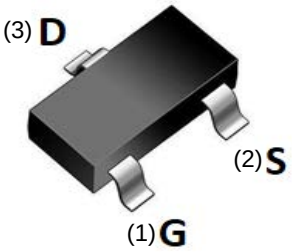
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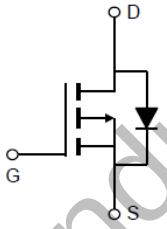
Features:

- ☐ Advanced Trench Technology.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Ultra Low Gate Charge:Qg=12nC (Typ.)
- ☐ VDSS=-60V, ID=-4A
- ☐ Rds(on):109m Ω(Typ.) @VG=-10V
- ☐ 100% Avalanche Tested

SOT-23-3L

RoHS COMPLIANT





1.Gate (G)
2.Drain (D)
3.Source (S)

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-4	A
Drain Current-Continuous(T_C=70℃)	I_D (70℃)	-3.2	A
Pulsed Drain Current	I_{DM}	16	A
Maximum Power Dissipation	P_D	2	W
Single pulse avalanche energy	E_{AS}	12.8	mJ
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	40.3	℃/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

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Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-60			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.4	-1.7	-2	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-4A		109	115	mΩ
		V_{GS}=-4.5V, I_D=-3A		120	165	
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-2A			1.2	V
Forward Tranconductance	g_{FS}					
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V,f=1MHz		650		pF
Output Capacitance	C_{oss}			95		
Reverse Transfer Capacitance	C_{rss}			60		
Gate Resistance	R_g	f=1MHz			20	Ω
Swithing Characteristics						
Total Gate Charge	Q_g	V_{DD}=-30V,V_{GS}=-4.5V,I_D=-4A			12	nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			3.7		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} =-30V, V_{GEN}=-4.5V, I_D=-3A R_L=12.5Ω, R_G=1Ω			45	ns
Turn-On Rise Time	t_r				105	
Turn-Off Delay Time	$t_{d(off)}$				60	
Turn-Off Fall Time	t_f				45	

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Curve Characteristics

Fig. 1 - Output Characteristics

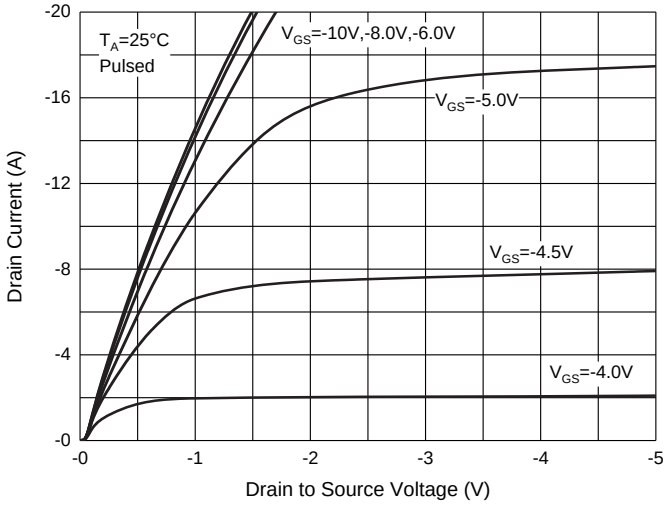


Fig. 2 - Transfer Characteristics

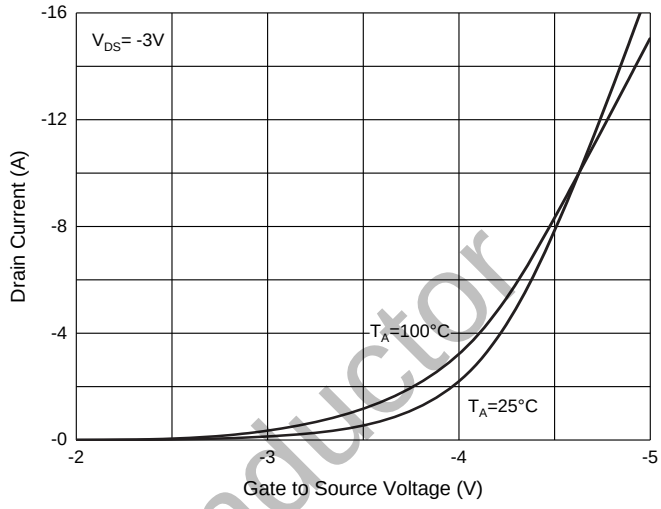


Fig. 3 - $R_{DS(ON)}$—I_D

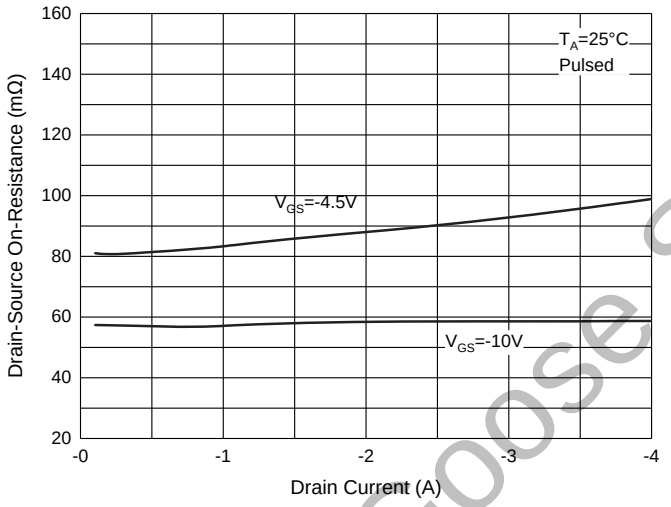


Fig. 4 - $R_{DS(ON)}$—V_{GS}

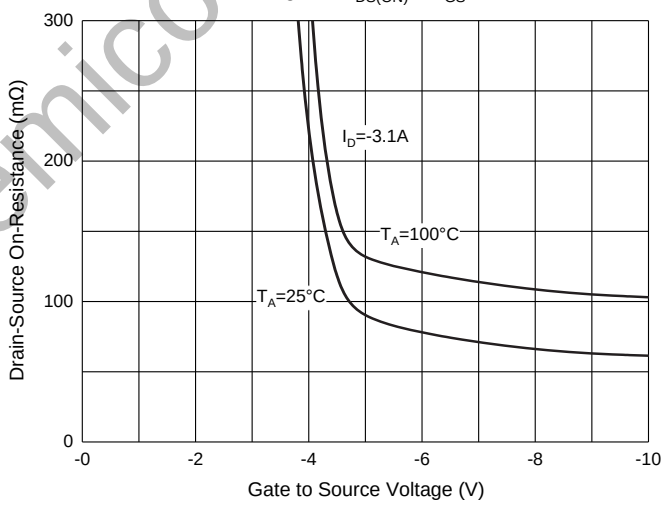
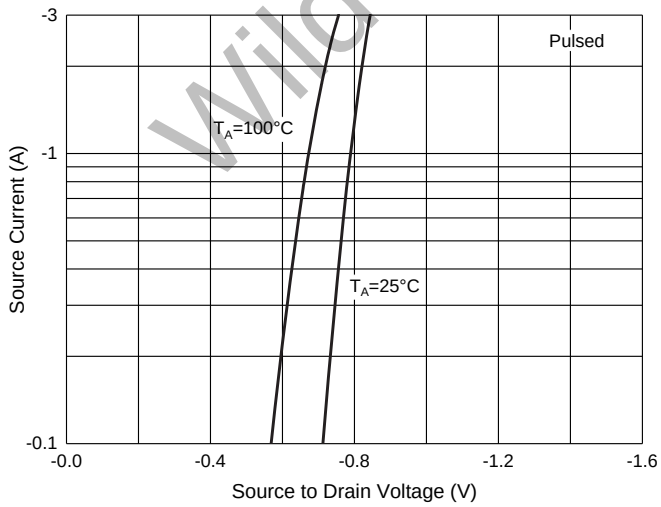


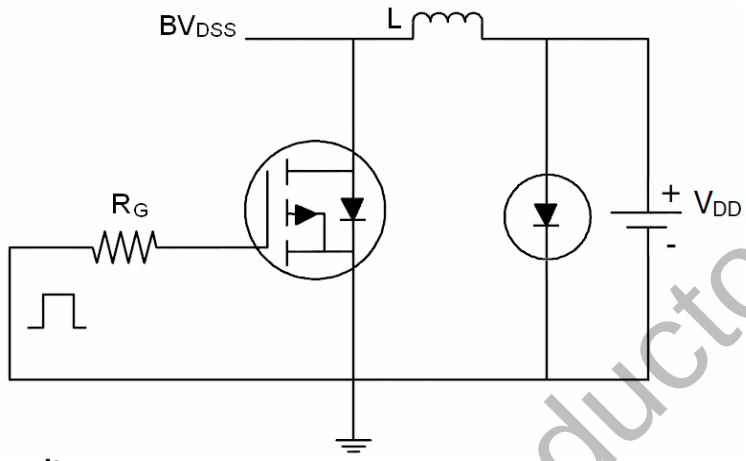
Fig. 5 - I_S—V_{SD}



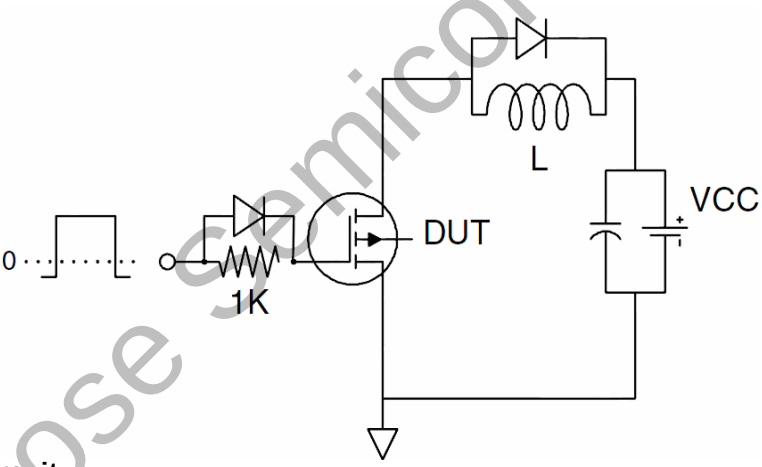
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Test Circuit

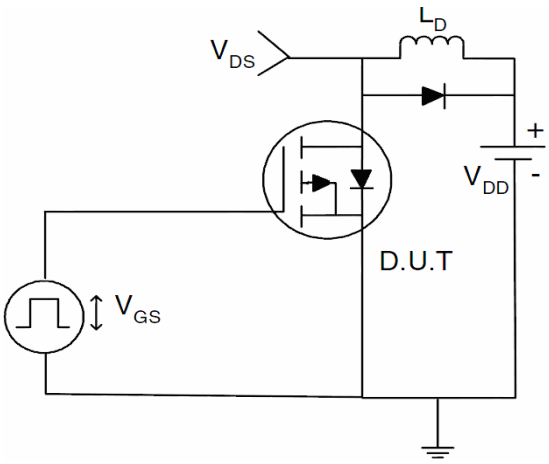
1) E_{AS} Test Circuit



2) Gate Charge Test Circuit



3) Switch Time Test Circuit

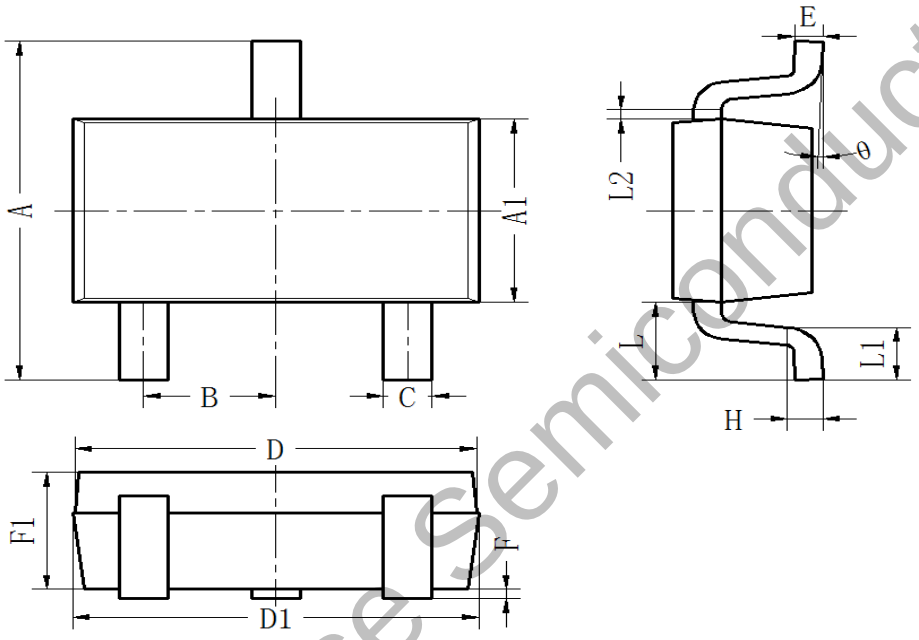


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Package Dimension

SOT-23-3L

Unit: mm



符号	标准	下公差	上公差	下限值		上限值	
				内控	放行	内控	放行
A	2.8	-0.15	0.15	2.68	2.65	2.92	2.95
A1	1.6	-0.1	0.1	1.52	1.5	1.68	1.7
B	0.95	-0.05	0.05	0.91	0.90	0.99	1.00
C	0.4	-0.1	0.1	0.32	0.3	0.45	0.5
D	2.92	-0.1	0.1	2.84	2.82	3.00	3.02
D1	2.92	-0.05	0.05	2.88	2.87	2.96	2.97
E	0.15	-0.05	0.05	0.11	0.1	0.19	0.2
H	0.254	-0.05	0.05	0.214	0.204	0.294	0.304
L	0.65	-0.1	0.1	0.57	0.55	0.73	0.75
L1	0.45	-0.15	0.15	0.33	0.3	0.57	0.6
L2	0.08	-0.02	0.02	0.06	0.06	0.10	0.10
θ	/	/	/	/	0	/	8
F1	1.1	-0.05	0.05	1.06	1.05	1.14	1.15
F	0.08	-0.04	0.04	0.05	0.04	0.11	0.12

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