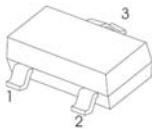
SHENZHEN HAOLIN ELECTRONICS TECHNOLOGY CO., LTD

SOT-23 Plastic-Encapsulate Transistors

1H05 N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
100V	234mΩ@10V	5A
	247mΩ@6V	
	258mΩ@4.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

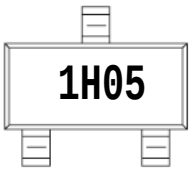
FEATURE

- TrenchFET Power MOSFET
- Low $R_{DS(ON)}$
- Surface Mount Package

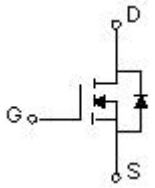
APPLICATION

- DC/DC Converters
- Load Switch
- LED Backlighting in LCD TVs

MARKING



Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current	I_{DM}*	8	A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10 s)	T_L	260	℃

*Repetitive rating：Pluse width limited by junction temperature.

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

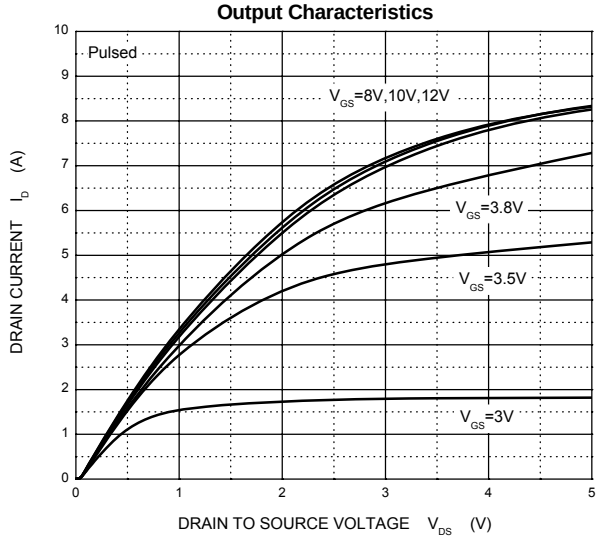
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =100V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage(note 1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.2		2.8	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =10V, I_D =5A			234	mΩ
		V_{GS} =4.5V, I_D =1A			257	mΩ
		V_{GS} =10V,I_D =1A			220	mΩ
Forward tranconductance (note 1)	g_{FS}	V_{DS} =20V, I_D =2.5A		2		S
Diode forward voltage (note 1)	V_{SD}	I_S=1.3A, V_{GS} = 0V			1.2	V
DYNAMIC PARAMETERS (note2)						
Input Capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V,f =1MHz		190		pF
Output Capacitance	C_{oss}			22		pF
Reverse Transfer Capacitance	C_{rss}			13		pF
Gate Resistance	R_g	F=1MHz	0.3		2.8	Ω
SWITCHING PARAMETERS (note 2)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=50V,V_{GEN}=4.5V R_L=39Ω,R_G=1Ω,I_D=1.3A			45	ns
Turn-on rise time	t_r				39	ns
Turn-off delay time	$t_{d(off)}$				26	ns
Turn-off fall time	t_f				20	ns
Total Gate Charge	Q_g	V_{DS} =50V,V_{GS} =4.5V,I_D=1.6A			5.8	nC
Gate-Source Charge	Q_{gs}			0.75		nC
Gate-Drain Charge	Q_{gd}			1.4		nC

Notes : 1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.

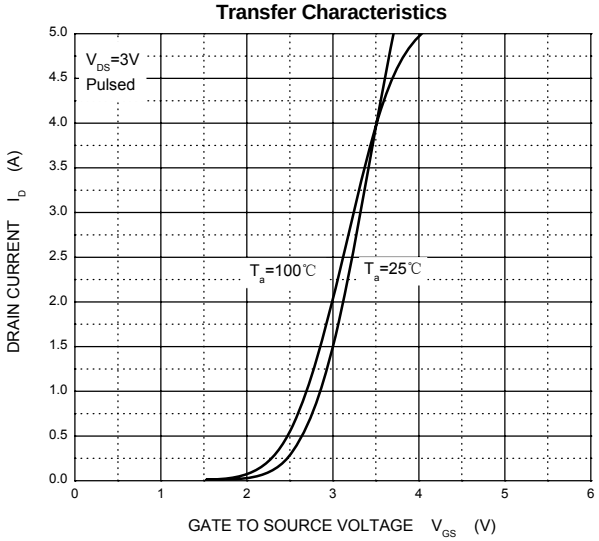
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

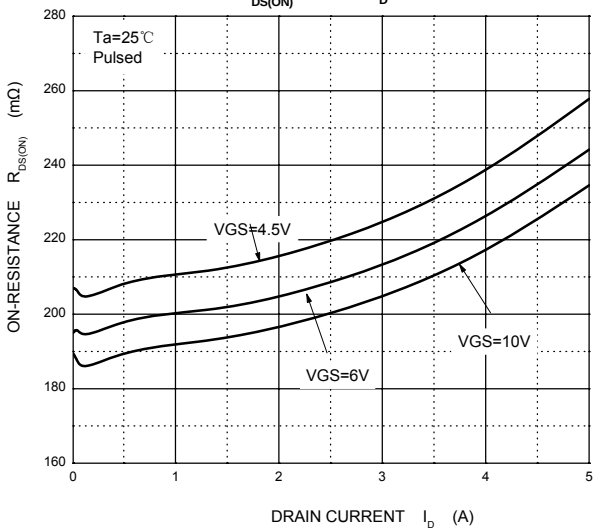
Output Characteristics



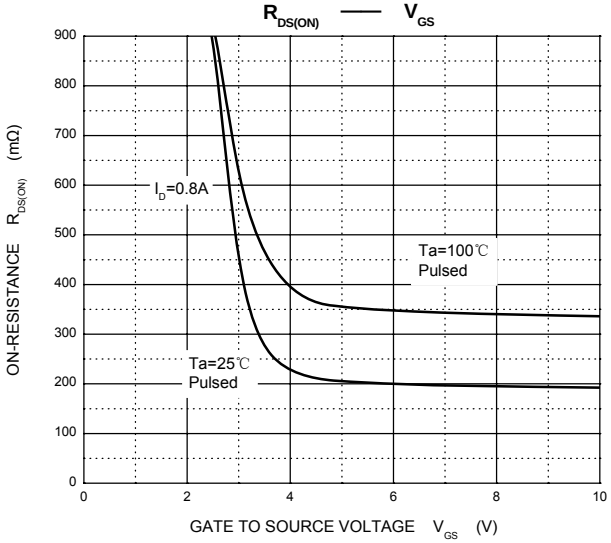
Transfer Characteristics



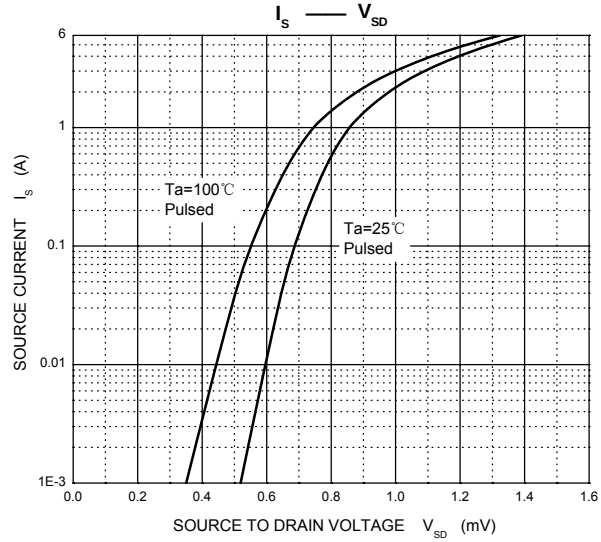
$R_{DS(ON)}$ —— I_D



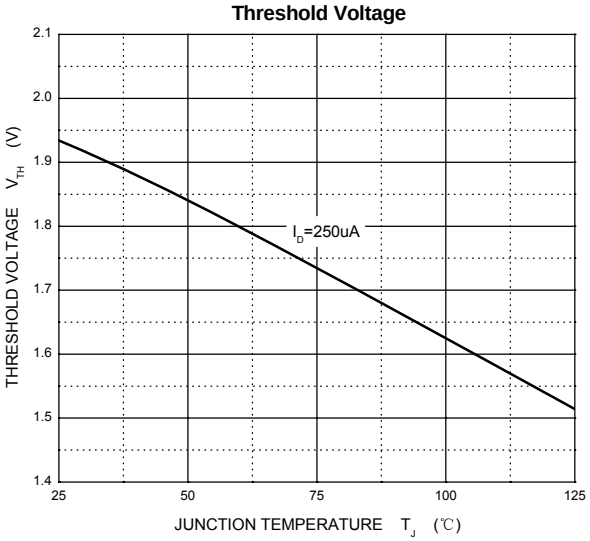
$R_{DS(ON)}$ —— V_{GS}



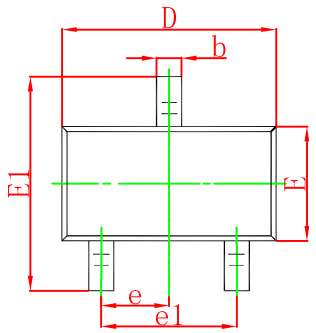
I_S —— V_{SD}

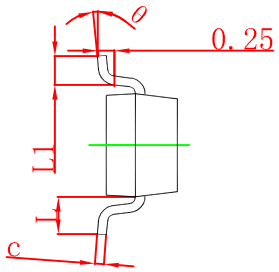


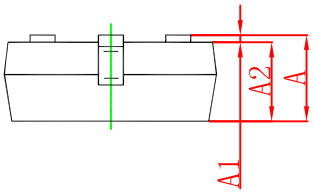
Threshold Voltage



SOT-23 Package Outline Dimensions

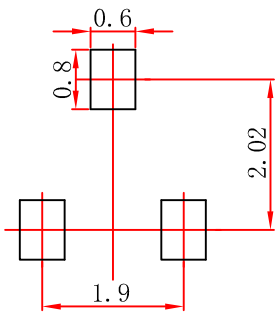






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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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