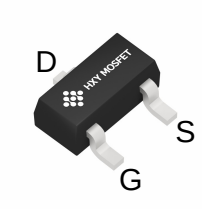
DMP510DL

P-Channel Enhancement Mode MOSFET

Description

The DMP510DL uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.



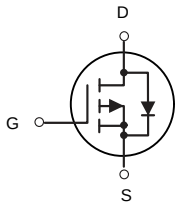
SOT-23

General Features

V_{DS} =-50V,I_D =-0.1A

$R_{DS(ON)}$ <5 Ω @ V_{GS}=-10V

$R_{DS(ON)}$ <6 Ω @ V_{GS}=-4.5V



P-Channel MOSFET

Application

Power switching application

Hard switched and high frequency circuits

DC-DC converter

Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
DMP510DL	SOT-23	HXY MOSFET	3000

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-0.1	A
Pulsed Drain Current	I_{DM}	-0.5	A
Maximum Power Dissipation	P_D	0.35	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃
Thermal Resistance ,Junction-to-Ambient(Note 2)	$R_{\theta JA}$	62.5	℃/W

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	V_{GS}=0, I_D=250μA	-50			V
$V_{GS(th)}$	Gate threshold voltage	V_{DS}=V_{GS}, I_D=-250μA	-0.8		-2.0	V
I_{GSS}	Gate-body leakage current	V_{DS}=0, V_{GS}=±10V			±10	μA
I_{DSS}	Zero gate voltage drain current	V_{DS}=-50V, V_{GS}=0V			-10	μA
		V_{DS}=-40V, V_{GS}=0V			-100	nA
$R_{DS(on)}$	Drain-source on-resistance[a]	V_{GS}=-10V, I_D=-0.13A		2	5	Ω
		V_{GS}=-4.5V, I_D=-0.13A		2.5	6	Ω
g_{FS}	Forward transconductance[a]	V_{DS}=-25V, I_D=-0.13A	50			mS
V_{SD}	Diode forward voltage	I_S=-0.13A,V_{GS}=0V			-1.0	V
Dynamic						
C_{iss}	Input capacitance	V_{DS}=-25V, V_{GS}=0V, f=1MHz		25		pF
C_{oss}	Output capacitance			15		
C_{rss}	Reverse transfer capacitance[b]			3.5		
Switching[b]						
$t_{d(on)}$	Turn-on delay time	V_{GS}=-10V,V_{DS}=-15V I_D=-200mA, R_{GEN}=25Ω		16.7		nS
t_r	Rise time			8.6		
$t_{d(off)}$	Turn-off delay time			17.9		
t_f	Fall time			5.3		

Notes :
a. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
b. Guaranteed by design, not subject to producting.

TypicalCharacteristics

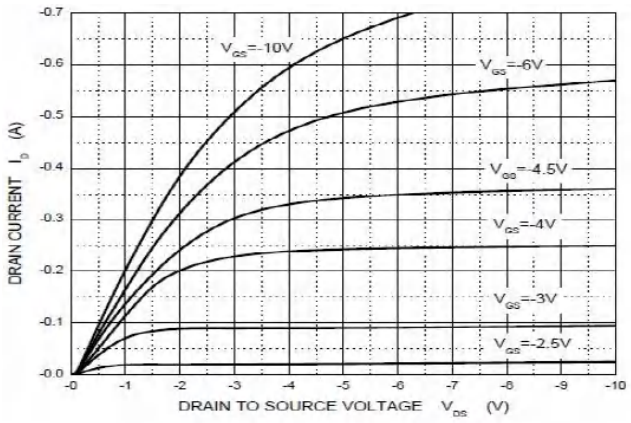


Figure1. Output Characteristics

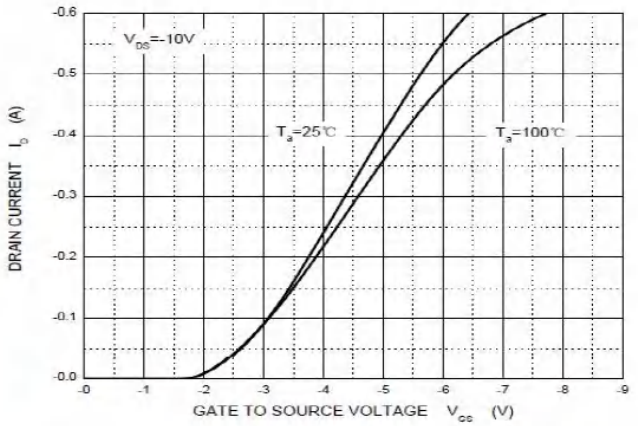


Figure2. Transfer Characteristics

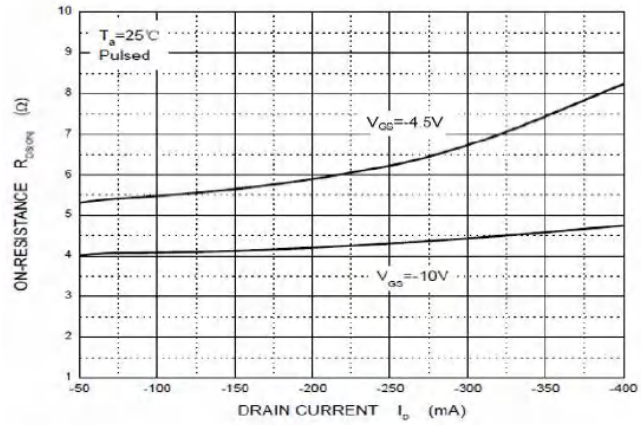


Figure3. Drain-Source on Resistance

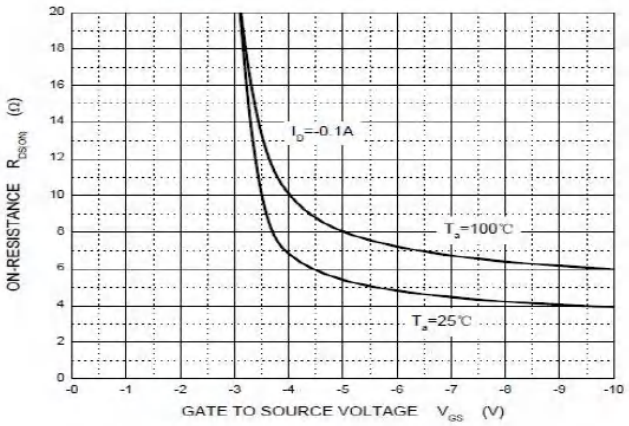


Figure4. Drain-Source on Resistance

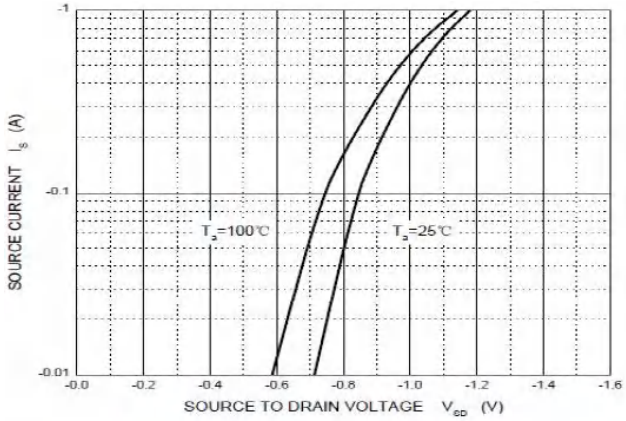


Figure5. Diode Forward Voltage vs. current

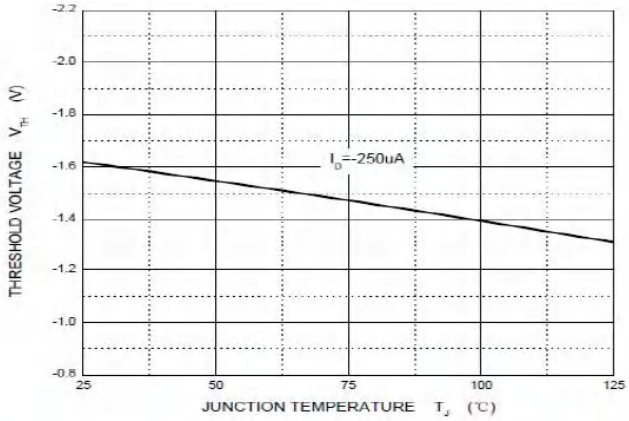
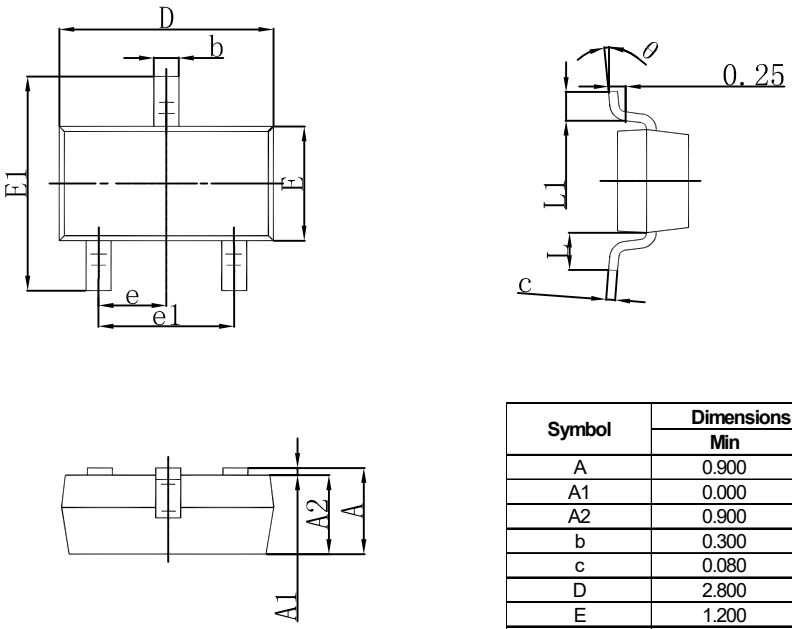


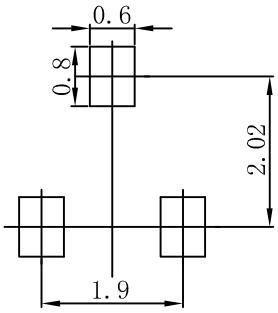
Figure6. Gate Threshold vs. Junction Temperature

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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