WANSEMI
万芯半导体

WX028N11LL

N-channel Enhancement Mode Power MOSFET

TOLL/NMOS/110V/±20V/3.0V/200A/2.8mΩ

Rev0.1

110V, 2.8mΩ, 200A, N-channel MOSFET

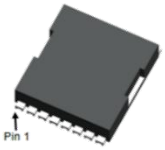
1.Features

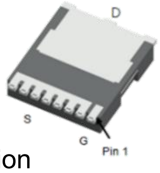
V_{DS}	$R_{DS(on)}$ Typ.	I_D Max.
110V	2.8mΩ @10V	200A

- Excellent RDS(ON) and Low Gate Charge
- 100% UIS Tested
- 100% ΔVds Tested
- 100% RG Tested
- Halogen-free; RoHS-compliant

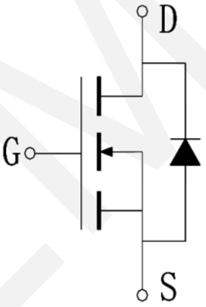
2.Applications

- Load Switch
- PWM Application
- Power Management





TOLL
Pin Description



Schematic Diagram

3.Package Marking and Ordering Information

Part no.	Package	Marking	PCS/Reel	PCS/CTN.
WX028N11LL	TOLL	028N11	2,000	16,000

4.Absolute Max Ratings at Ta=25℃ (Note1)

Parameter		Symbol	Maximum	Units
Drain to Source Voltage		V_{DSS}	110	V
Gate to Source Voltage		V_{GSS}	±20	V
Drain Current (DC)	T C = 25°C	I_D	200	A
	T C = 100°C	I_D	126	A
Drain Current (Pulse), PW≤300μs		I_{DM}	800	A
Avalanche Energy, Single Pulsed		E_{AS}	942	mJ
Total Dissipation	T C = 25°C	P_D	168	W
	T C = 100°C	P_D	67	W
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	-55 to +150	℃

Note 1: Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

5.Thermal Resistance Ratings (Note 2)

Parameter	Symbol	Value	Unit
Junction to Ambient	$R_{\theta JA}$	49	℃/W
Junction to case	$R_{\theta JC}$	0.7	℃/W

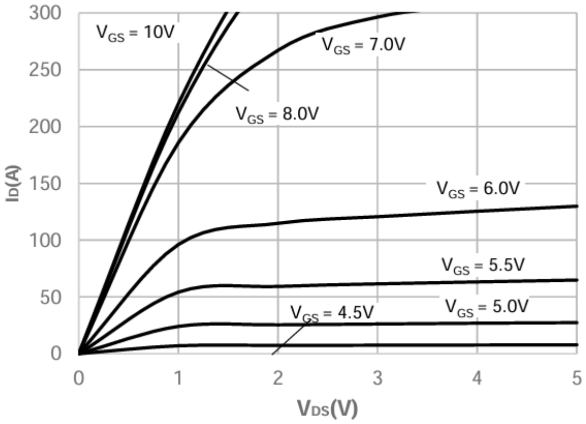
Note 2：When mounted on 1 inch square copper board t ≤ 10sec The value in any given application depends on the user's specific board design.

6.Electrical Characteristics at Ta=25℃ (Note 2)

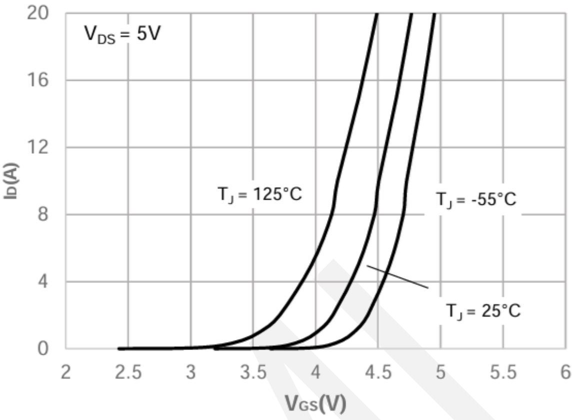
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250μA, V_{GS} = 0V	110	-	-	V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS} =110V, V_{GS} = 0V	-	-	1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=250μA	2.4	3.0	3.7	V
Static Drain to Source On-State Resistance	$R_{DS(on)}$	I_D = 20A, V_{GS} = 10V	-	2.8	3.5	mΩ
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=55V, Frequency=1.0MHz	-	6718	-	nF
Output Capacitance	C_{oss}		-	947	-	pF
Reverse Transfer Capacitance	C_{rss}		-	28	-	pF
Turn-on Delay Time	$t_{d(on)}$	V_{DS} = 55V,I_D=20A, V_{GS} = 10V, R_{GEN} =6.2Ω	-	32	-	ns
Rise Time	t_r		-	46	-	ns
Turn-off Delay Time	$t_{d(off)}$		-	79	-	ns
Fall Time	t_f		-	48	-	ns
Total Gate Charge	Q_g	V_{DS} = 55V, V_{GS} = 0 to 10V, I_D = 20A	-	101	-	nC
	Q_{gs}		-	34	-	nC
	Q_{gd}		-	24	-	nC
Diode Forward Voltage	V_{FSD}	I_S =20A, V_{GS} = 0	0.5	-	1.2	V

Note 2：Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

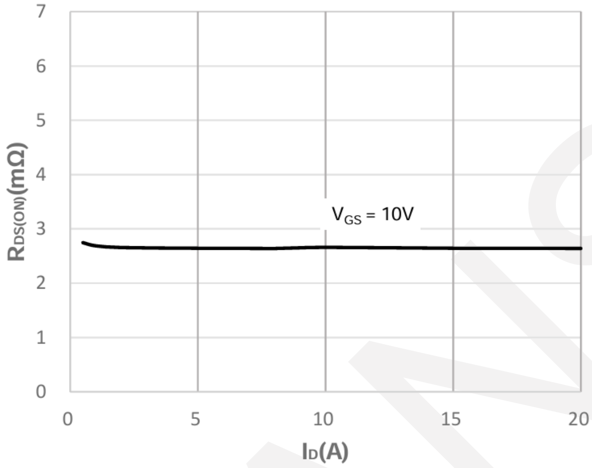
7.Typical electrical and thermal characteristics



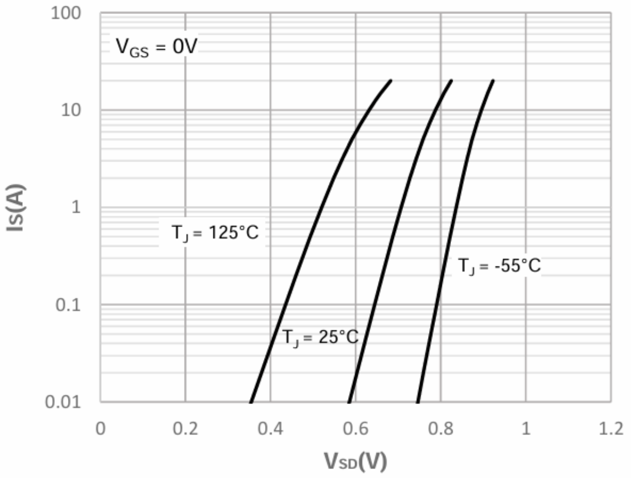
Saturation Characteristics



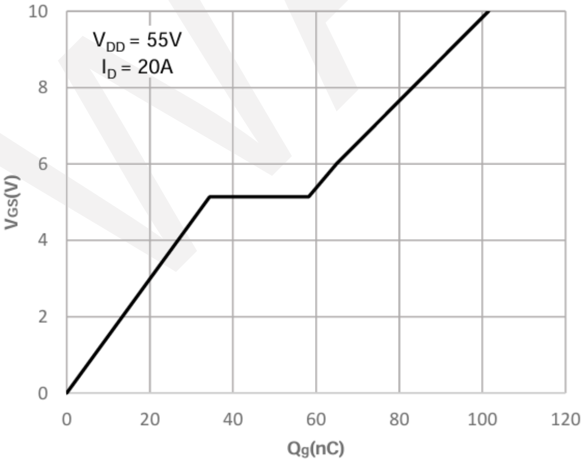
Transfer Characteristics



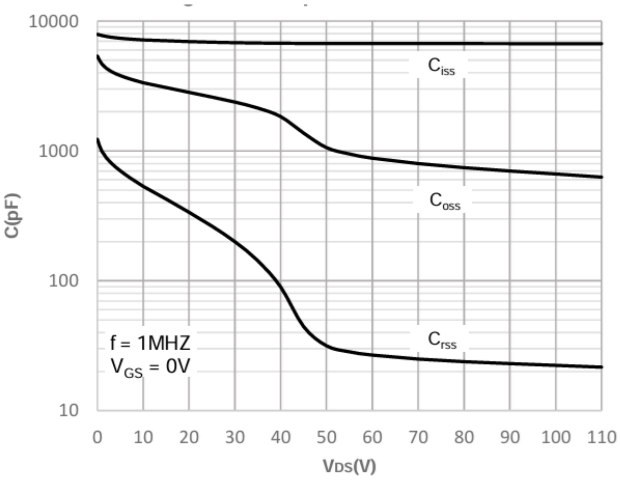
$R_{DS(on)}$vs.Drain Current



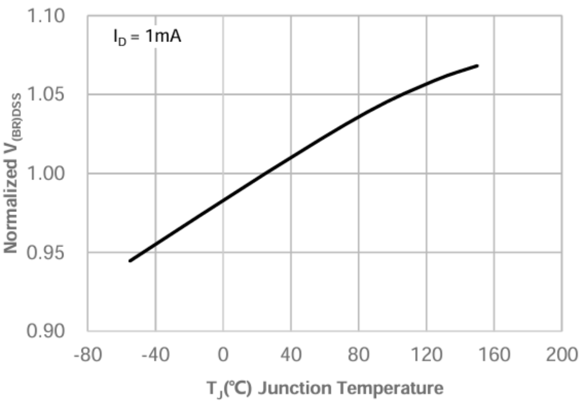
Body-Diode Characteristics



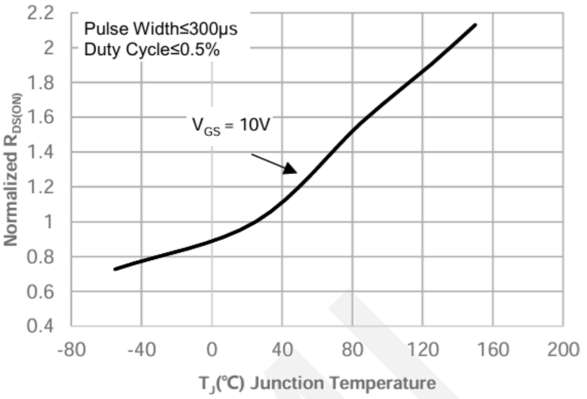
Gate Charge Characteristics



Capacitance Characteristics

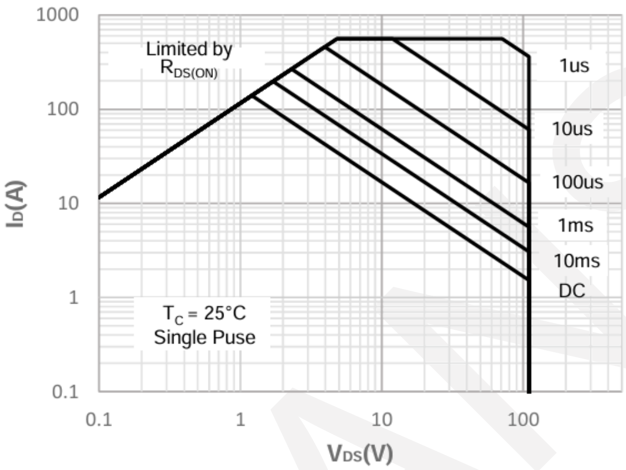


Normalized Breakdown voltage vs. Junction Temperature

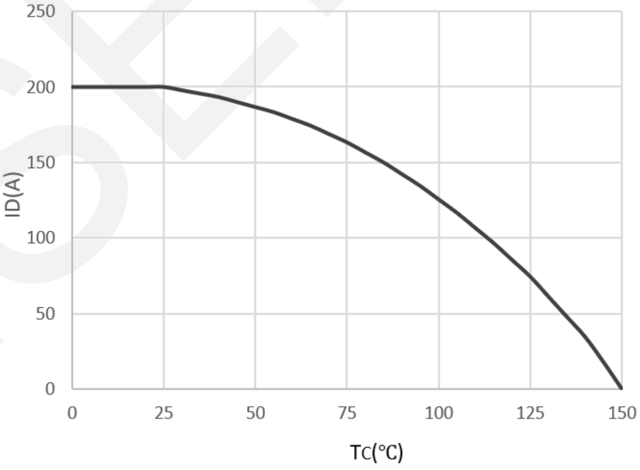


Normalized on Resistance vs.

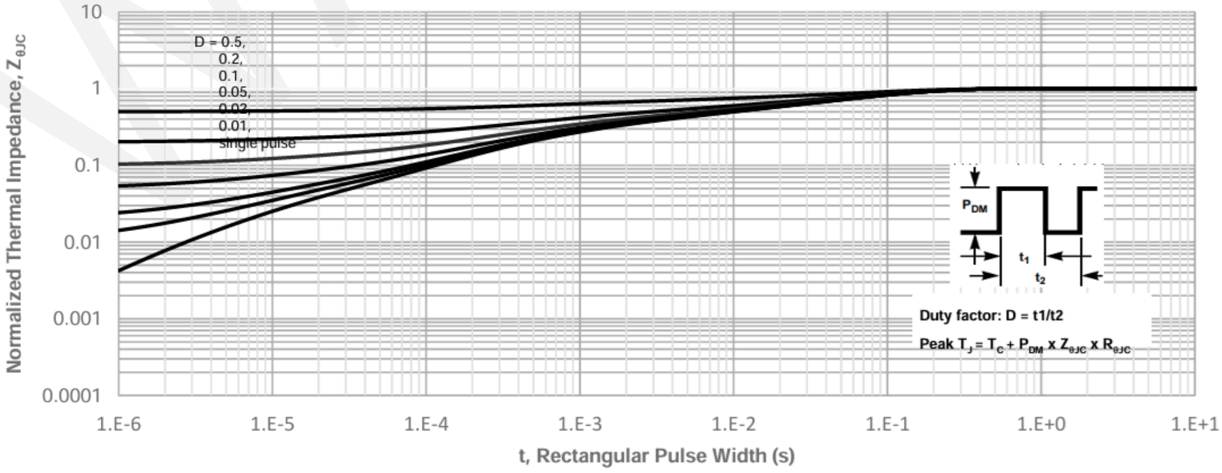
Junction Temperature



Maximum Safe Operating Area

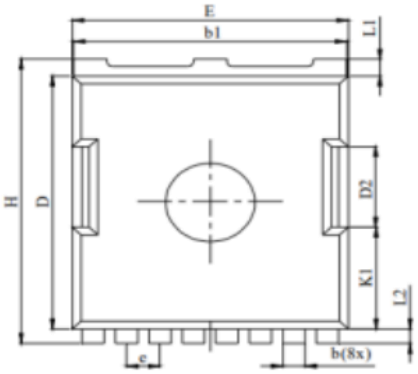


Current De-rating

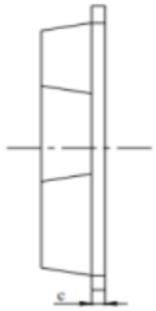


Normalized Maximum Transient Thermal Impedance

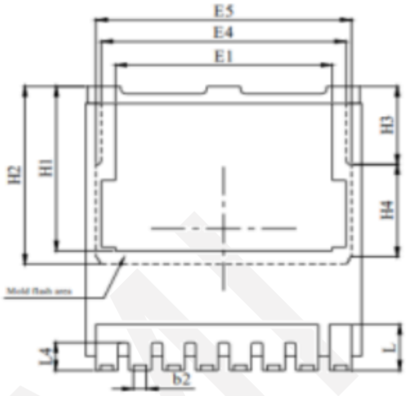
8.Package Dimensions



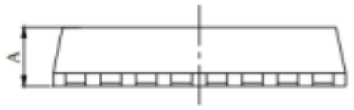
Top View



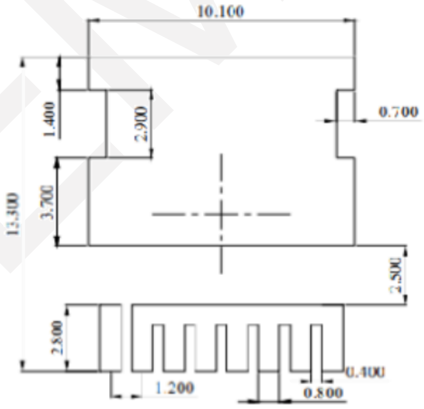
Side View



Bottom View



Front View



DIMENSIONS:MILLIMETERS

DIM.	MILLIMETER		
	MIN	NOM	MAX
A	2.20	2.30	2.50
b	0.70	0.80	0.90
bl	9.70	9.80	9.90
b2	0.42	0.46	0.50
C	0.40	0.50	0.65
D	10.28	10.38	10.58
D2		3.30	
E	9.70	9.90	10.10
E1		7.80	
E4		8.80	
E5		9.20	
e		1.20(BSC)	
H	11.48	11.68	11.88
Hl	6.55	6.75	6.85
H2		7.30	
H3		3.20	
H4		3.80	
K1		4.18	
L	1.70	1.90	2.10
L1		0.70	
L2		0.60	
L4	1.00	1.15	1.30

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