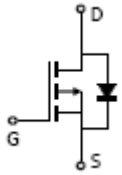
迈拓电子
MAITUO ELECTRONIC

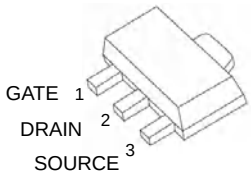
MT9451 P-Channel 20-V(D-S) MOSFET



Description

The Advanced Power MOSFETs provide the desigher with the best combination of fast switching, ruggedized device desigh, ultra low on- resistance and cost-effectiveness.

Marking : A9451



SOT-89-3L

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Continuous Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	-2.3	A
Power Dissipation	P_D	0.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	℃/W
Operating Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55 ~+150	

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =10μA	-20			V
Gate-body leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±12V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V, V_{GS} =0V			-1.0	μA
On characteristics						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-0.25mA	-0.50		-1.50	V
Static drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-2.3A			0.130	Ω
		V_{GS} =-2.5V, I_D =-1.0A			0.220	
Forward transconductance (note 1)	g_{fs}	V_{DS} =-5V, I_D =-2.3A	2.3			S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =-20V,V_{GS} =0V, f=1MHz			430	pF
Output capacitance	C_{oss}			100		
Reverse transfer capacitance	C_{rss}			35		
Switching characteristics						
Turn-on delay time (note 1,2)	$t_{d(on)}$	V_{GS}=-5V, V_{DS}=-10V, I_D =-1A,R_G=3.3Ω, R_D=10Ω		9		ns
Rise time (note 2)	t_r			25		
Turn-off delay time (note 2)	$t_{d(off)}$			20		
Fall time (note 2)	t_f			10		
Drain-source body diode characteristics						
Body diode forward voltage (note 1)	V_{SD}	I_S=-1A, V_{GS} = 0V			-1.6	V

No tes:

1. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
2. These parameters have no way to verify.

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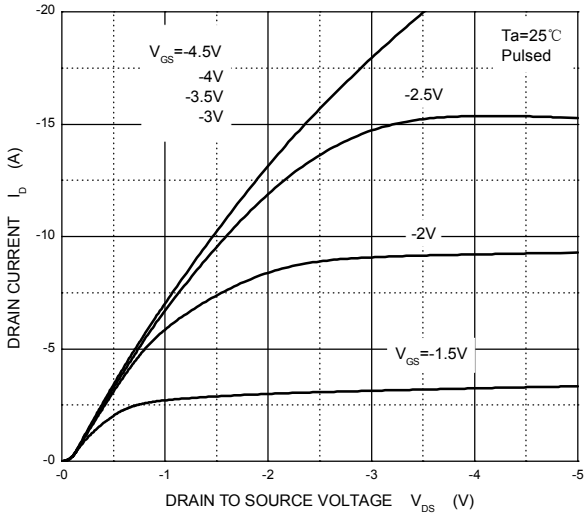
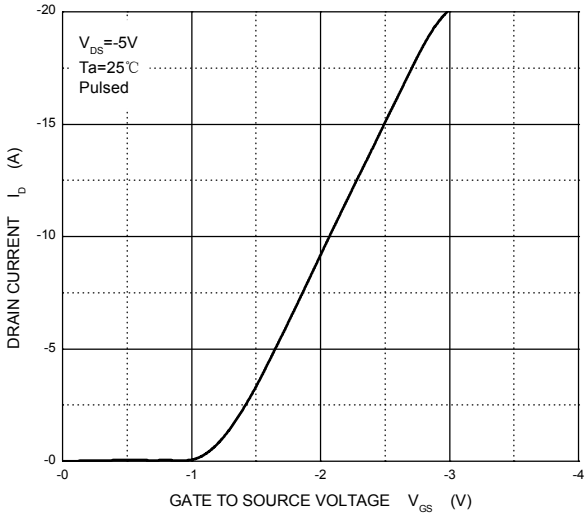
Typical Characteristics

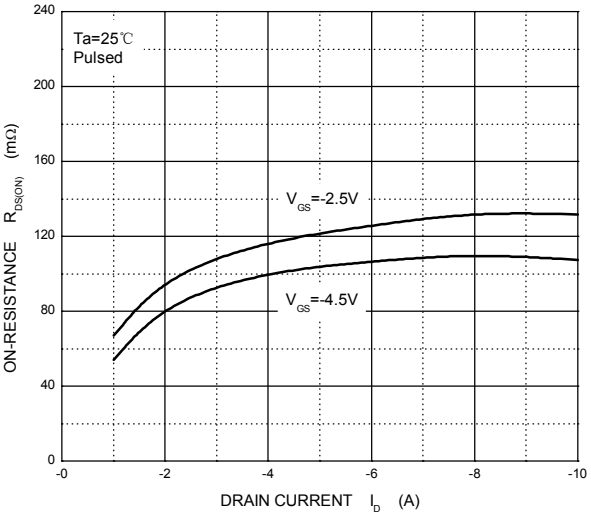
Output Characteristics



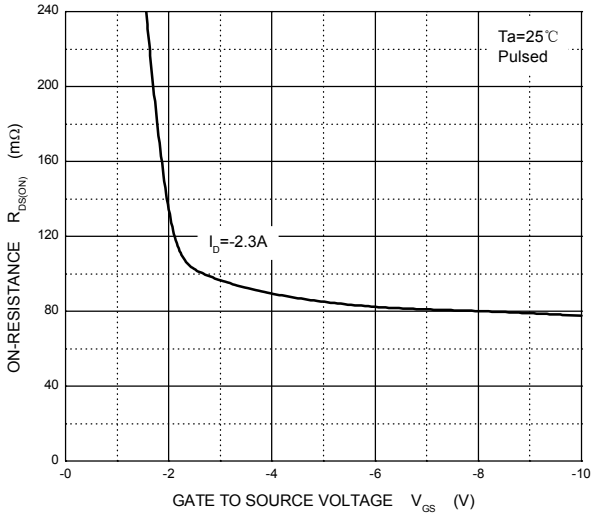
Transfer Characteristics



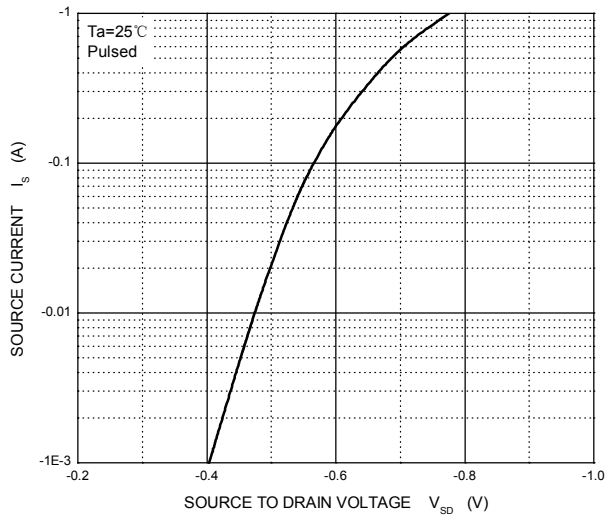
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



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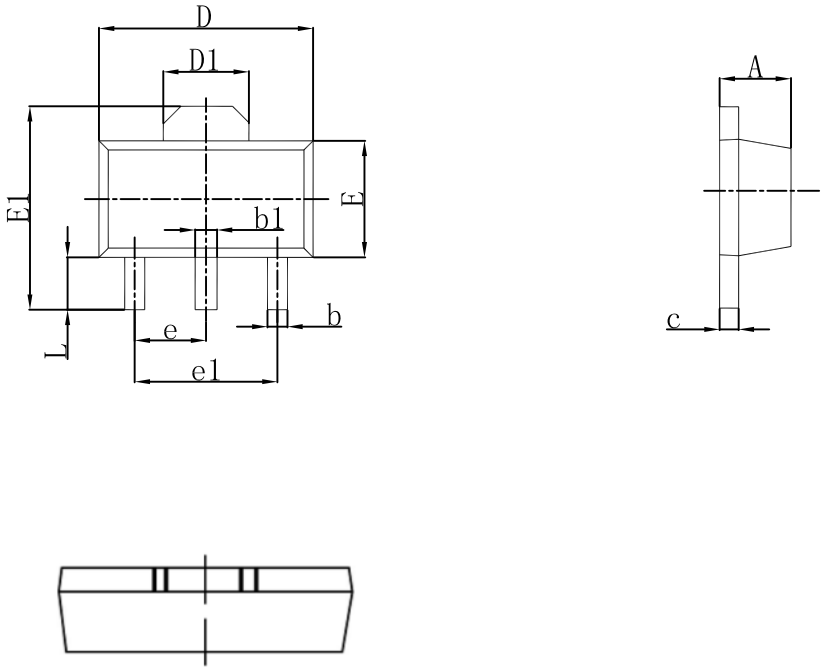
SOT-89-3L Outlines Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047