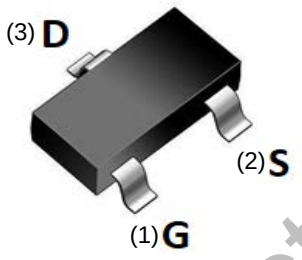
WG2N15

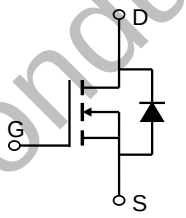
SOT-23-3L

RoHS COMPLIANT



Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg=18nC (Typ.).
- ☐ BVDSS=150V,I_D=7.5A
- ☐ $R_{DS(on)}$: 225mΩ (Typ) @V_G=10V
- ☐ 100% Avalanche Tested



Schematic diagram

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

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	7.5	A
Drain Current-Pulsed (Note 1)	I_{DM}	15	A
Maximum Power Dissipation	P_D	2.5	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

Thermal Characteristic

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	62.5	℃/W

Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	150	160	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=150V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1		3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=3 A	-	225	288	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=1A	-	8	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{lss}	V_{DS}=25V,V_{GS}=0V, F=1.0MHz	-	952	-	PF
Output Capacitance	C_{oss}		-	55	-	PF
Reverse Transfer Capacitance	C_{rss}		-	36	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V,I_D=3A,R_L=15Ω V_{GS}=10V,R_G=2.5Ω	-	10	-	nS
Turn-on Rise Time	t_r		-	15	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	18	-	nS
Turn-Off Fall Time	t_f		-	6	-	nS
Total Gate Charge	Q_g	V_{DS}=50V,I_D=3A, V_{GS}=10V	-	18		nC
Gate-Source Charge	Q_{gs}		-	1	-	nC
Gate-Drain Charge	Q_{gd}		-	4	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=3.0 A	-	-	1.2	V
Diode Forward Current (Note 2)	I_S		-	-	7.5	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to product

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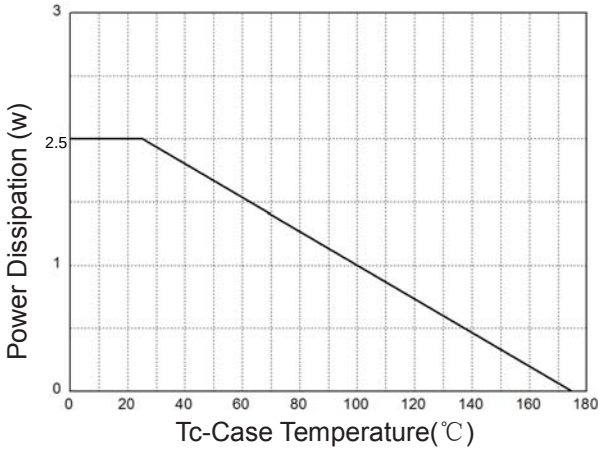
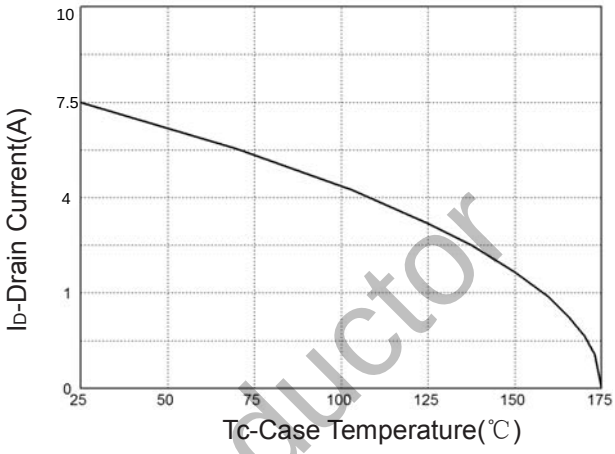
Typical Characteristics

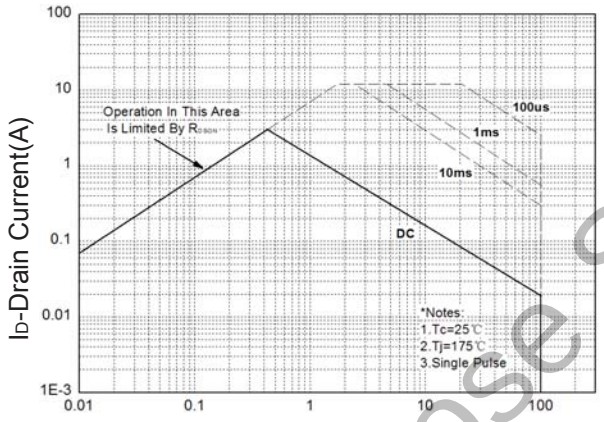
Power Dissipation



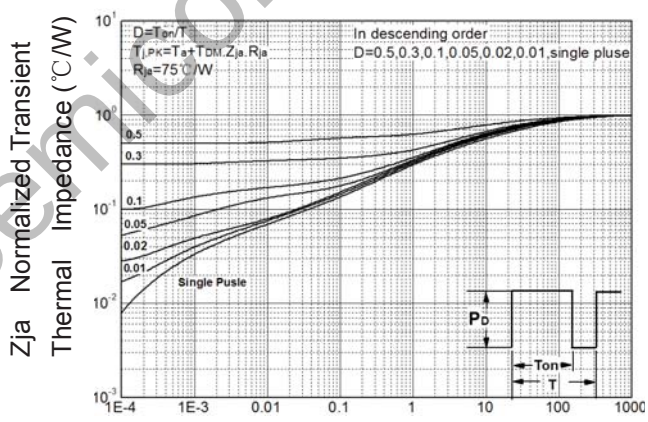
Drain Current



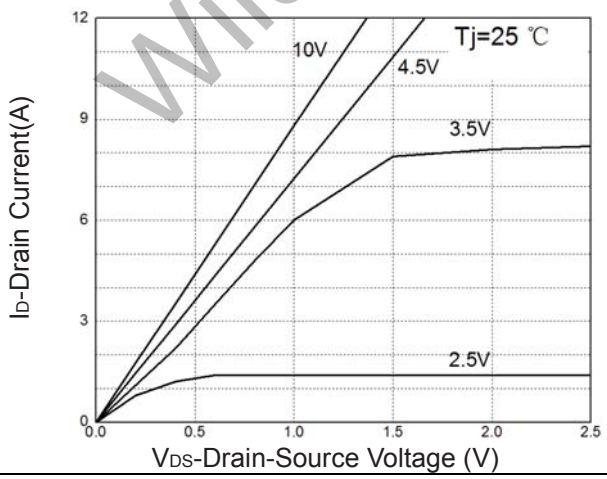
Safe Operation Area



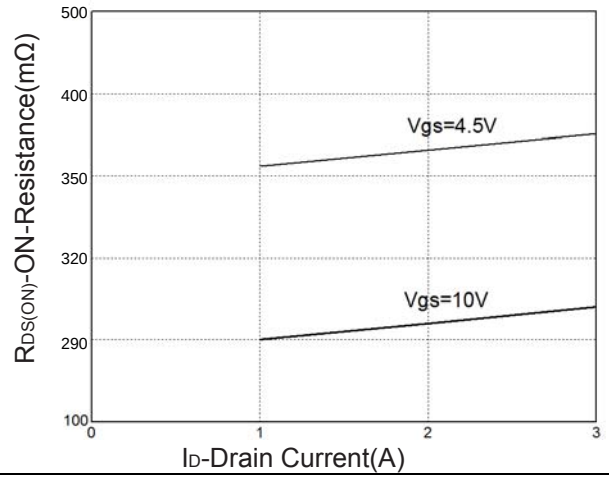
Thermal Transient Impedance



Output Characteristics



Drain-Source On Resistance



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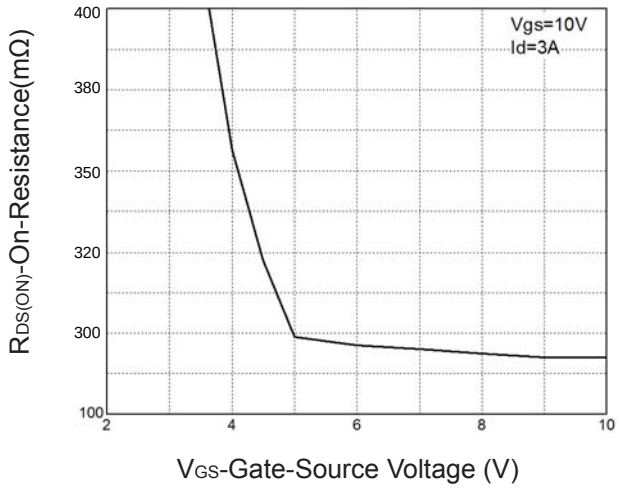
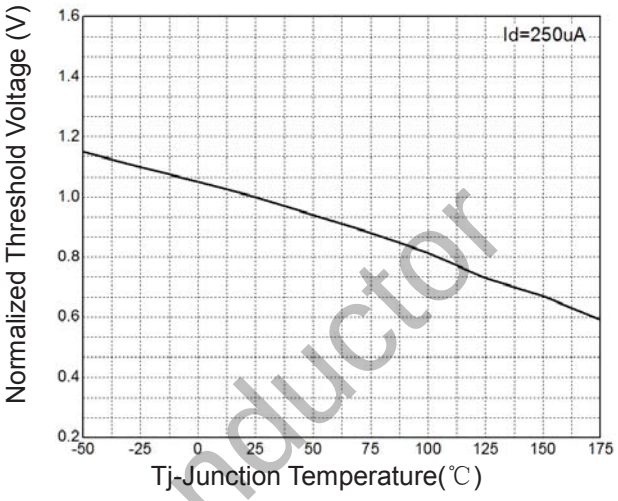
Typical Characteristics (Continued)

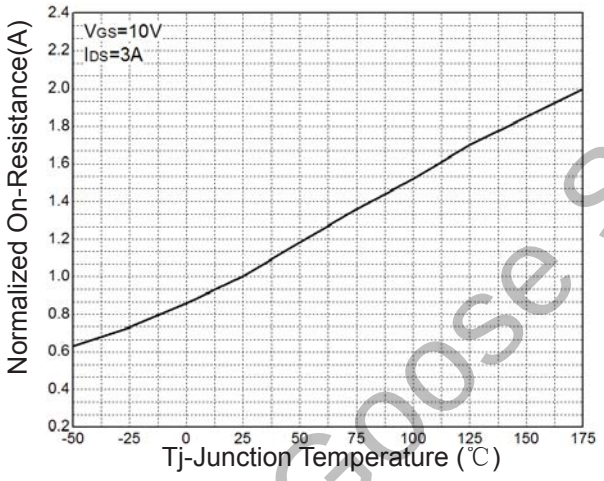
Gate-Source On Resistance



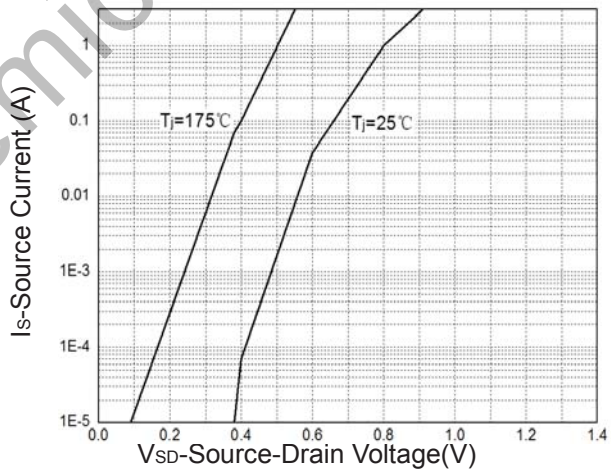
Gate Threshold Voltage



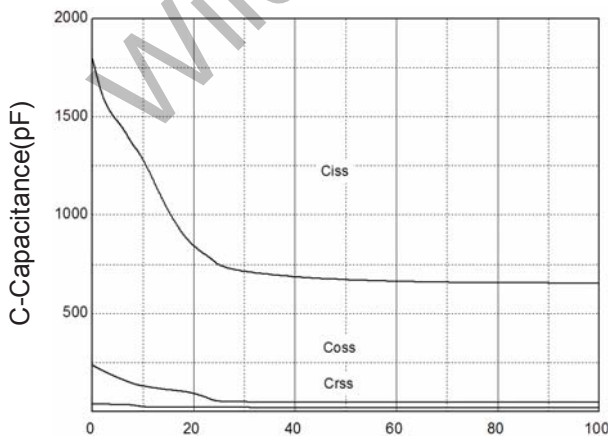
On-Resistance vs.Temperature



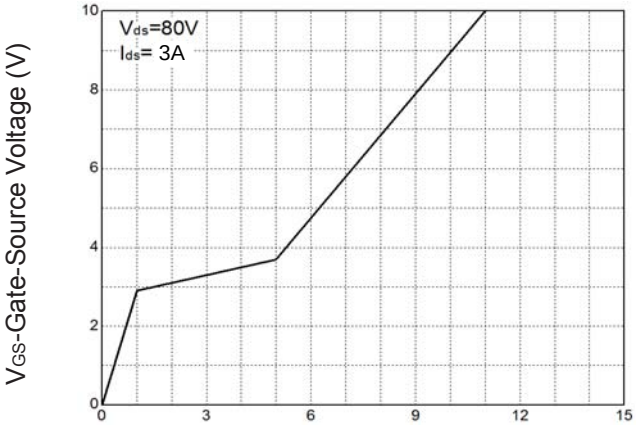
Source-Drain Diode Forward



Capacitance Characteristics



Gate Charge Characteristics



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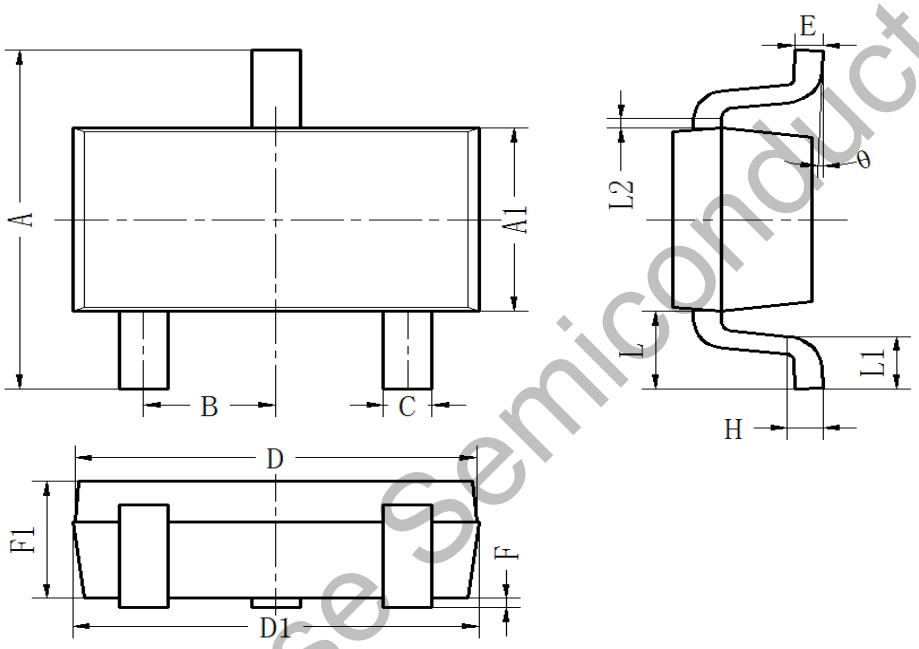
Package Dimension

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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