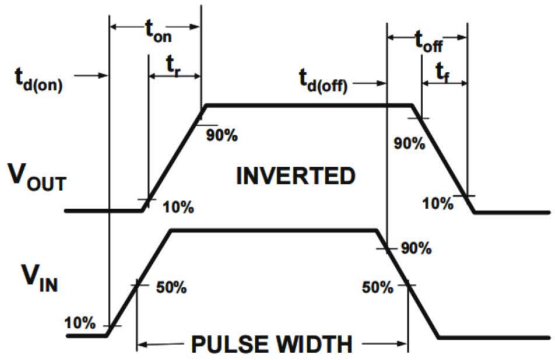


Figure 2:Switching Waveforms

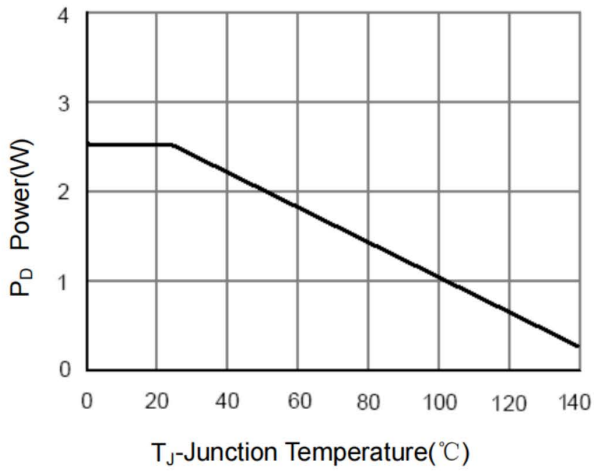


Figure 3 Power Dissipation

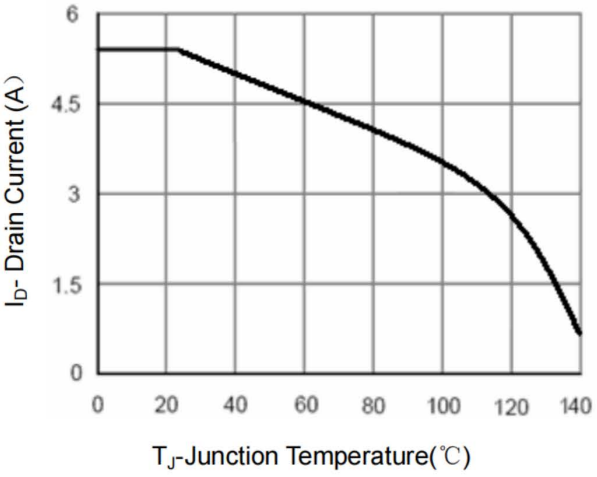


Figure 4 Drain Current

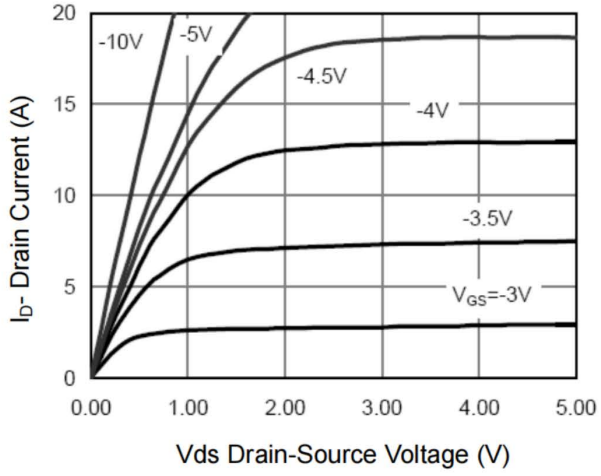


Figure 5 Output Characteristics

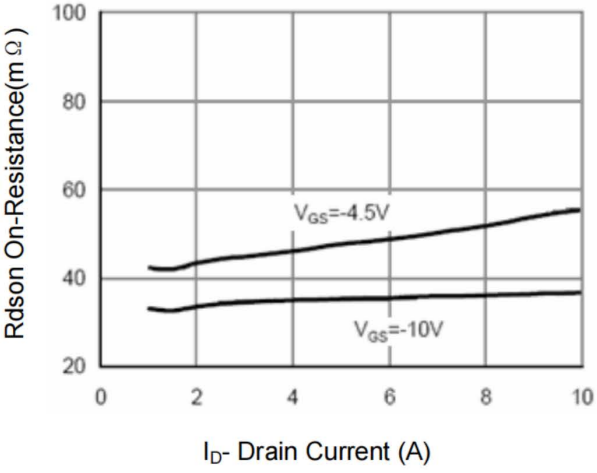


Figure 6 Drain-Source On-Resistance

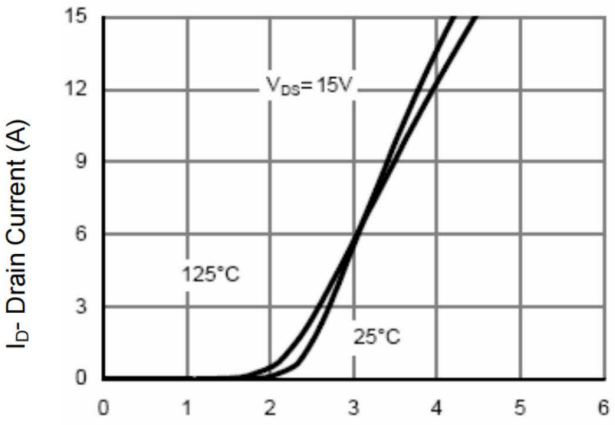


Figure 7 Transfer Characteristics

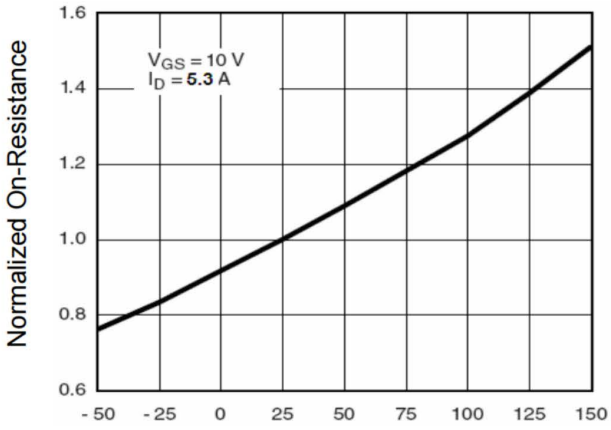


Figure 8 Drain-Source On-Resistance

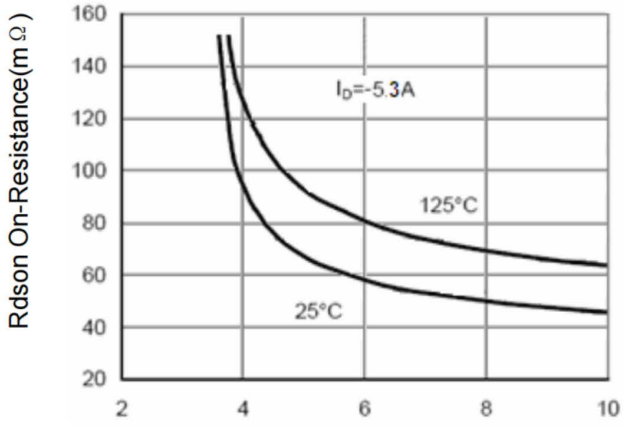


Figure 9 Rdson vs Vgs

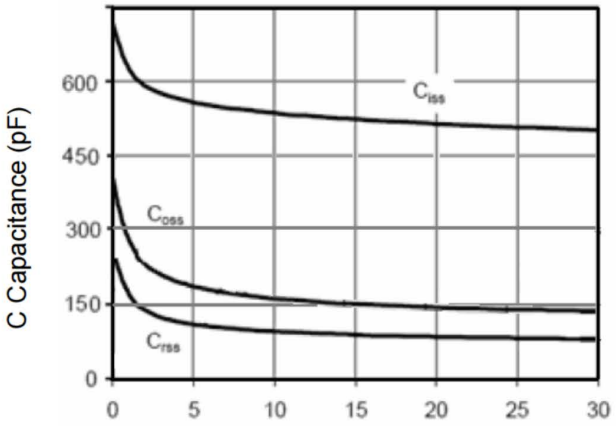


Figure 10 Capacitance vs Vds

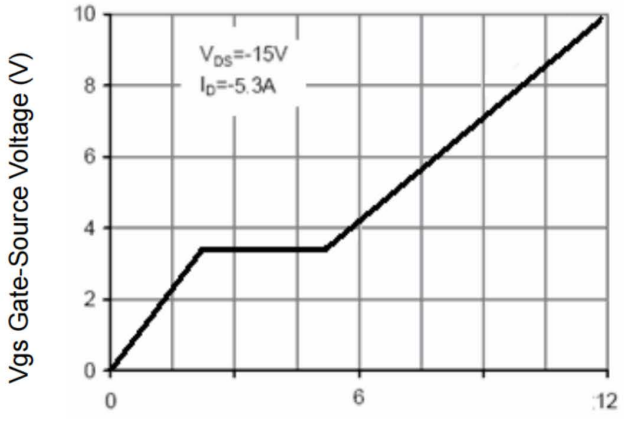


Figure 11 Gate Charge

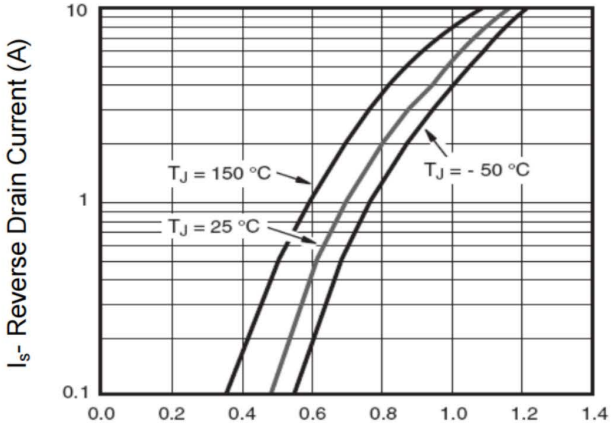


Figure 12 Source- Drain Diode Forward

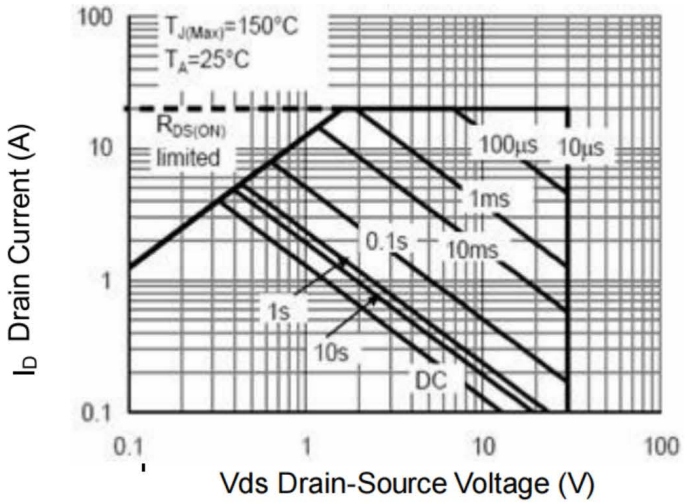


Figure 13 Safe Operation Area

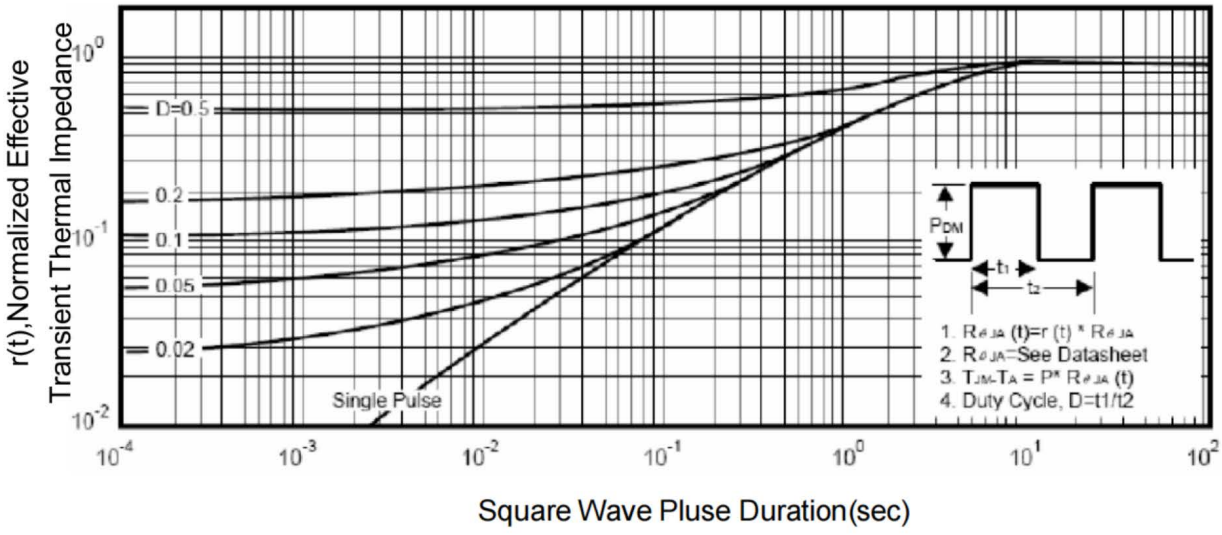


Figure 14 Normalized Maximum Transient Thermal Impedance

Package Mechanical Data-SOT-23-6