



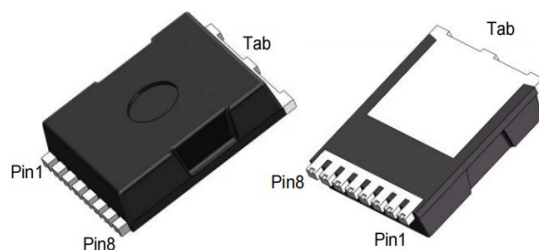
1. Features

- V_{DS} 100V
- I_D 320A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) 1.55m Ω (Typ)

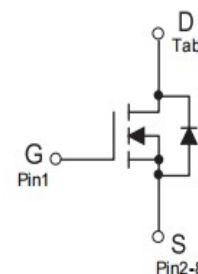
2. Mechanical Data

- Case:Molded Plastic,TOLL .
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Plated Leads Solderable perMIL-STD-750,Method-2026.
- Marking:XN02R0N10LL
- Mounting Position : Any.

TOLL



Pin1 Gate
Pin2-8 Source
Tab Drain



3. Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Parameter		Symbol	Value	UNIT
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25^\circ\text{C}$	$I_{D \text{ pulse}}$	320	A
	$T_C = 100^\circ\text{C}$		208	
Drain Current-Pulsed		I_{DM}	1200	A
Power Dissipation		P_{tot}	313	W
Avalanche Energy, Single Pulsed(L=0.5mH,Rg=25 Ω)		E_{AS}	2601	mJ
Thermal Resistance from Junction to Lead		$R_{\theta JC}$	0.4	$^\circ\text{C/W}$
Thermal Resistance from Junction to Ambient		$R_{\theta JA}$	46	$^\circ\text{C/W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~ +150	$^\circ\text{C}$

**4. Electrical Characteristics**

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Test Condition		Min	Typ	Max	Units
Off Characteristics							
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA		100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =100V V _{GS} =0V	T _J =25°C			1	μA
			T _J =125°C			10	
Gate-source leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V				±100	nA
On characteristics							
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =50A			1.55	2	mΩ
Forward Transconductance	g _{fs}	V _{DS} =5V , I _D =50A		125			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA		2	3	4	V
Dynamic Characteristics							
Input capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f =1MHz			14510		pF
Output capacitance	C _{oss}				1265		pF
Reverse transfer capacitance	C _{rss}				189		pF
Gate Resistance	R _g	f=1MHz			1.6		Ω
Switching Characteristics							
Gate charge total	Q _g	V _{DS} = 50 V, I _D = 50 A, V _{GS} = 10 V			165		nC
Gate-Source Charge	Q _{gs}				67		nC
Gate-Drain Charge	Q _{gd}				35		nC
Turn-on delay time	t _{d(on)}	V _{DD} = 50 V, V _{GS} = 10V, R _L = 3Ω			37		nS
Turn-on rise time	t _r				112		nS
Turn-off delay time	t _{d(off)}				85		nS
Turn-off fall time	t _f				115		nS
Source-Drain Diode characteristics							
Body Diode Voltage	V _{SD}	I _{SD} =50A, V _{GS} =0V				1.2	V



5. Rating And Characteristic Curves

Fig1: Output Characteristics

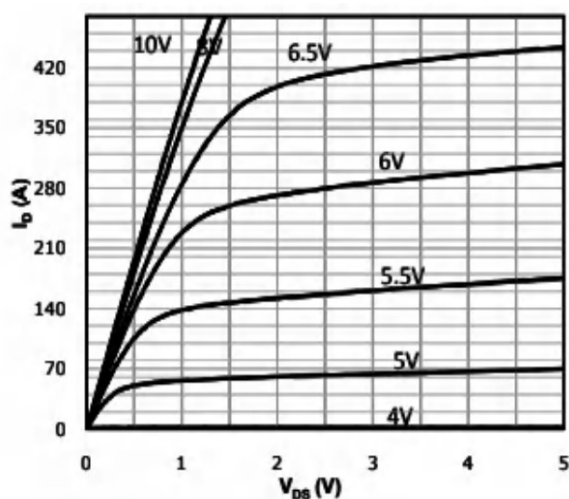


Fig2: Transfer Characteristics

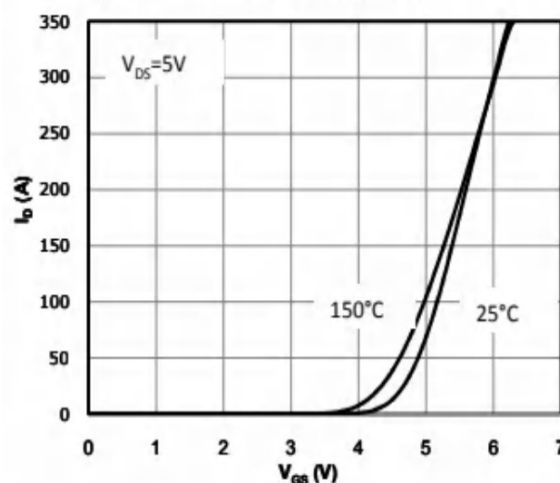


Fig.3 Capacitance Characteristics

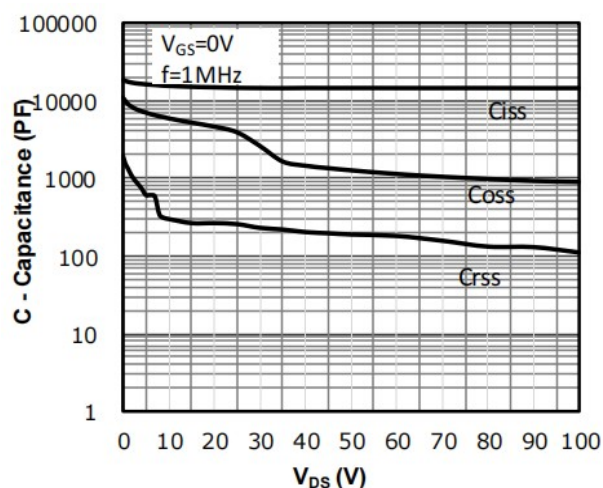


Fig.4 Rds(on) vs. Temperature

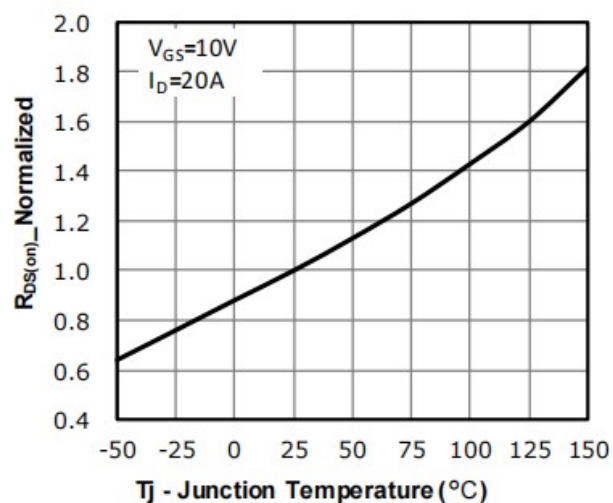


Fig.5 Rdson Vs Ids Characteristics($T_c = 25^\circ C$)

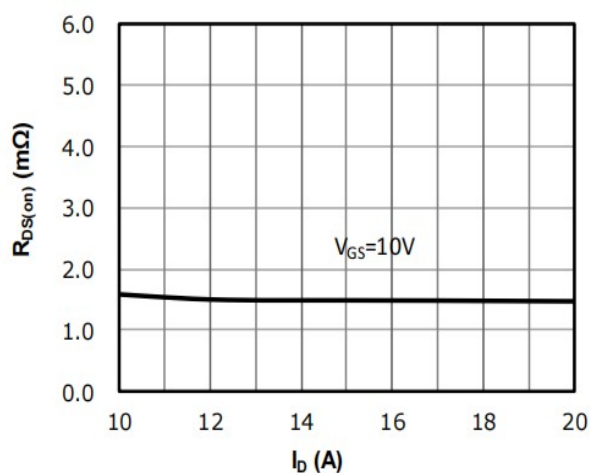


Fig.6 Gate Charge Characteristics

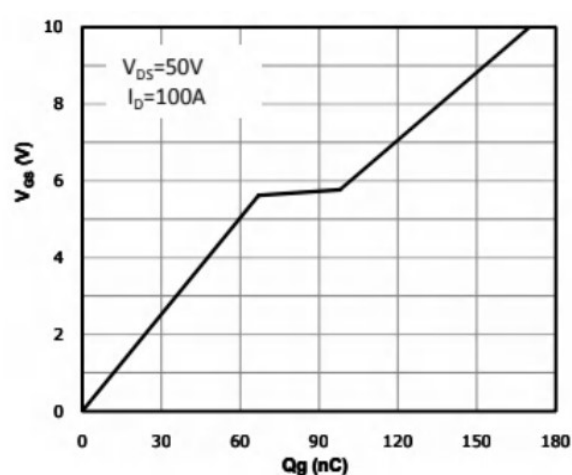




Fig.7 Rds(on) vs Gate Voltage

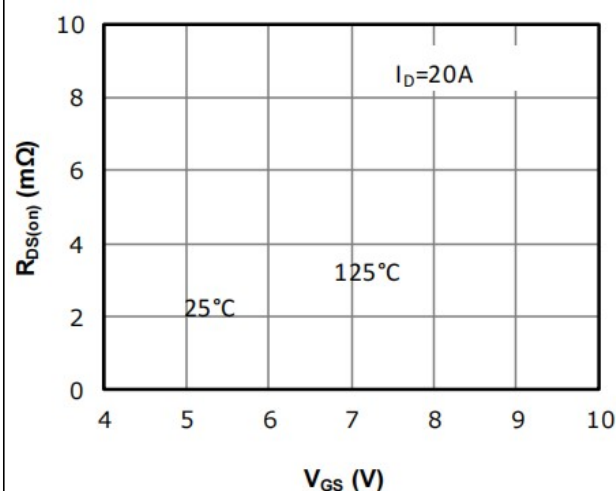


Fig.8 Body-diode Forward Characteristics

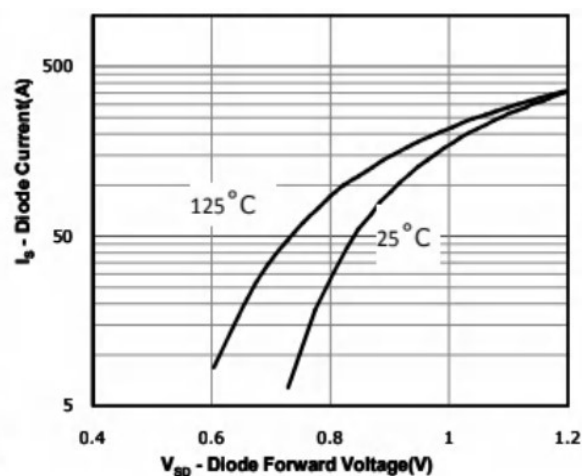


Fig.9 Power Dissipation

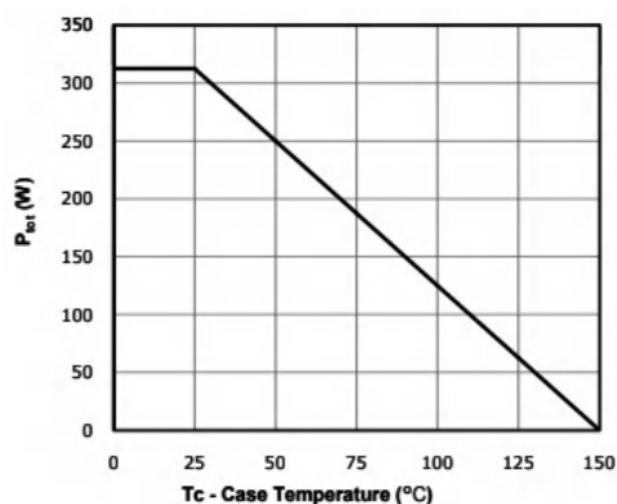


Fig.10 Drain Current Derating

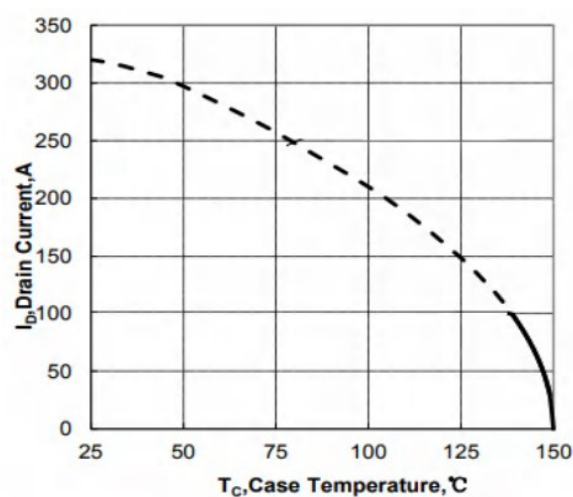


Fig.11 Safe Operating Area

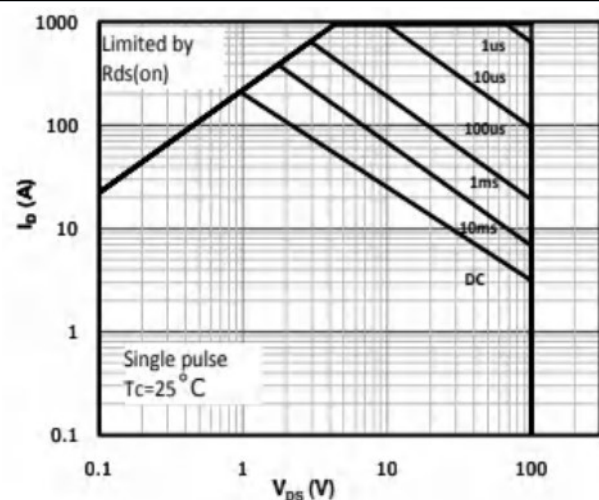
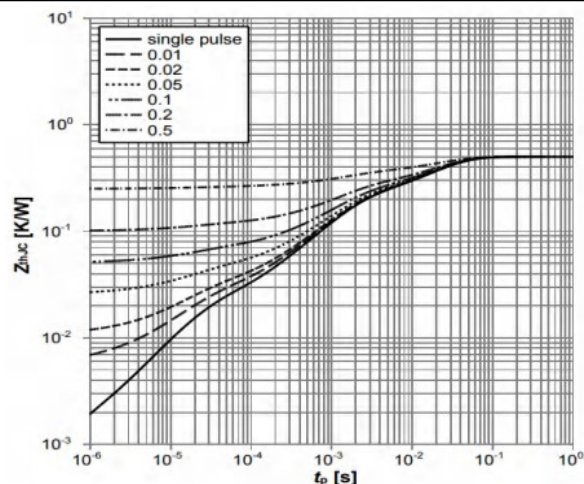
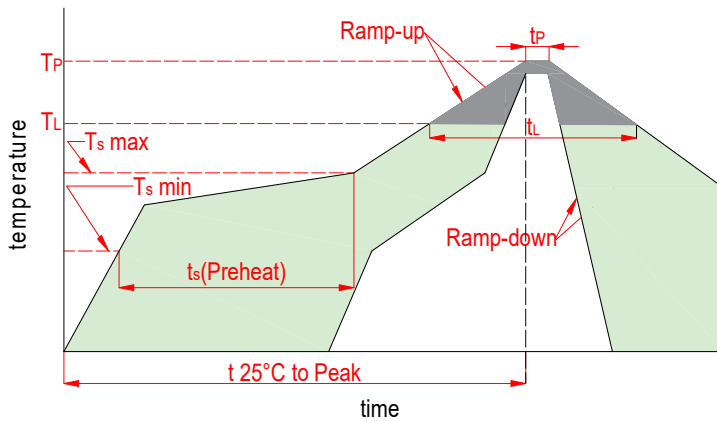


Fig.12 Max. Transient Thermal Impedance



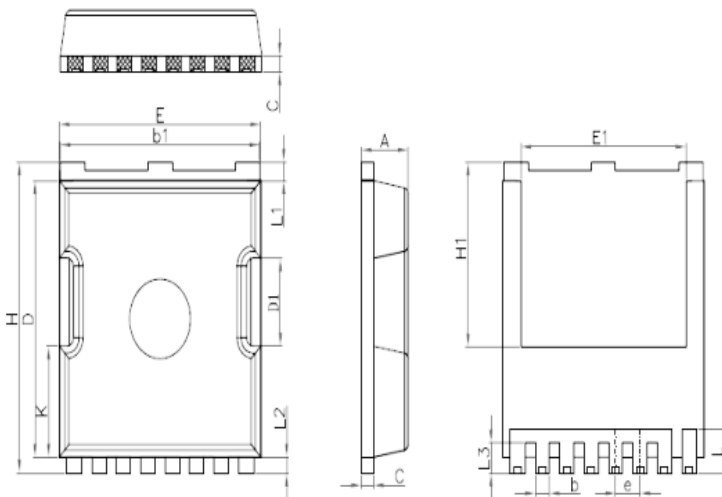


6. Soldering Parameters



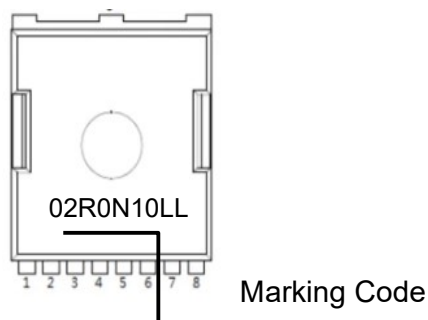
Reflow Condition		Lead-free
Pre Heat	Temp. min($T_s(\min)$)	150℃
	Temp. max($T_s(\min)$)	200℃
	Time(min to max)(t_s)	60~180s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
$T_s(\max)$ to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+0/-5} ℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_P)		8 minutes max
Do not exceed		260℃

7. Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.087	0.094	2.20	2.40
b	0.024	0.031	0.60	0.80
b1	0.382	0.390	9.70	9.90
C	0.016	0.024	0.40	0.60
D	0.407	0.411	10.35	10.45
D1	0.126	0.134	3.20	3.40
E	0.386	0.394	9.80	10.00
e	0.045	0.049	1.15	1.25
H	0.457	0.465	11.60	11.80
L1	0.024	0.031	0.60	0.80
L2	0.020	0.028	0.50	0.70

8. Part Marking System





Important Notice and Disclaimer

- Reproducing and modifying information of the document is prohibited without from XINNUO.
- XINNUO reserves the right to make changes to this document and its products and specifications.
- XINNUO disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- XINNUO does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the here in document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. XINNUO makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown her are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify XINNUO for any damages resulting from such improper use or sale.
- Since XINNUO uses lot number as the tracking base, please provide the lot number for tracking when complaining.