General Description

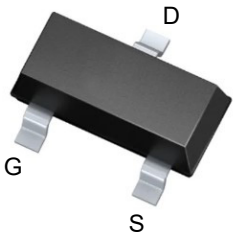
The MY3410 is the high cell density trenched N-CH MOSFET,which provides excellent $R_{DS(ON)}$ and efficiency for most of the small power switching and load switch applications.

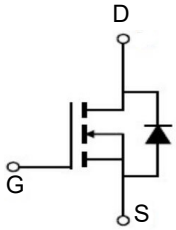
Features

V_{DSS}	30	V
I_D	7	A
$R_{DS(ON)}$(atV_{GS}=10V)	12	mΩ
$R_{DS(ON)}$(atV_{GS}=4.5V)	17	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)
MY3410	SOT-23	MY3410	3000

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

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℃	7	A
		T_A = 100℃	5.5	A
I_{DM}	Pulsed Drain Current note1		29.4	A
P_D	Power Dissipation	T_A = 25℃	2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		85	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =30V, V_{GS}=0V,	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS}=0V, V_{GS}= ±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.0	1.5	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note3	V_{GS}=10V, I_D=10A	-	12	17	mΩ
		V_{GS}=4.5V, I_D=5A	-	17	25	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	614	-	pF
C_{oss}	Output Capacitance		-	118	-	pF
C_{rss}	Reverse Transfer Capacitance		-	98	-	pF
Q_g	Total Gate Charge	V_{DS}=15V, I_D=11A, V_{GS}=10V	-	16	-	nC
Q_{gs}	Gate-Source Charge		-	2.7	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	4.5	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=15V, R_L=1.35Ω, R_{GEN}=3Ω, V_{GS}=10V	-	6	-	ns
t_r	Turn-on Rise Time		-	10	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	30	-	ns
t_f	Turn-off Fall Time		-	6.5	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	7	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	30	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S=15A	-	-	1.2	V
t_{rr}	Body Diode Reverse Recovery Time	T_J=25℃, I_F=11A,dI/dt=100A/μs	-	7	-	ns
Q_{rr}	Body Diode Reverse Recovery Charge		-	10	-	nC

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Electrical and Thermal Characteristics

Figure1: Output Characteristics

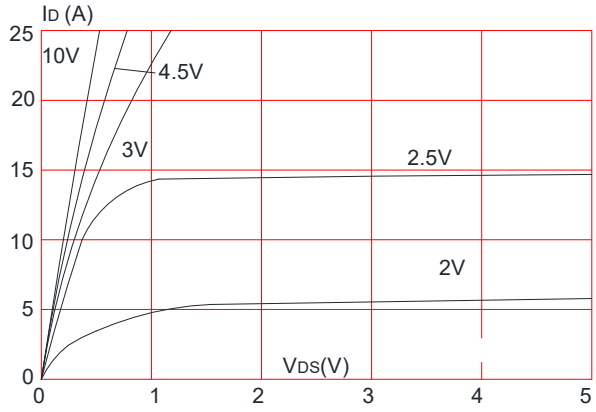


Figure 2: Typical Transfer Characteristics

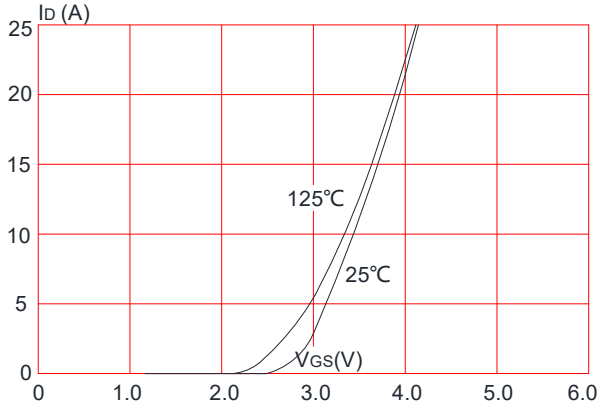


Figure 3: On-resistance vs. Drain Current

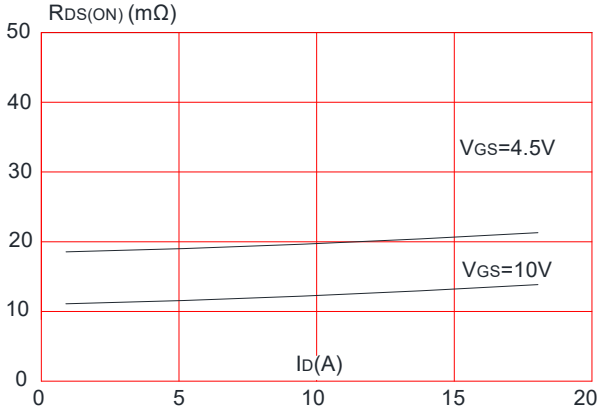


Figure 4: Body Diode Characteristics

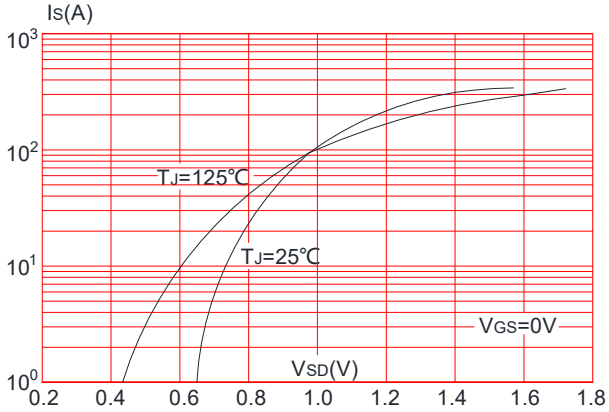


Figure 5: Gate Charge Characteristics

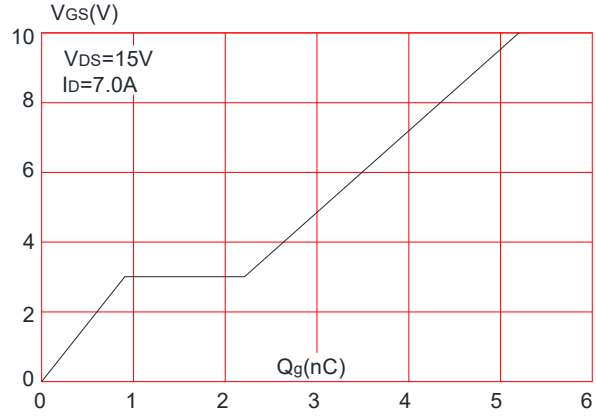


Figure 6: Capacitance Characteristics

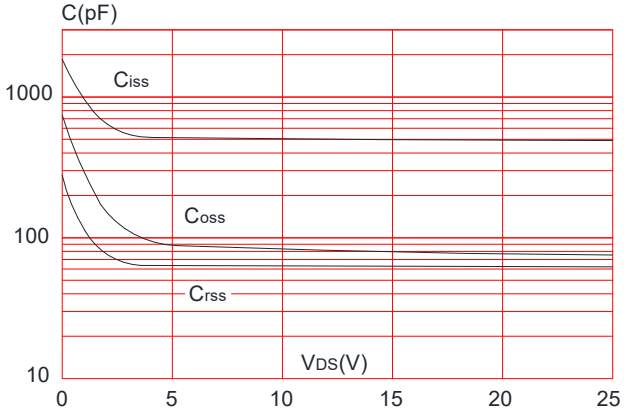


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

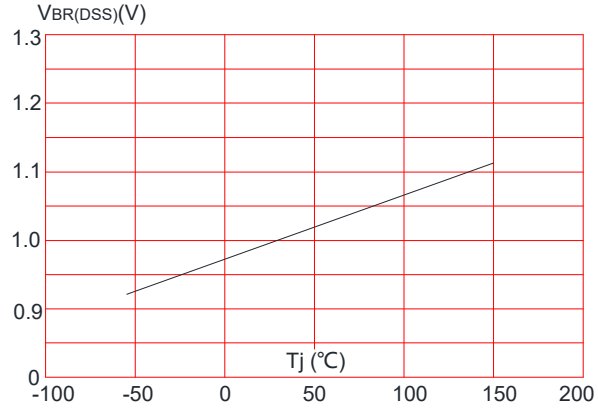


Figure 8: Normalized on Resistance vs. Junction Temperature

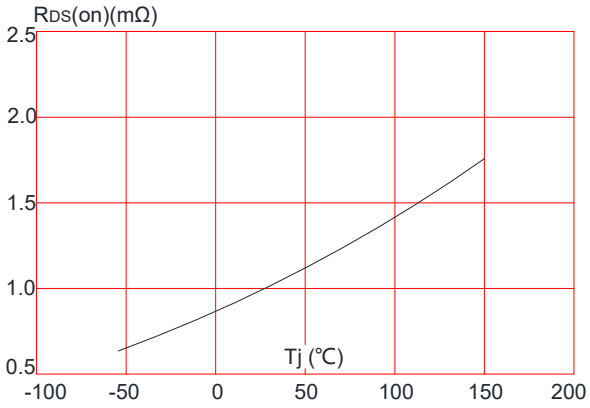


Figure 9: Maximum Safe Operating Area

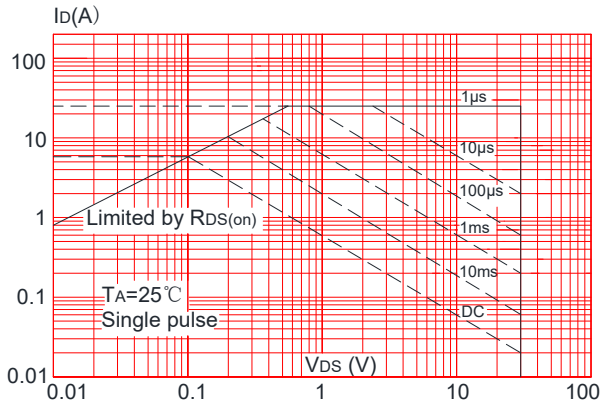


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

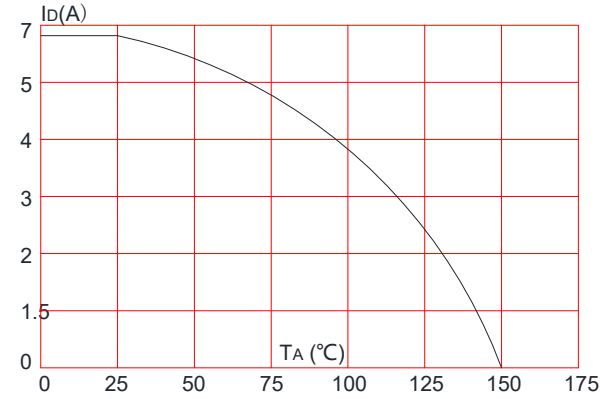
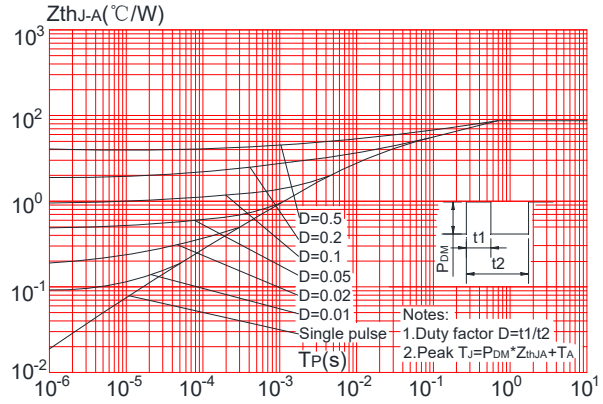
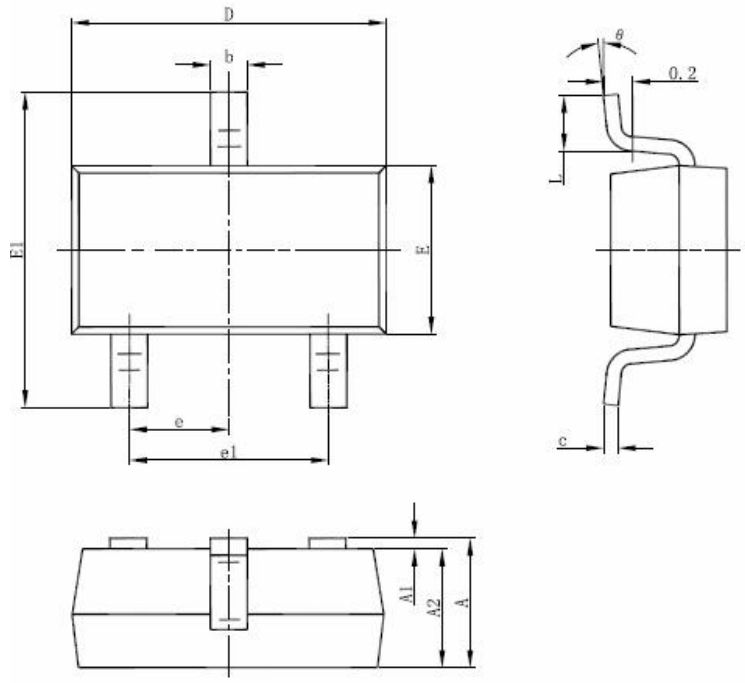


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Package Mechanical Data-SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°