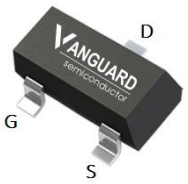
Features

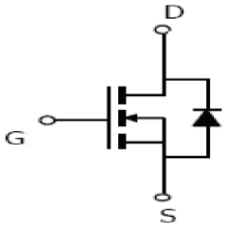
- N-Channel，5V Logic Level Control
- Enhancement mode
- Fast Switching
- Pb-free lead plating; RoHS compliant

V_{DS}	60	V
$R_{DS(on),TYP}$@ V_{GS}=10 V	38	mΩ
$R_{DS(on),TYP}$@ V_{GS}=4.5 V	46	mΩ
I_D	4.5	A

SOT23-3L



Pb-Free RoHS Halogen-Free



Part ID	Package Type	Marking	Tape and reel information
VS6622AL	SOT23-3L	VS08	3000pcs/reel

Maximum ratings, at T_j=25 °C, unless otherwise specified

Symbol	Parameter		Rating	Unit
$V_{(BR)DSS}$	Drain-Source breakdown voltage		60	V
I_S	Diode continuous forward current	T_A=25°C	1.0	A
I_D	Continuous drain current @VGS=10V	T_A=25°C	4.5	A
		T_A=100°C	2.8	A
I_{DM}	Pulse drain current tested ①	T_A=25°C	18	A
P_D	Maximum power dissipation	T_A=25°C	1.25	W
VGS	Gate-Source voltage		±20	V
T_{STG} T_J	Storage and operating temperature range		-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Typical	Unit
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	60	°C/W
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	100	°C/W

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ T_j = 25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	60	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V,V_{GS}=0V	--	--	1	μA
	Zero Gate Voltage Drain Current(T_j=125℃)	V_{DS}=60V,V_{GS}=0V	--	--	100	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250μA	1.3	1.8	2.4	V
$R_{DS(ON)}$	Drain-Source On-State Resistance②	V_{GS}=10V, I_D=5A	--	38	49	mΩ
$R_{DS(ON)}$	Drain-Source On-State Resistance②	V_{GS}=4.5V, I_D=4A	--	46	59	mΩ
Dynamic Electrical Characteristics @ T_j= 25°C (unless otherwise stated)						
C_{iss}	Input Capacitance	V_{DS}=30V,V_{GS}=0V, f=1MHz	750	970	1200	pF
C_{oss}	Output Capacitance		--	50	150	pF
C_{rss}	Reverse Transfer Capacitance		--	35	100	pF
R_g	Gate Resistance	f=1MHz		1.7		Ω
Q_g	Total Gate Charge	V_{DS}=30V,I_D=5A, V_{GS}=10V	--	18	--	nC
Q_{gs}	Gate-Source Charge		--	4.5	--	nC
Q_{gd}	Gate-Drain Charge		--	5.2	--	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=30V, I_D=5A, R_G=3Ω, V_{GS}=10V	--	10	--	nS
t_r	Turn-on Rise Time		--	5.8	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	33.5	--	nS
t_f	Turn-Off Fall Time		--	9.5	--	nS
Source- Drain Diode Characteristics@ T_j= 25°C (unless otherwise stated)						
V_{SD}	Forward on voltage	I_{SD}=5A,V_{GS}=0V	--	0.8	1.2	V
t_{rr}	Reverse Recovery Time	T_j=25℃,I_{sd}=5A, di/dt=500A/μs	--	29	--	nS
Q_{rr}	Reverse Recovery Charge			34		nC

NOTE:

① Repetitive rating; pulse width limited by max. junction temperature.

② Pulse width ≤ 300μs; duty cycle≤ 2%.

Typical Characteristics

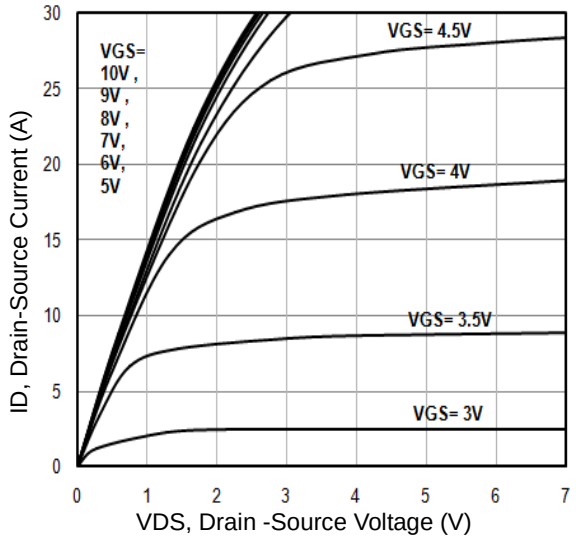


Fig1. Typical Output Characteristics

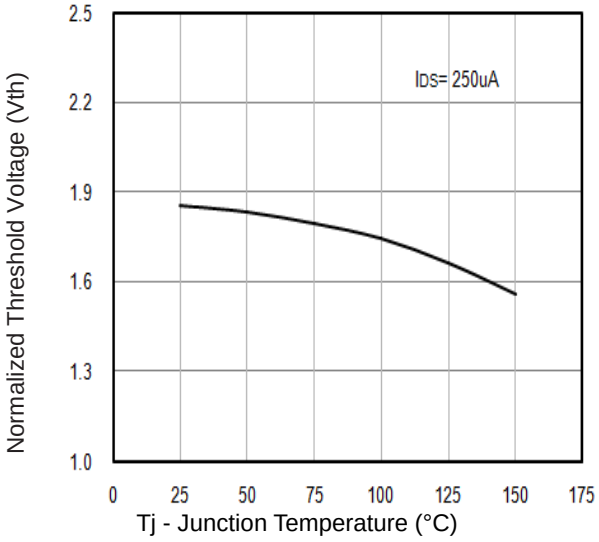


Fig2. $V_{GS(TH)}$ Gate -Source Voltage Vs.Tj

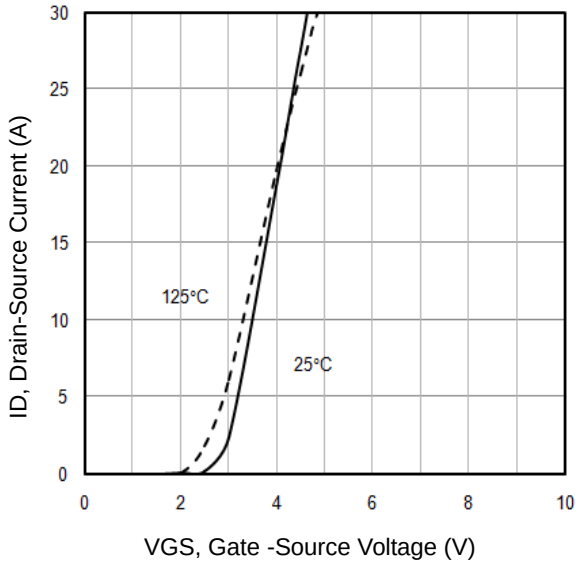


Fig3. Typical Transfer Characteristics

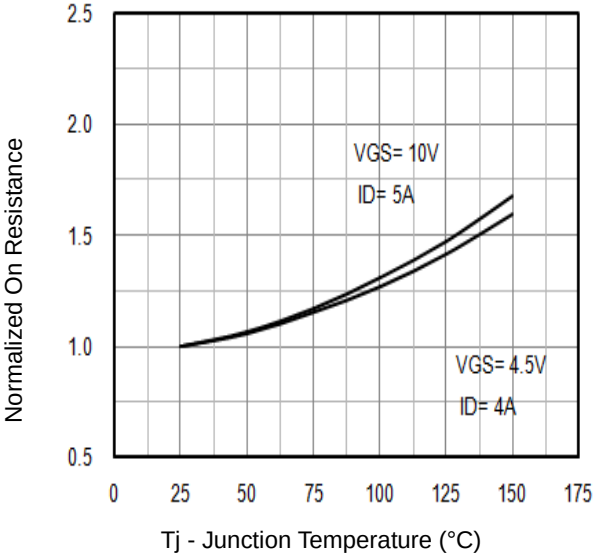


Fig4. Normalized On-Resistance Vs. Tj

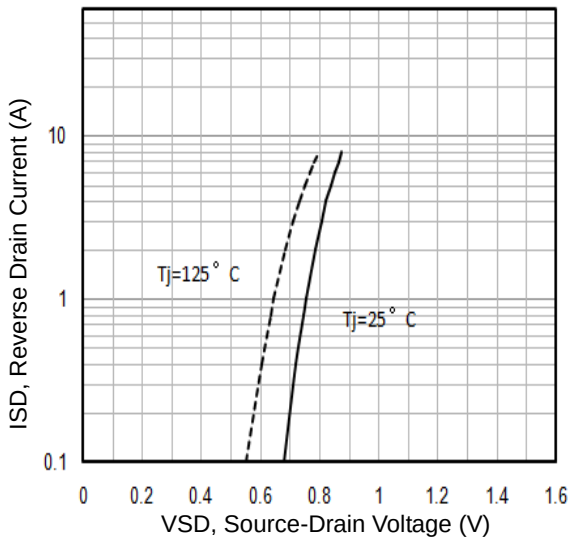


Fig5. Typical Source-Drain Diode Forward Voltage

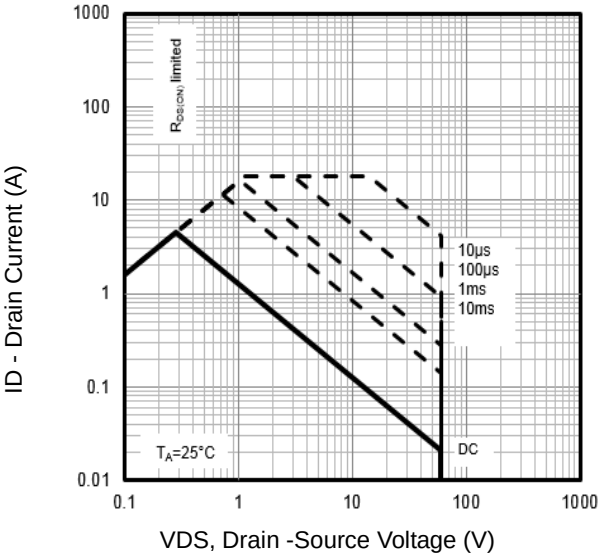


Fig6. Maximum Safe Operating Area

Typical Characteristics

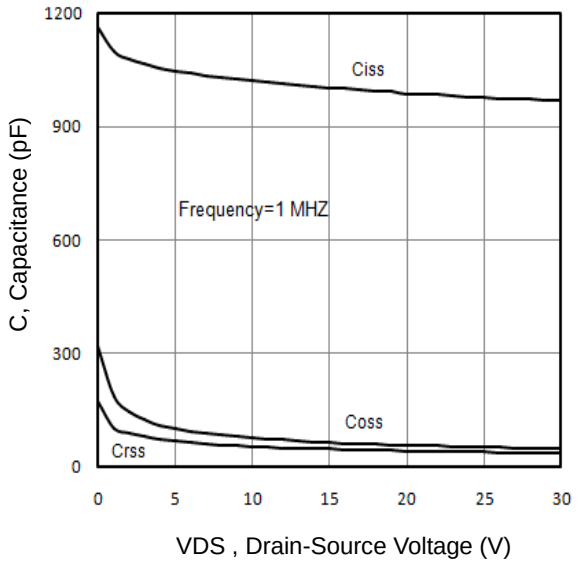


Fig7. Typical Capacitance Vs.Drain-Source Voltage

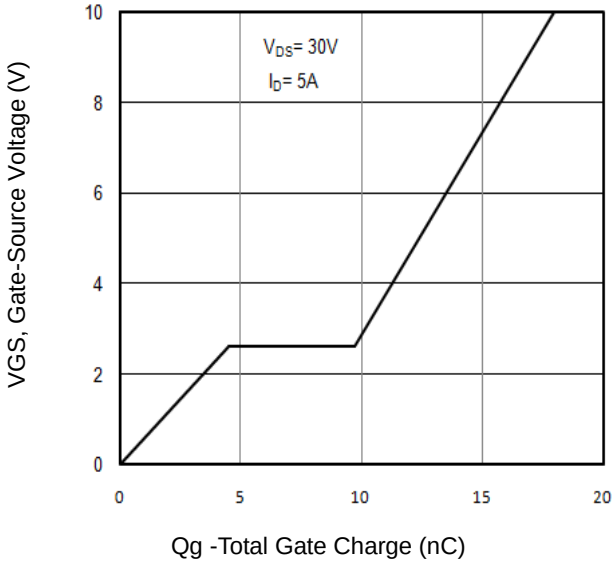


Fig8. Typical Gate Charge Vs.Gate-Source Voltage

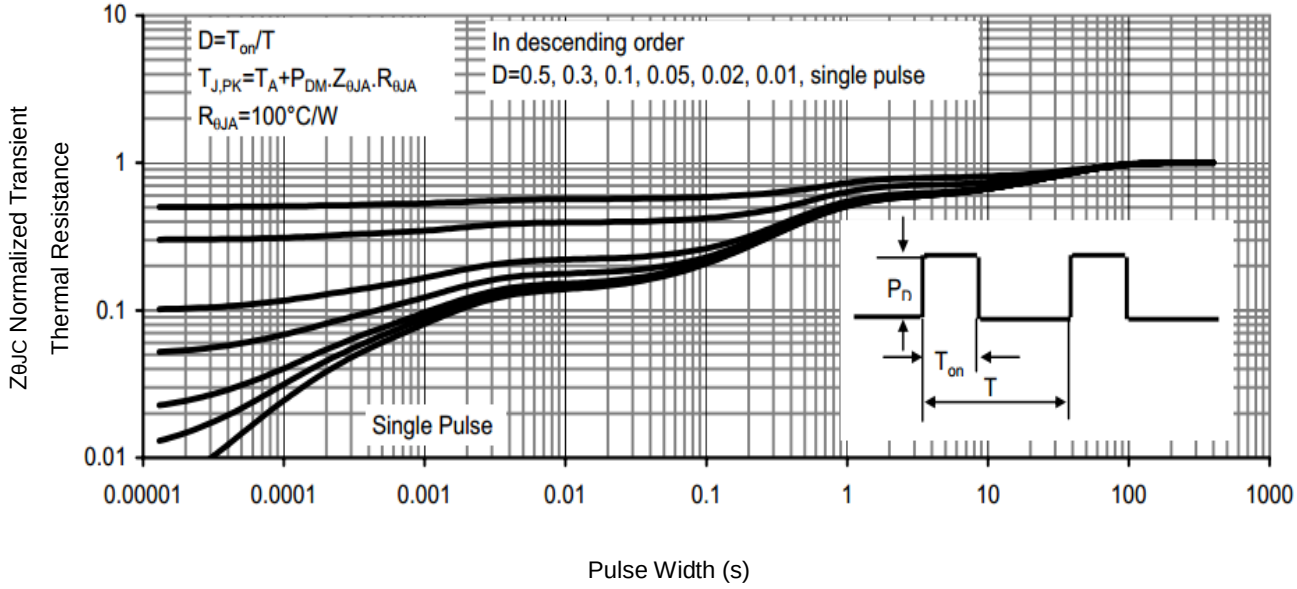


Fig9 . Normalized Maximum Transient Thermal Impedance

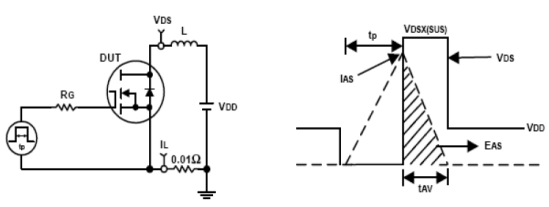


Fig10. Unclamped Inductive Test Circuit and waveforms

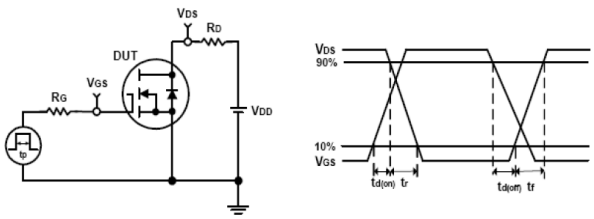
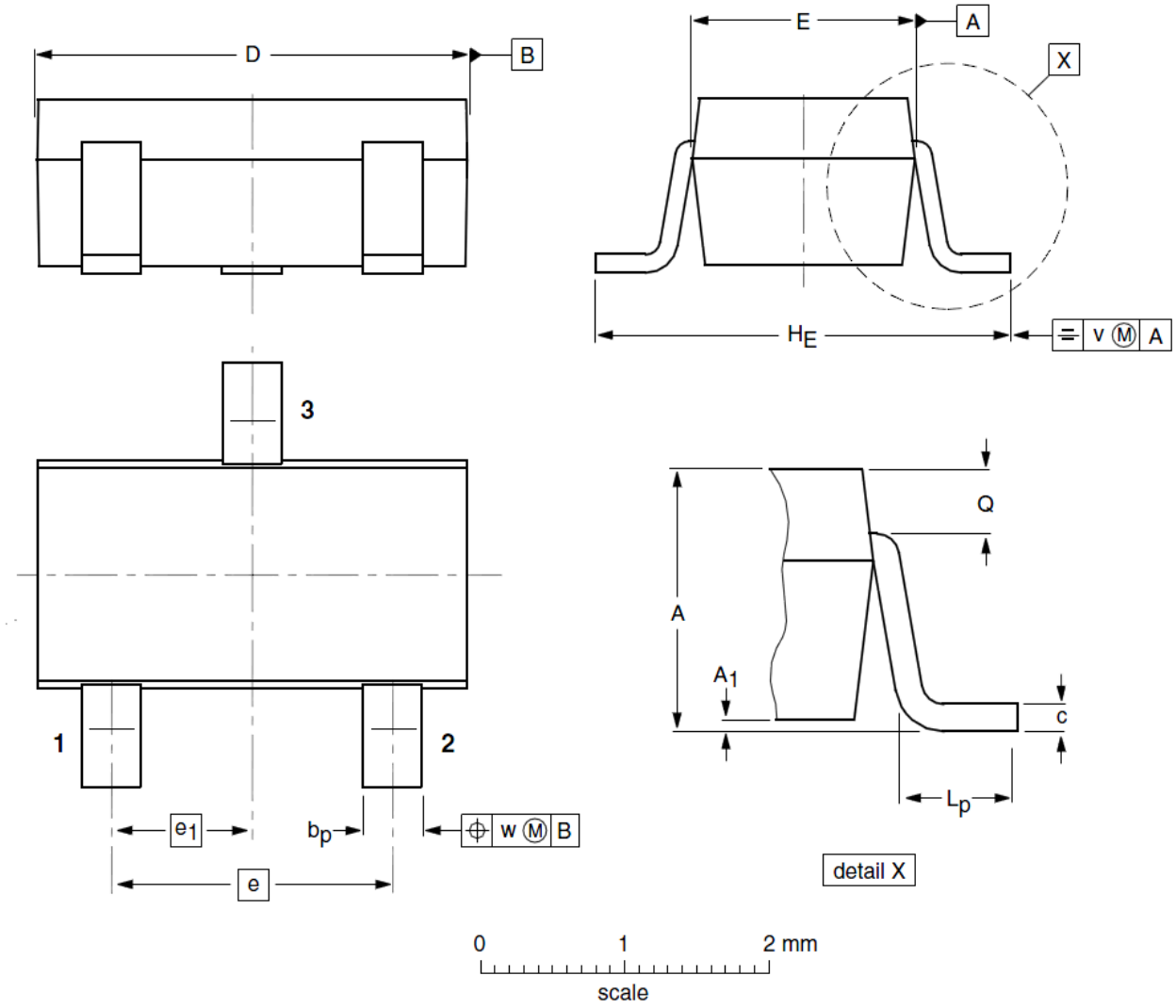


Fig11. Switching Time Test Circuit and waveforms

SOT23-3L Package Outline Data



Symbol	Dimensions (unit: mm)		
	Min	Typ	Max
A	0.90	1.07	1.25
A_1	0.01	0.06	0.10
b_p	0.30	0.35	0.50
c	0.10	0.15	0.20
D	2.70	2.92	3.10
E	1.30	1.60	1.70
e	--	1.90	--
e_1	--	0.95	--
H_E	2.50	2.80	3.00
L_p	0.30	0.40	0.60
Q	0.23	0.29	0.33
v	--	0.20	--
w	--	0.20	--

Customer Service

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