



ZLM0207AB

P-Channel Enhancement Mode Field Effect Transistor

● Features

$V_{DS} (V) = -20V, I_D = -3.1A$

$R_{DS(ON)} < 90m\Omega @ V_{GS} = -4.5V$

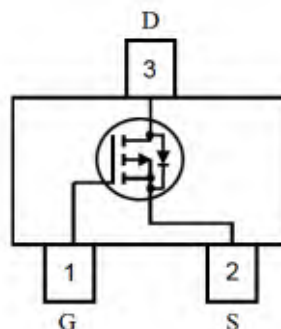
$R_{DS(ON)} < 120m\Omega @ V_{GS} = -2.5V$

SOT23 Package

● General Description

These P-Channel enhancement mode field effect transistors are produced using high cell density, DMOS technology.

● Pin Configurations



● Absolute Maximum Ratings @ $T_A=25^{\circ}C$ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	± 8	V
Drain Current (Continuous)	$T_A=25^{\circ}C$	I_D	-2.8	A
	$T_A=70^{\circ}C$		-2.1	
Drain Current (Pulse)		I_{DM}	-10	A
Power Dissipation	$T_A=25^{\circ}C$	P_D	1	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^{\circ}C$



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● Electrical Characteristics @T_A=25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON/OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20 V, V _{GS} = 0V	--	--	-1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _{DS} =-250μA	-0.5	-0.65	-1	V
Gate Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V	--	--	±100	nA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -2.8A	--	70	90	mΩ
		V _{GS} = -2.5V, I _D = -2A	--	85	120	mΩ
		V _{GS} = -1.8V, I _D = -2A	--	110	150	mΩ
Forward Transconductance	g _{FS}	V _{DS} = -5V, I _D = -3A	--	7	--	S
Diode Forward Voltage	V _{SD}	I _{SD} = -1.6A, V _{GS} = 0V	--	-0.75	-1.0	V
Switching CHARACTERISTICS						
Total Gate Charge	Q _g	V _{DS} = -6V, I _D = -2.8A V _{GS} = -4.5V	--	6.6	8.6	nC
Gate-Source Charge	Q _{gs}		--	0.3	0.4	nC
Gate-Drain Charge	Q _{gd}		--	1.3	1.7	nC
Turn-on Delay Time	t _{d (on)}	V _{DD} = -6V, R _L =6Ω I _D = -1A, V _{GEN} = -4.5V R _G = 6Ω	--	9.7	19.4	ns
Turn-on Rise Time	t _r		--	3.6	7.1	ns
Turn-off Delay Time	t _{d(off)}		--	33.3	66.6	ns
Turn-off Fall Time	t _f		--	4.5	9	ns
Dynamic CHARACTERISTICS						
Input Capacitance	C _{iss}	V _{GS} =0V,V _{DS} = -6V,f= 1.0MHz	--	589	--	pF
Output Capacitance	C _{oss}		--	91.2	--	pF
Reverse Transfer Capacitance	C _{rss}		--	67.2	--	pF

Notes:

1. Pulse width limited by maximum junction temperature.
2. Pulse test: PW ≤ 300μs, duty cycle ≤ 2%.
3. For design AID only, not subject to production testing.
4. Switching time is essentially independent of operating temperature.



Typical Performance Characteristics

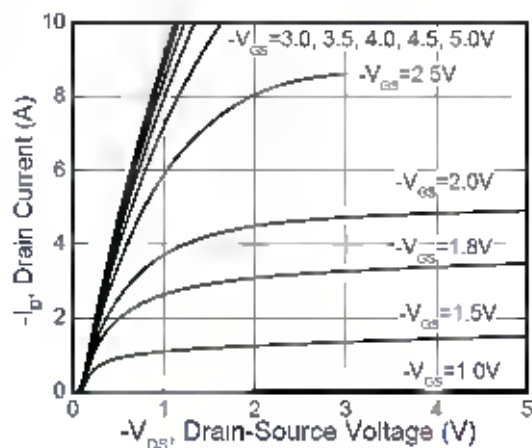


Figure 1. Output Characteristics

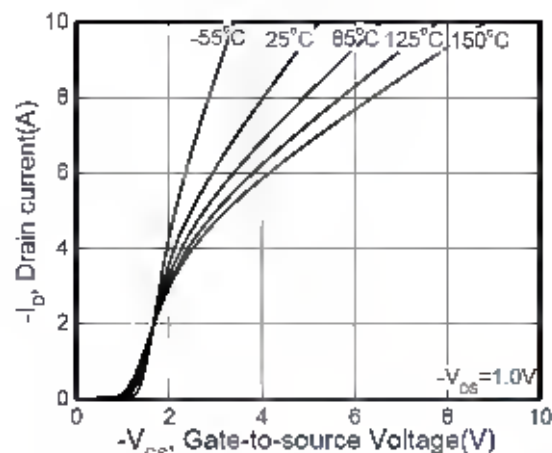


Figure 2. Transfer Characteristics

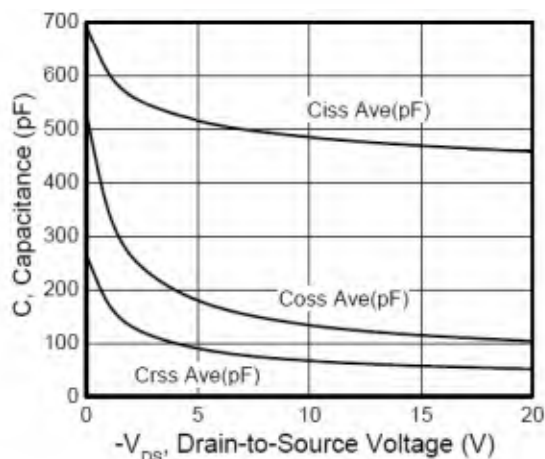


Figure 3. Capacitance

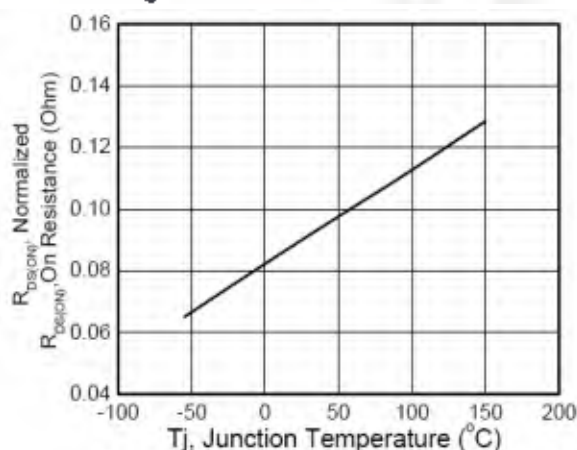


Figure 4. On Resistance Vs. Temperature

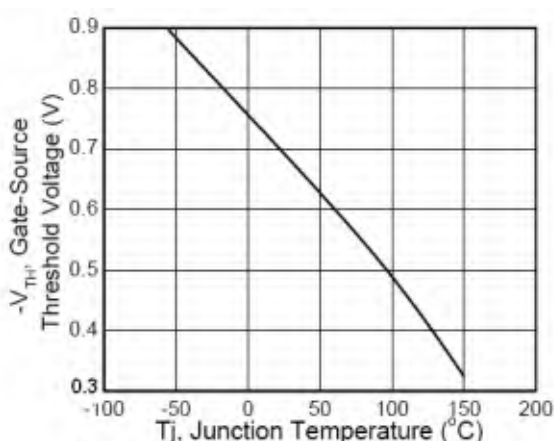


Figure 5. Gate Thershold Vs. Temperature

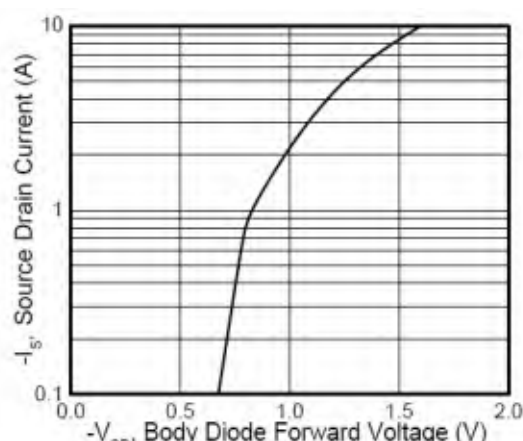
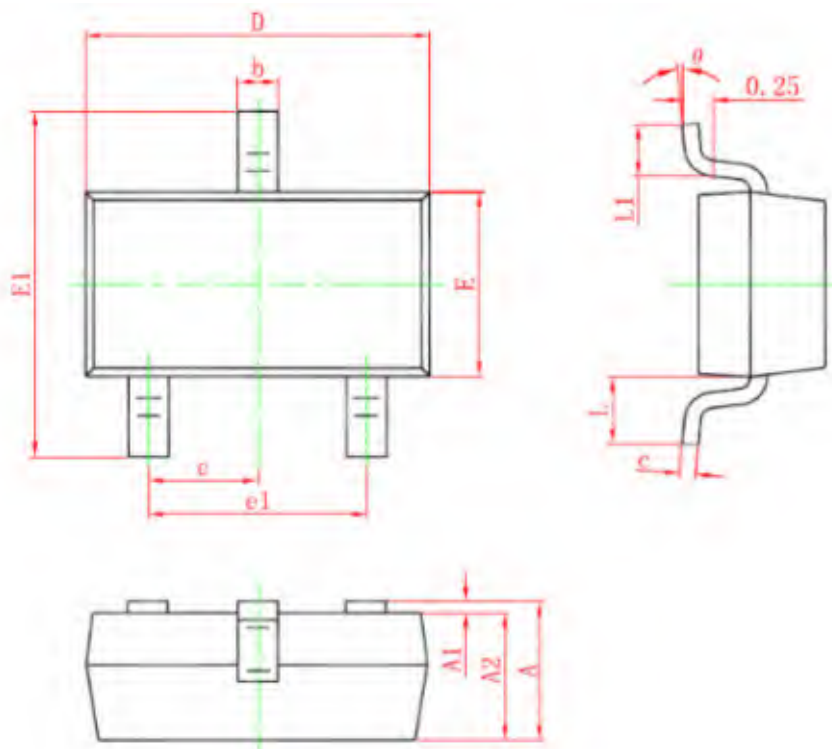


Figure 6. Body Diode Forward Voltage Vs. Source Current



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● Package Information



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°