

Features

- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- High density cell design for low $R_{DS(ON)}$
- Fast Switching Speed
- Green Device Available

Applications

- Small servo motor control
- Power MOSFET gate drivers
- Switching application

Product Summary



V_{DS}	100	V
I_D	0.17	A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	6	Ω
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	10	Ω



Absolute Maximum Ratings($T_A=25^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	I_D	0.17	A
Pulsed Drain Current ²	I_{DM}	0.68	A
Total Power Dissipation ³	P_D	150	mW
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$
Operating Junction Temperature Range	T_J	-55 to 150	$^{\circ}C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	---	620	$^{\circ}C/W$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100	---	---	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=0.17A$	---	3.5	6	Ω
		$V_{GS}=4.5V, I_D=0.17A$	---	4.5	10	Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	1	1.8	2.5	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V, T_J=25^{\circ}\text{C}$	---	---	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
Total Gate Charge	Q_g	$V_{DS}=50V, V_{GS}=10V, I_D=0.2A$	---	2.3	---	nC
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=50V, V_{GS}=10V, R_G=6\Omega, I_D=0.2A$	---	8.8	---	ns
Rise Time	T_r		---	9.2	---	
Turn-Off Delay Time	$T_{d(off)}$		---	18.5	---	
Fall Time	T_f		---	7.9	---	
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=1\text{MHz}$	---	34	---	pF
Output Capacitance	C_{oss}		---	11	---	
Reverse Transfer Capacitance	C_{rss}		---	7	---	

Drain-Source Diode Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current ¹	I_S		---	---	0.17	A
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=0.2A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The power dissipation is limited by 150 $^{\circ}\text{C}$ junction temperature

Typical Characteristics

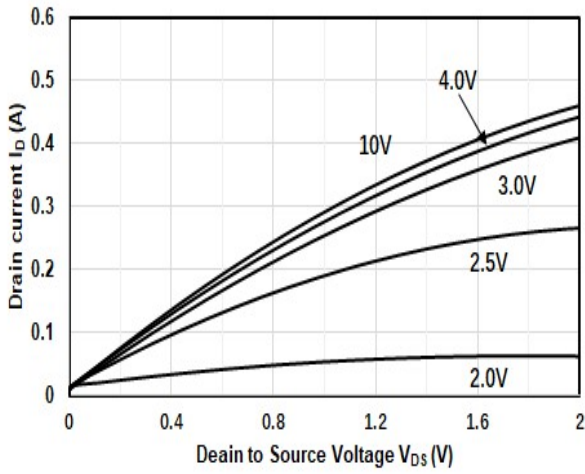


Figure1. Output Characteristics

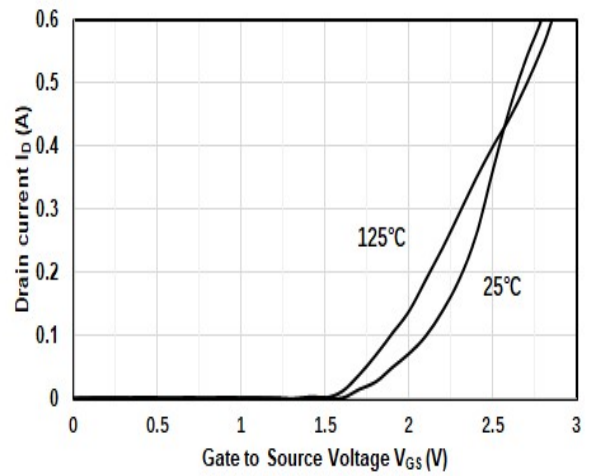


Figure2. Transfer Characteristics

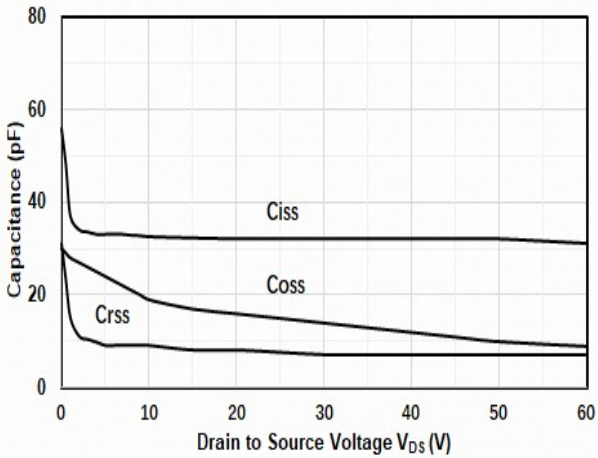


Figure3. Capacitance Characteristics

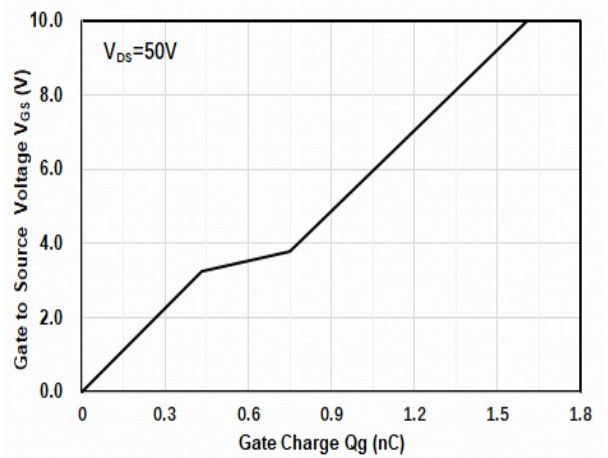


Figure4. Gate Charge

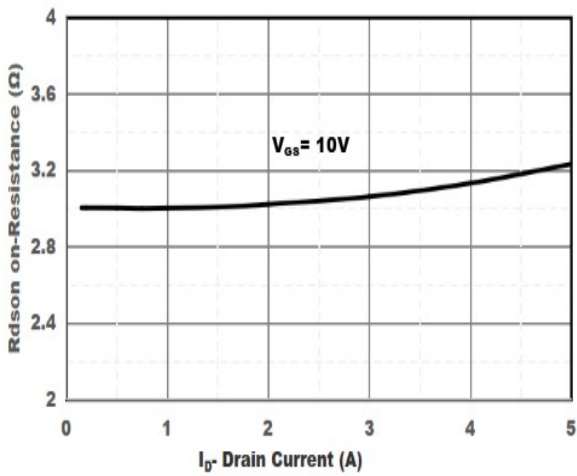


Figure5. Drain-Source on Resistance

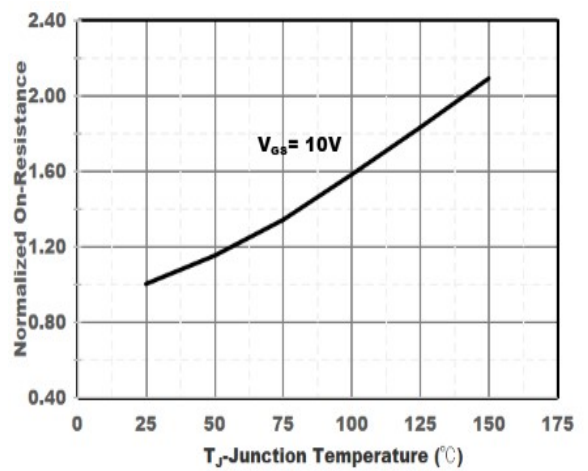


Figure6. Drain-Source on Resistance

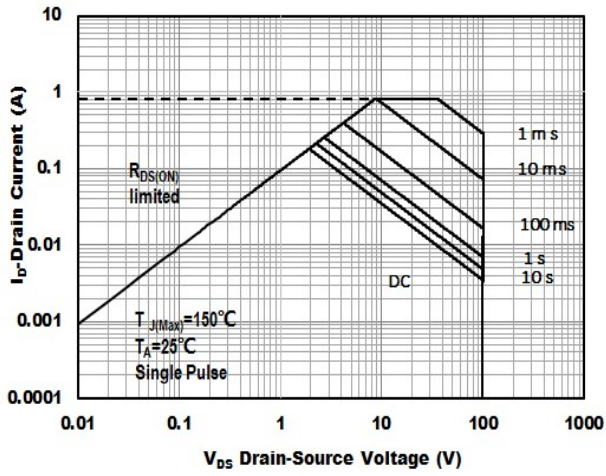


Figure7. Safe Operation Area

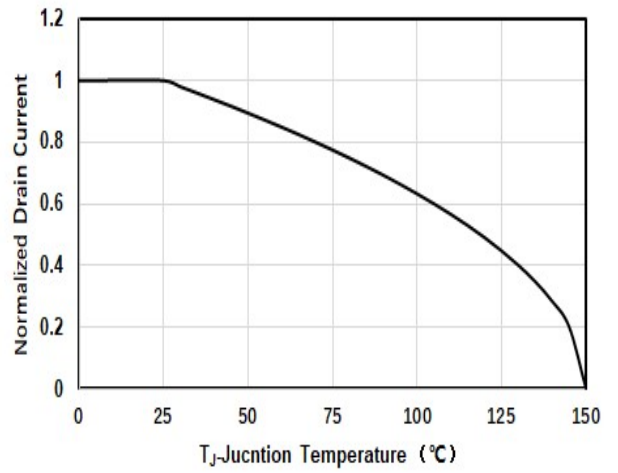
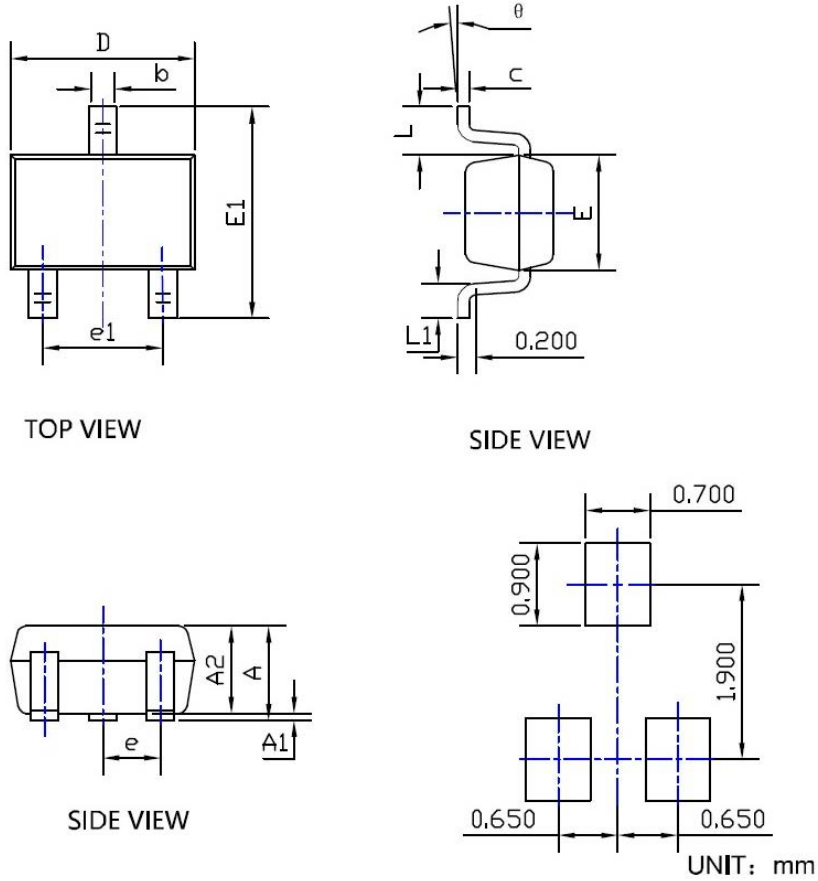


Figure8. Drain-Source Current

SOT-323 Package Outline Dimensions



Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	0.90	1.00	1.10	E ₁	2.15	2.30	2.45
A ₁	--	--	0.10	e	--	0.65	--
A ₂	0.90	0.95	1.00	e ₁	1.20	1.30	1.40
b	0.15	0.30	0.40	L	--	0.525	--
c	0.10	0.17	0.25	L ₁	0.26	0.36	0.46
D	1.80	2.00	2.20	θ	0°		8°
E	1.15	1.25	1.35				