

CSM210N2S23

20V N-Channel MOSFET

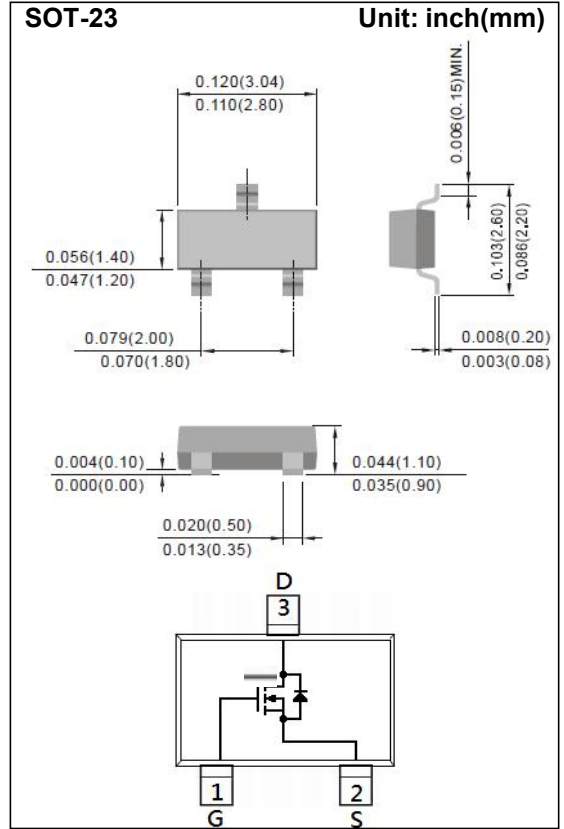
Voltage 20 V **Current** 2 A

Features

- Switching with Low RDS(ON)
- Lead free in compliance directive
- Green molding

Mechanical Data

- Case: SOT-23 Package



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±10	V
Continuous Drain Current	I _D	2	A
Pulsed Drain Current	I _{DM}	8	A
Power Dissipation	P _D	T _a =25°C	1.25
		Derate above 25°C	10
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Typical Thermal resistance	R _{θJA}	100	°C/W
- Junction to Ambient (Note 1)			

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static (Note 2)						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.35	0.72	1.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=0.65A$	-	0.15	0.28	Ω
		$V_{GS}=2.5V, I_D=0.55A$	-	0.21	0.35	
		$V_{GS}=1.8V, I_D=0.45A$	-	0.31	0.60	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	0.01	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	-	± 4	± 50	μA
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=0.65A$	-	1.9	-	S
Diode Forward Voltage	V_{SD}	$I_S=0.15A, V_{GS}=0V$	-	0.63	1.2	V
Dynamic (Note 3)						
Input Capacitance	C_{iss}	$V_{DS}=16V, V_{GS}=0V,$ $f=1.0MHz$	-	62	-	pF
Output Capacitance	C_{oss}		-	24	-	
Reverse Transfer Capacitance	C_{rss}		-	12	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10V, I_D=500mA,$ $V_{GS}=4.5V,$ $R_G=10\Omega$ (Note 1,2)	-	3	-	ns
Turn-On Rise Time	t_r		-	23	-	
Turn-Off Delay Time	$t_{d(off)}$		-	12	-	
Turn-Off Fall Time	t_f		-	19	-	

NOTES :

1. $R_{\theta JA}$ is surface mounted on a 1 inch FR-4 with 2oz. square pad of copper
2. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
3. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

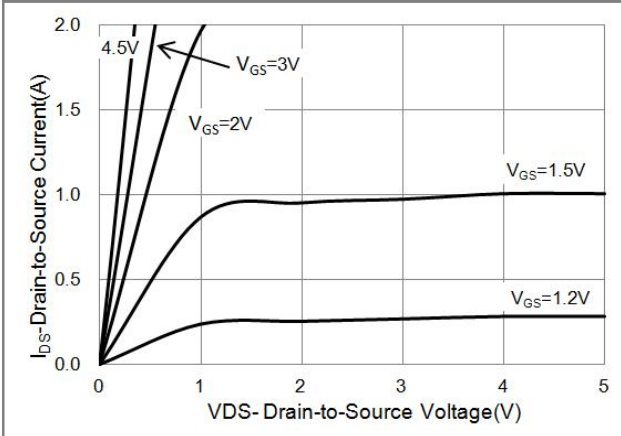


Fig.1 Output Characteristics

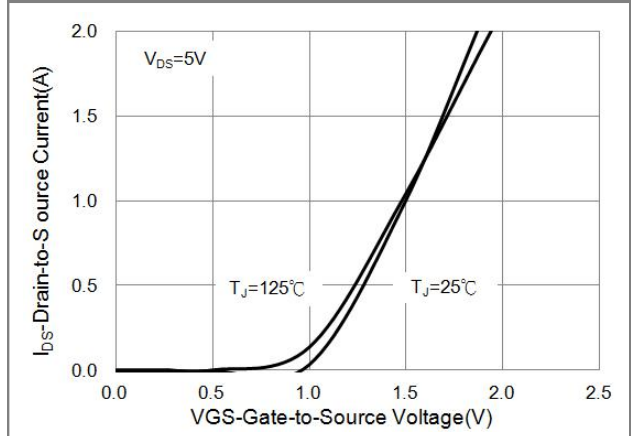


Fig.2 Transfer Characteristics

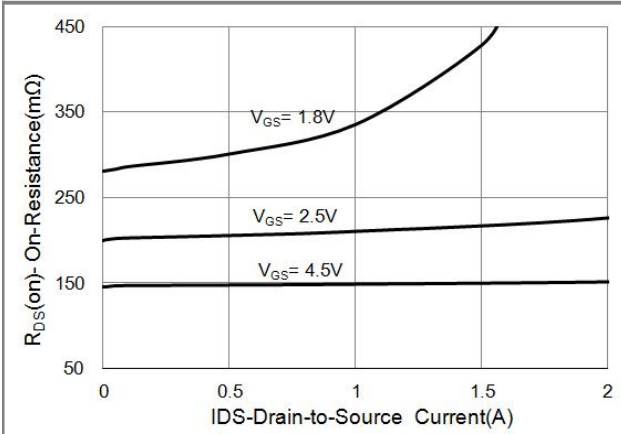


Fig.3 On-Resistance vs. Drain Current

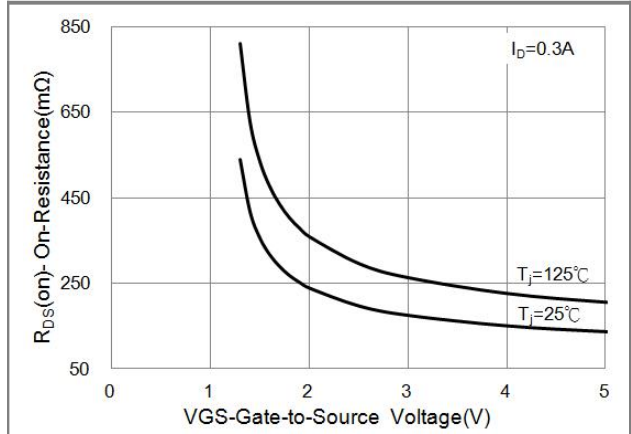


Fig.4 On-Resistance Variation with VGS.

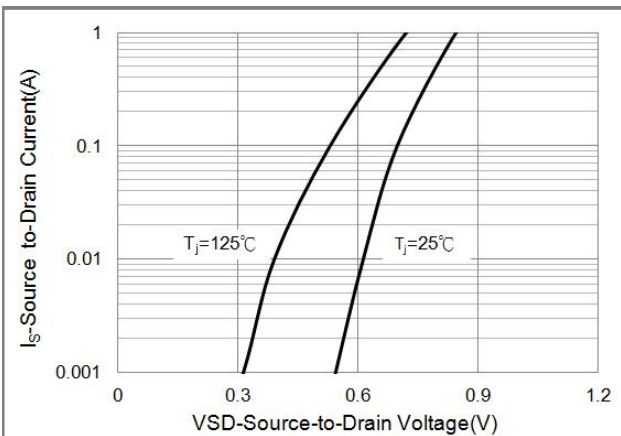


Fig.5 Body Diode Characteristics

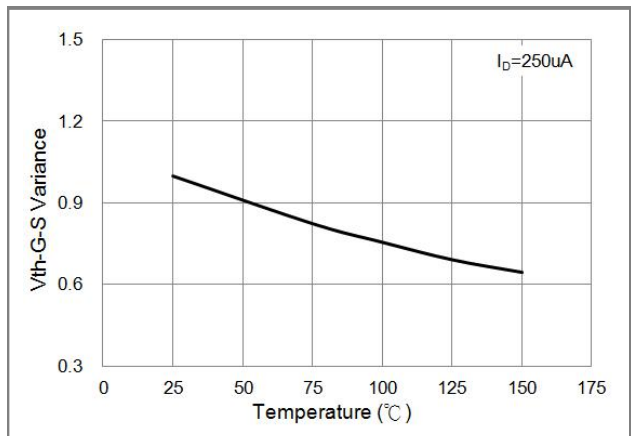


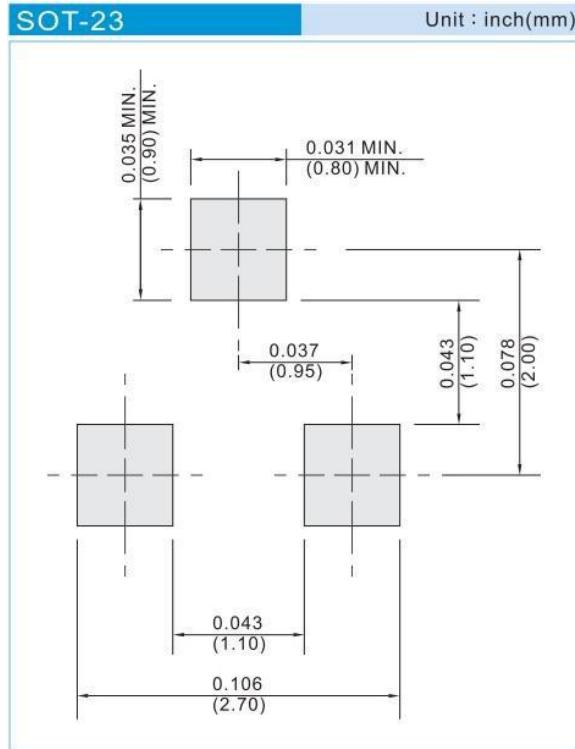
Fig.6 Threshold Voltage

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PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type
CSM210N2S23	SOT-23	3K pcs / 7" reel

MOUNTING PAD LAYOUT



CSM210N2S23

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