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DMP3099L

P-Channel 20-V(D-S) MOSFET

www.sot23.com.tw

Product Summary

- V_{DS}= -30V, I_D= -4.1A
  $R_{DS(ON)}$ <55mΩ @ V_{GS} = -10V
  $R_{DS(ON)}$ <85mΩ @ V_{GS} = -4.5V
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead free product is acquired

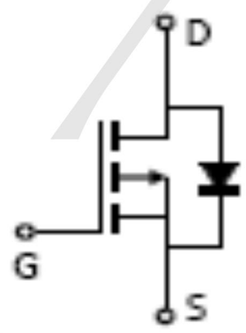
Application

- PWM Applications
- Load Switch
- Power Management

Package and Pin Configuration

SOT-23

Circuit diagram



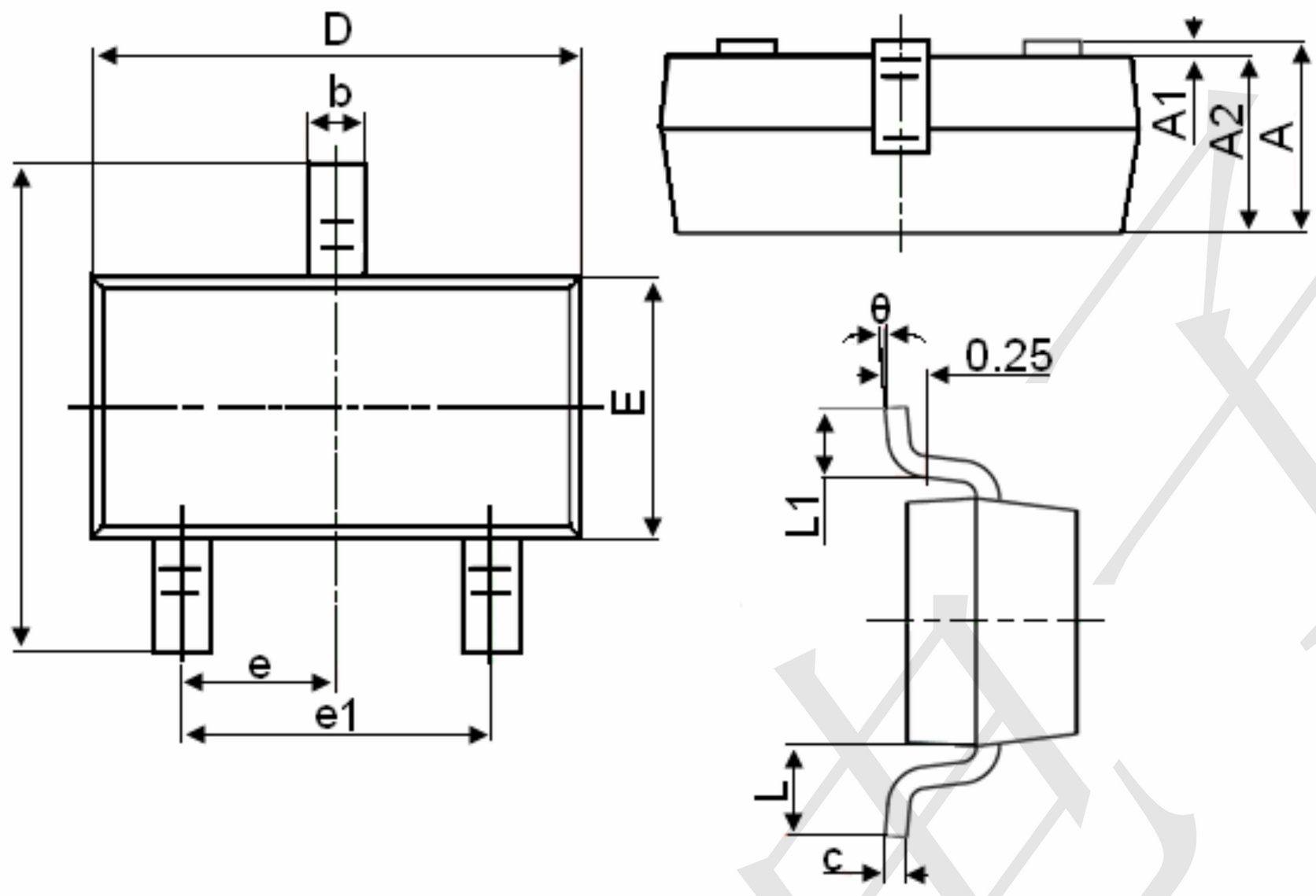
Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

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℃	-4.1	A
		T_A = 100℃	-2.7	A
I_{DM}	Pulsed Drain Current note1		-16.4	A
P_D	Power Dissipation	T_A = 25℃	1.51	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		83	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_A = 25°C 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	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 note2	V_{GS} = -10V, I_D = -4A	-	42	55	mΩ
		V_{GS} = -4.5V, I_D = -3A	-	62	85	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = -15V, V_{GS} = 0V, f = 1.0MHz	-	580	-	pF
C_{oss}	Output Capacitance		-	98	-	pF
C_{rss}	Reverse Transfer Capacitance		-	74	-	pF
Q_g	Total Gate Charge	V_{DS} = -15V, I_D = -4.1A, V_{GS} = -10V	-	6.8	-	nC
Q_{gs}	Gate-Source Charge		-	1	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	1.4	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} = -15V, I_D = -1A, V_{GS} = -10V, R_{GEN} = 2.5Ω	-	14	-	ns
t_r	Turn-on Rise Time		-	61	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	19	-	ns
t_f	Turn-off Fall Time		-	10	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-4.1	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-16.4	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S = -4.1A	-	-0.8	-1.2	V

SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°