MY3442

100V N-Channel Enhancement Mode MOSFET

MAOYUANWEI semiconductor

General Description

The MY3442 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.

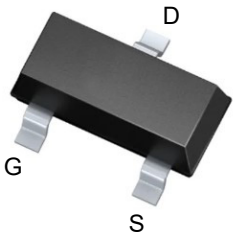
RoHS Compliant

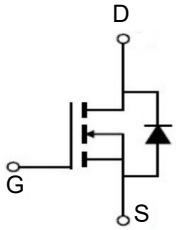
Features

V_{DSS}	100	V
I_D	2	A
$R_{DS(ON)}$(atV_{GS}=10V)	＜234	mΩ
$R_{DS(ON)}$(atV_{GS}=4.5V)	＜278	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)
MY3442	SOT-23	MY3442	3000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}*	8	A
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8” from case for 10 s)	T_L	260	℃

*Repetitive rating：Pluse width limited by junction temperature.

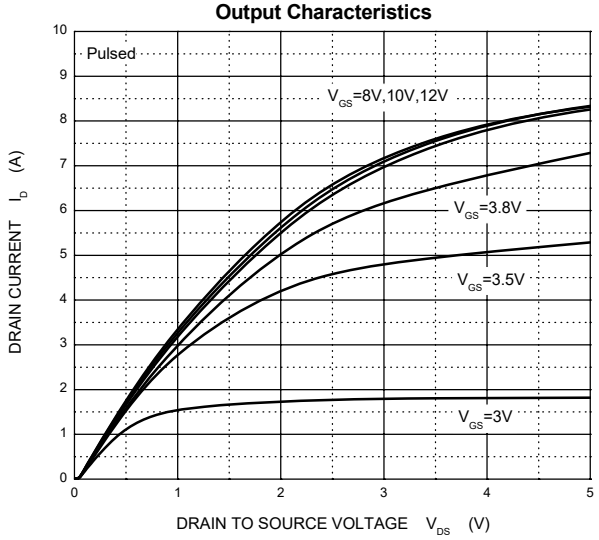
Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =100V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage(note 1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.2		2.8	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =10V, I_D =1.5A			234	mΩ
		V_{GS} =6V, I_D =1A			267	mΩ
		V_{GS} =4.5V, I_D =0.5A			278	mΩ
Forward tranconductance (note 1)	g_{FS}	V_{DS} =20V, I_D =1.5A		2		S
Diode forward voltage (note 1)	V_{SD}	I_S=1.3A, V_{GS} = 0V			1.2	V
DYNAMIC PARAMETERS (note2)						
Input Capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V,f =1MHz		190		pF
Output Capacitance	C_{oss}			22		pF
Reverse Transfer Capacitance	C_{rss}			13		pF
Gate Resistance	R_g	F=1MHz	0.3		2.8	Ω
SWITCHING PARAMETERS (note 2)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=50V,V_{GEN}=4.5V R_L=39Ω,R_G=1Ω,I_D=1.3A			45	ns
Turn-on rise time	t_r				39	ns
Turn-off delay time	$t_{d(off)}$				26	ns
Turn-off fall time	t_f				20	ns
Total Gate Charge	Q_g	V_{DS} =50V,V_{GS} =4.5V,I_D=1.6A			5.8	nC
Gate-Source Charge	Q_{gs}			0.75		nC
Gate-Drain Charge	Q_{gd}			1.4		nC

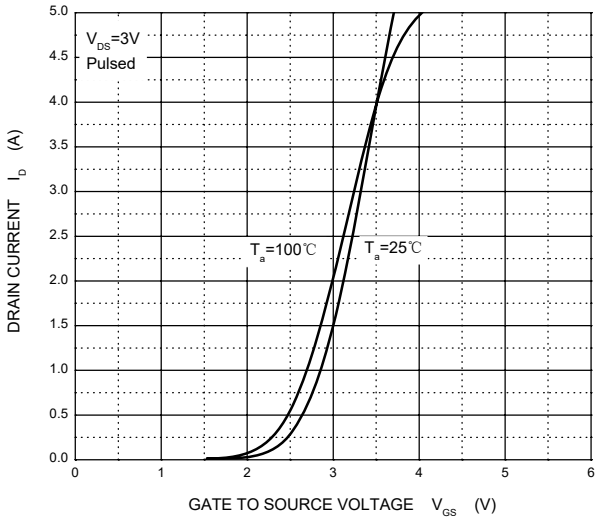
Notes : 1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.
2. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

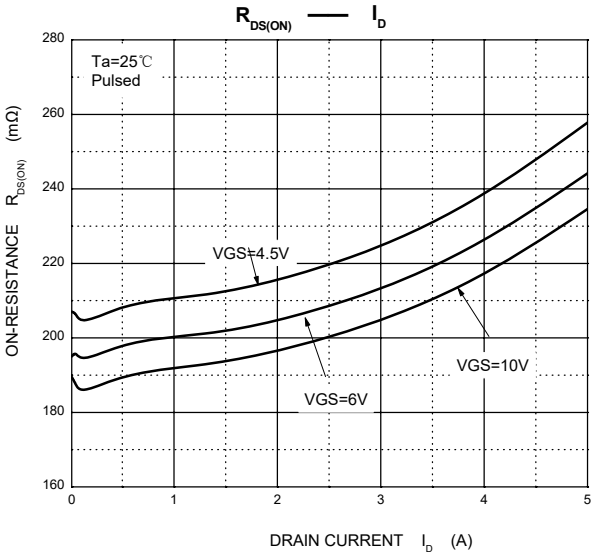
Output Characteristics



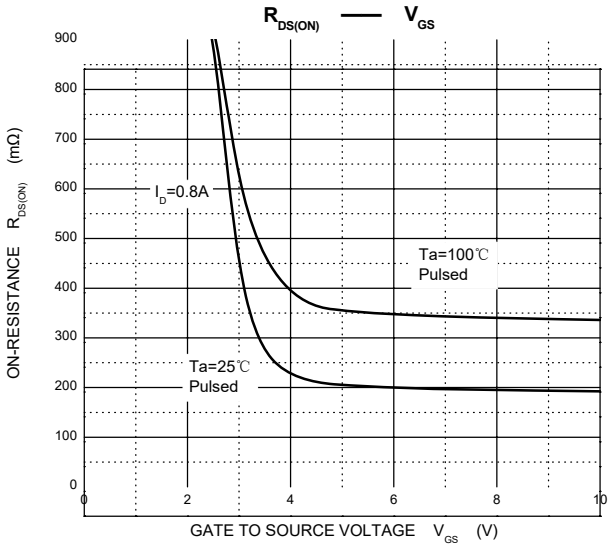
Transfer Characteristics



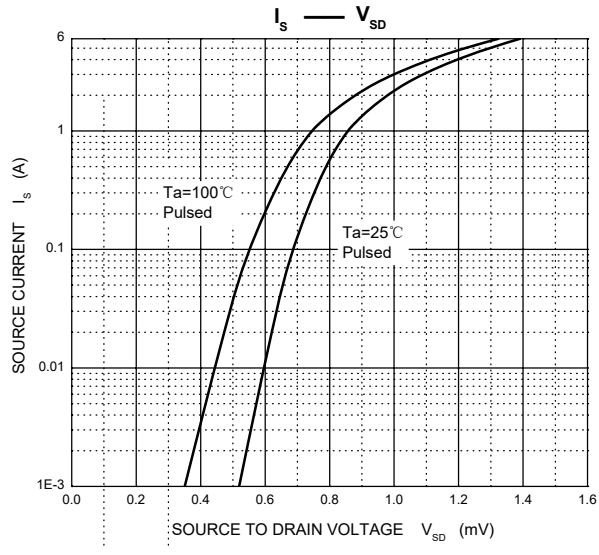
$R_{DS(ON)}$ — I_D



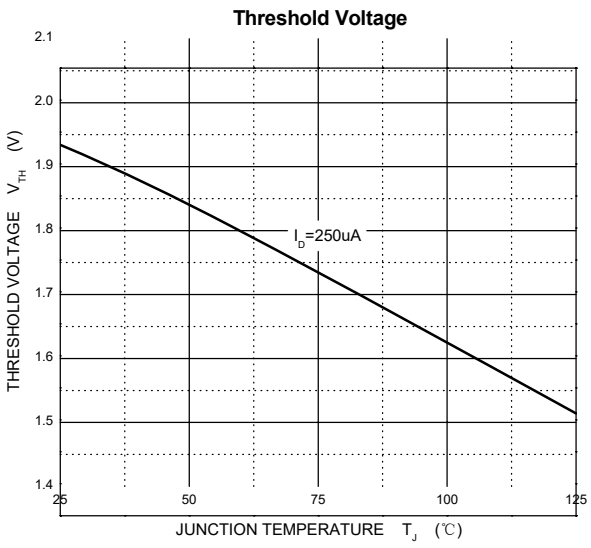
$R_{DS(ON)}$ — V_{GS}



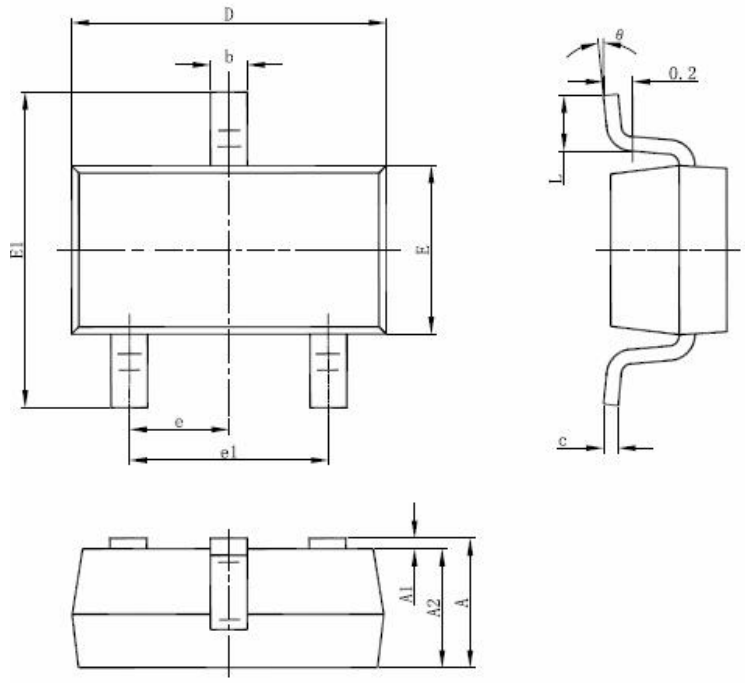
I_S — V_{SD}



Threshold Voltage



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°