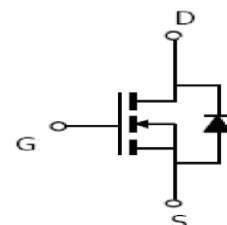
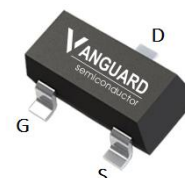


Features

- N-Channel, 2.5V Logic Level Control
- Enhancement mode
- Low on-resistance $R_{DS(on)}$ @ $V_{GS}=2.5\text{ V}$
- Fast Switching and High efficiency
- Pb-free lead plating; RoHS compliant


Halogen-Free

Part ID	Package Type	Marking	Tape and reel information
VS2622AL	SOT23-3L	VS15	3000pcs/reel

SOT23-3L


Maximum ratings, at $T_A=25\text{ }^{\circ}\text{C}$, unless otherwise specified

Symbol	Parameter		Rating	Unit
$V_{(BR)DSS}$	Drain-Source breakdown voltage		20	V
V_{GS}	Gate-Source voltage		± 12	V
I_S	Diode continuous forward current	$T_A=25^{\circ}\text{C}$	1	A
I_D	Continuous drain current @ $V_{GS}=4.5\text{ V}$	$T_A=25^{\circ}\text{C}$	8	A
		$T_A=100^{\circ}\text{C}$	5	A
I_{DM}	Pulse drain current tested ①	$T_A=25^{\circ}\text{C}$	32	A
P_D	Maximum power dissipation	$T_A=25^{\circ}\text{C}$	1.25	W
T_{STG}, T_J	Storage and junction temperature range		-55 to 150	$^{\circ}\text{C}$

Thermal Characteristics

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

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	20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current(T _j =25℃)	V _{DS} =20V,V _{GS} =0V	--	--	1	μA
	Zero Gate Voltage Drain Current(T _j =125℃)	V _{DS} =20V,V _{GS} =0V	--	--	100	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V,V _{DS} =0V	--	--	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =250μA	0.4	0.7	1	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =10V, I _D =5A	--	11	15	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =4.5V, I _D =5A	--	12	16	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =2.5V, I _D =3A	--	14	19	mΩ
Dynamic Electrical Characteristics @ T _j = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =10V,V _{GS} =0V, f=1MHz	950	1210	1450	pF
C _{oss}	Output Capacitance		130	195	260	pF
C _{rss}	Reverse Transfer Capacitance		110	170	230	pF
R _g	Gate Resistance	f=1MHz	--	3.7	--	Ω
Q _g	Total Gate Charge	V _{DS} =10V,I _D =5A, V _{GS} =4.5V	--	18	--	nC
Q _{gs}	Gate-Source Charge		--	7.5	--	nC
Q _{gd}	Gate-Drain Charge		--	8.5	--	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =5A, R _G =3Ω, V _{GS} =4.5V	--	3.1	--	μs
t _r	Turn-on Rise Time		--	4.6	--	μs
t _{d(off)}	Turn-Off Delay Time		--	9	--	μs
t _f	Turn-Off Fall Time		--	9.4	--	μs
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	--	13	--	ns
Q _{rr}	Reverse Recovery Charge		--	17	--	nC

NOTE:

- ① Repetitive rating; pulse width limited by max. junction temperature.
 ② Pulse width ≤ 300μs; duty cycles ≤ 2%.

Typical Characteristics

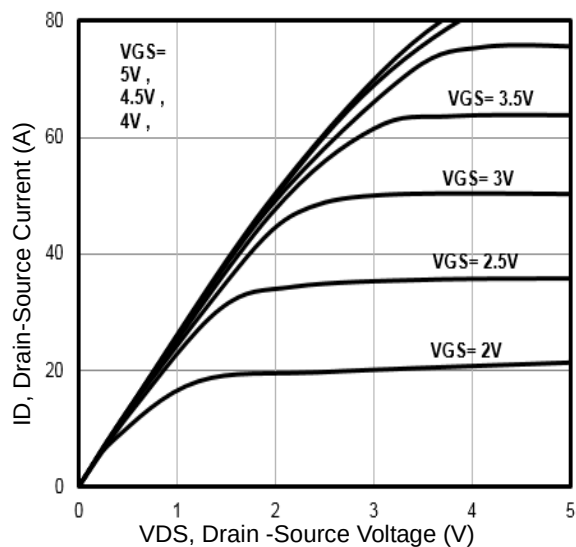


Fig1. Typical Output Characteristics

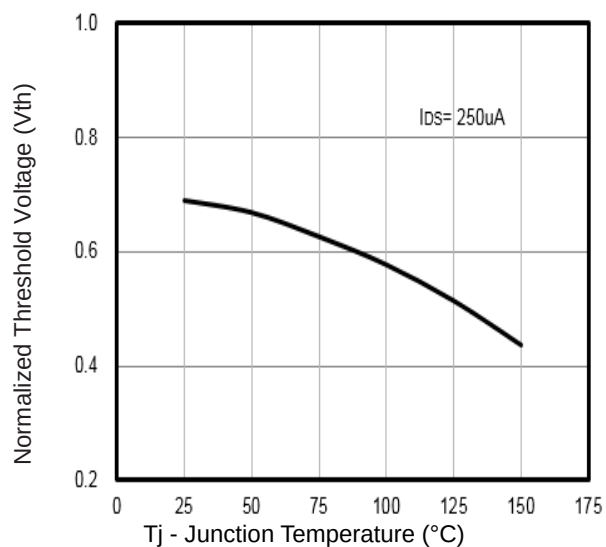


Fig2. $V_{GS(TH)}$ Gate-Source Voltage Vs. T_J

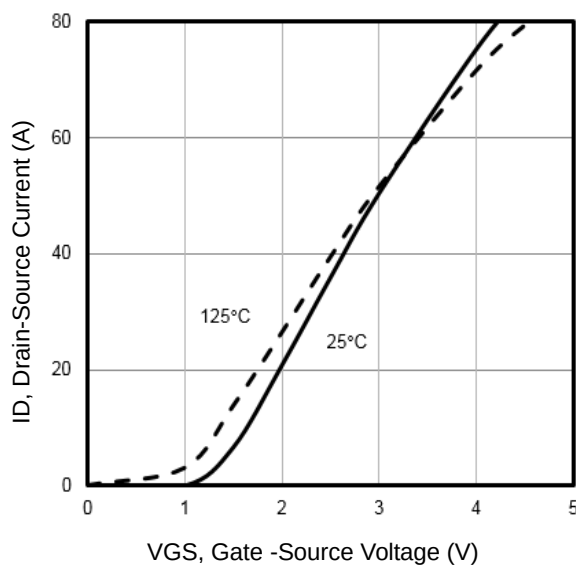


Fig3. Typical Transfer Characteristics

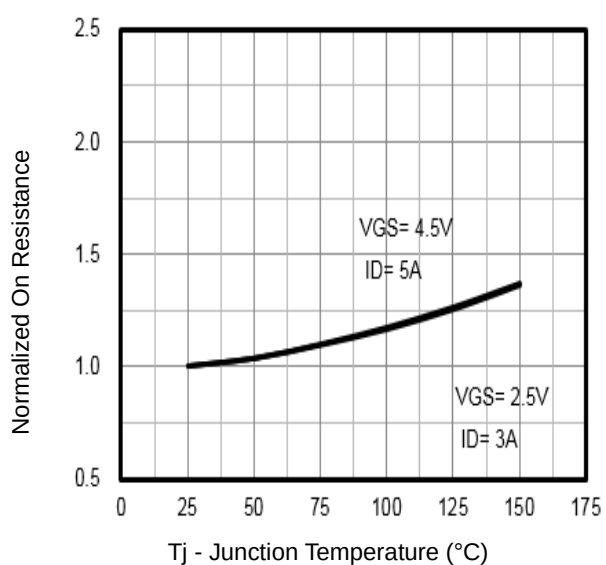


Fig4. Normalized On-Resistance Vs. T_J

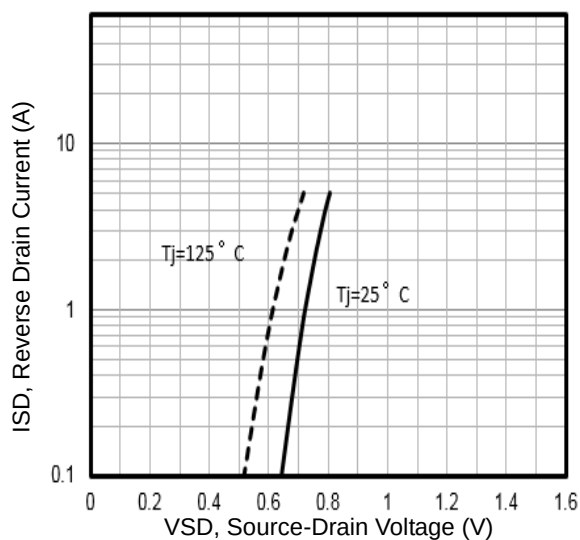


Fig5. Typical Source-Drain Diode Forward Voltage

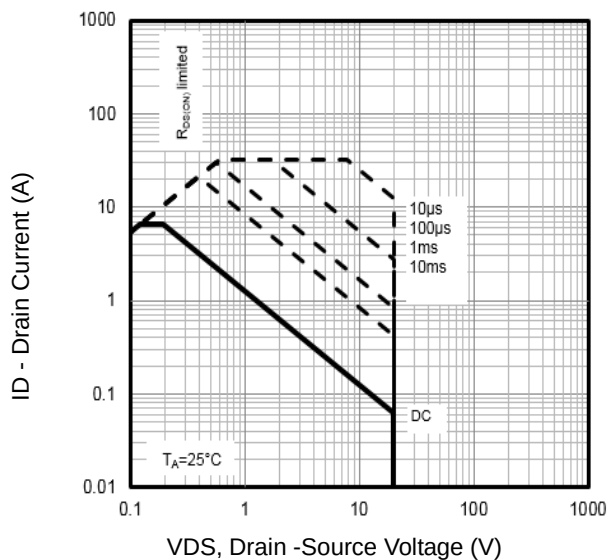


Fig6. Maximum Safe Operating Area

Typical Characteristics

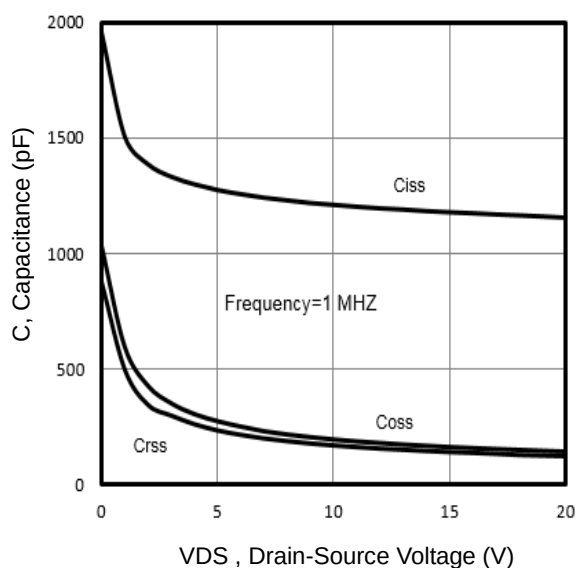


Fig7. Typical Capacitance Vs. Drain-Source Voltage

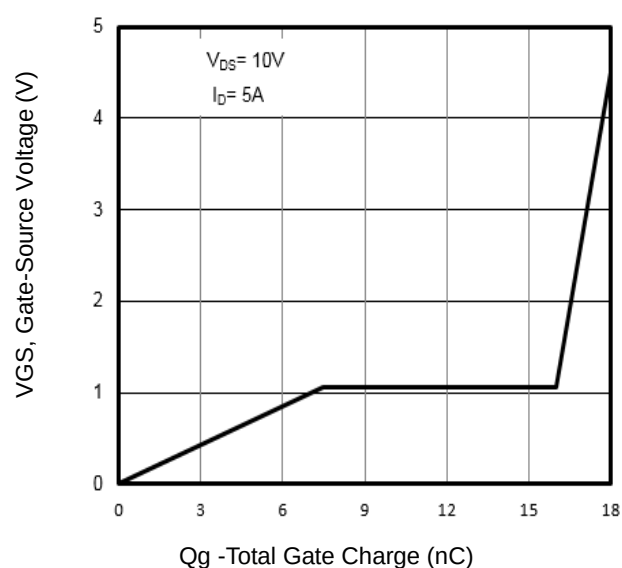


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

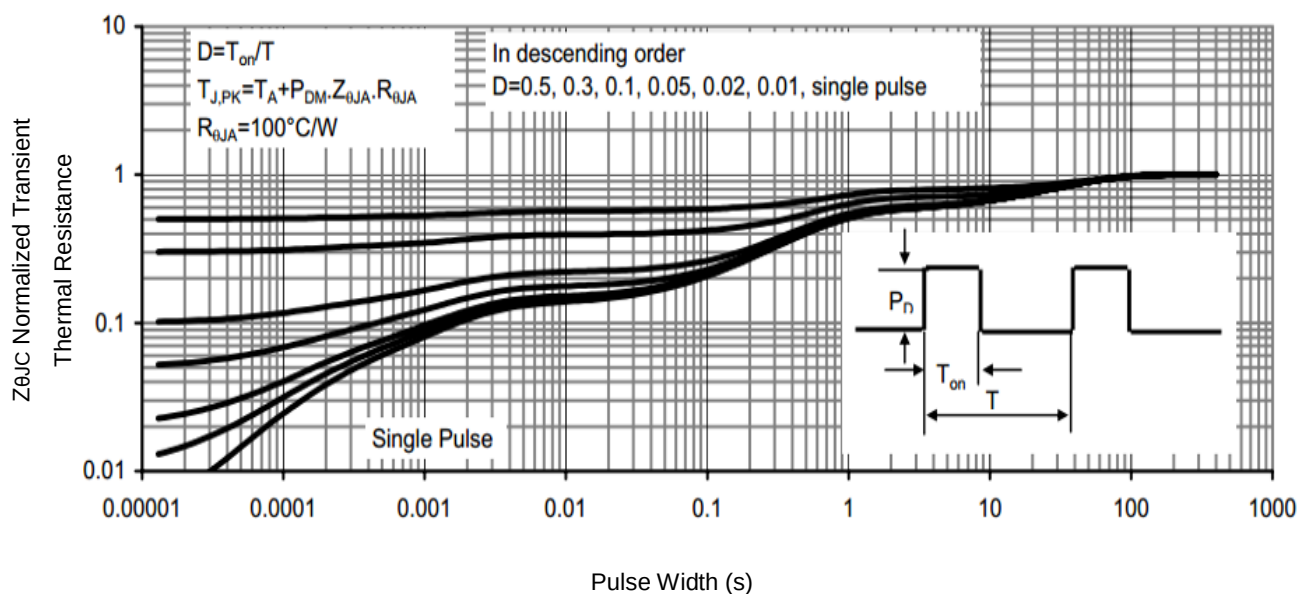


Fig9. Normalized Maximum Transient Thermal Impedance

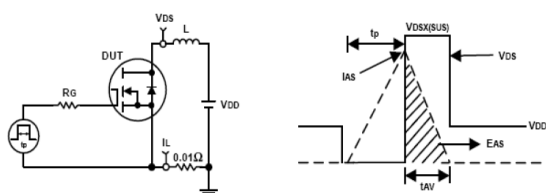


Fig10. Unclamped Inductive Test Circuit and waveforms

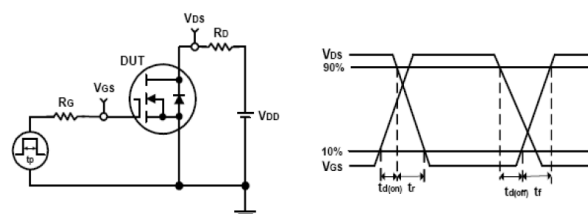
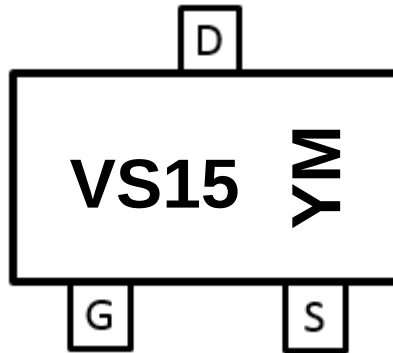


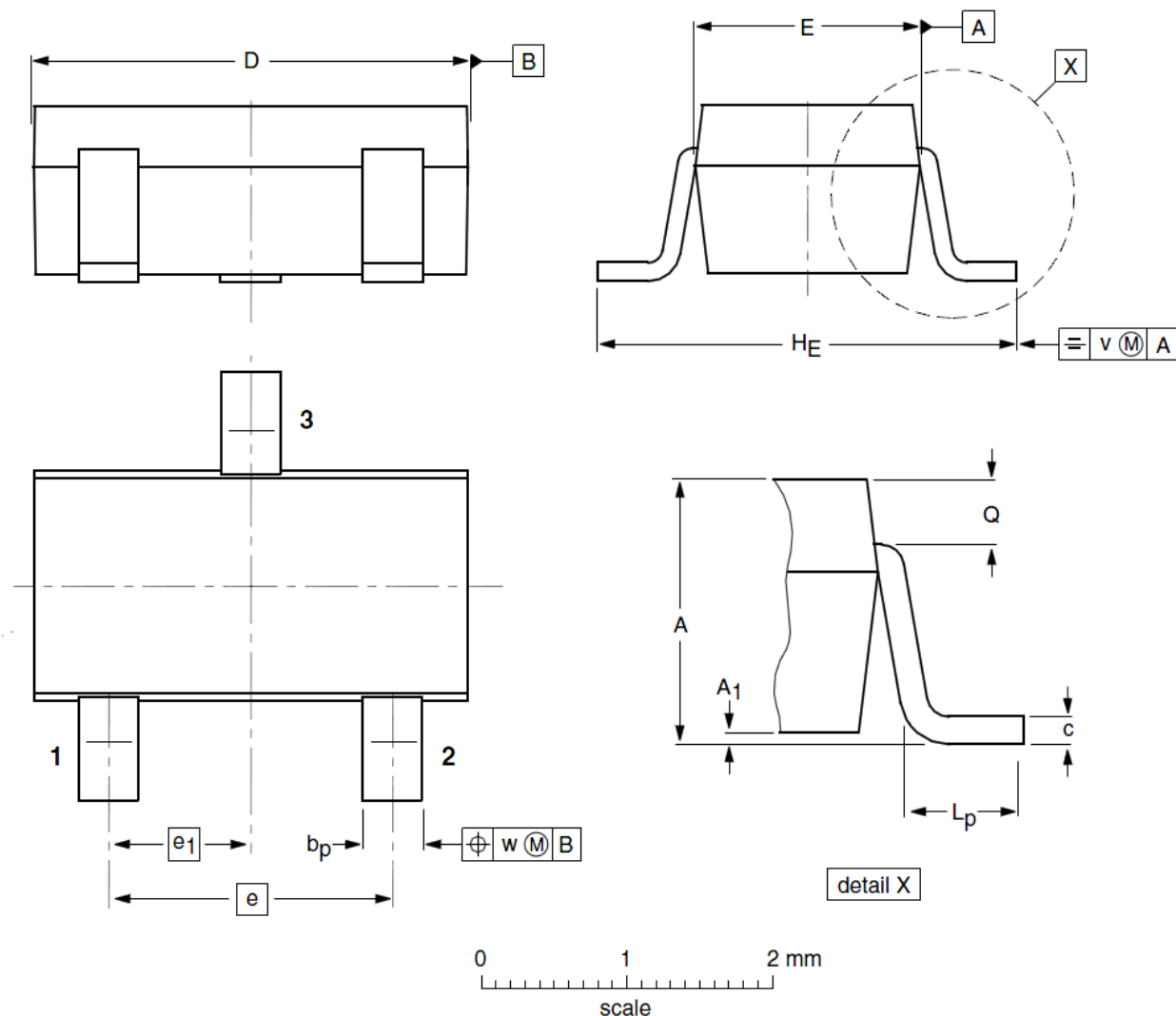
Fig11. Switching Time Test Circuit and waveforms

Marking Information

VS15: Part Number

YM: Date Code, Y means assembly year, M means assembly month

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	--

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