

Features

- $V_{DS}=100V, I_D=80A$
- $R_{DS(ON)}=9m\Omega$ (TYP.) $V_{GS}=10V$
- Reliable and Rugged
- Avalanche Rated
- Low On-Resistance
- High Current Capability

Applications

- Load Switch
- Power management in portable/desktop PCs
- DC/DC conversion

Ordering Information

Device	package	Device Marking	Package Qty.
LN85N10E2	TO-252	**	2500/PCS

Absolute Maximum Ratings ($T_C=25^\circ C$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage ($V_{GS}=0V$)	V_{DS}	100	V
Gate-Source Voltage ($V_{GS}=0V$, static)	V_{GS}	±20	V
Continuous Drain Current ($T_C=25^\circ C$)	I_D	80	A
Continuous Drain Current ($T_C=100^\circ C$)		50	A
Pulse Drain Current	I_{DM}	120	A
Maximum Power Dissipation	P_D	60	W
Maximum Power Dissipation		0.4	W/ $^\circ C$
Single pulse avalanche energy	E_{AS}	70	mJ
Operating, Storage Temperature Range	T_J, T_{STG}	-55~175	$^\circ C$

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
Gate -Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		4	V
Drain-Source On-state Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	-	9	11	m Ω
Body Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=1A$	-	0.85	1.2	V

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	-	2.5	-	$^\circ C/W$

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=15V$	-	3500	-	pF
Output capacitance	C_{oss}	$V_{GS}=0V$	-	600	-	
Reverse transfer capacitance	C_{rss}	$f=1MHz$	-	29	-	
Gate Resistance	R_g	$f=1MHz$	-	1.5	-	Ω
Total Gate Charge	Q_g	$V_{DS}=15V$	-	23	-	nC
Gate Source Charge	Q_{gs}	$V_{GS}=10V$	-	7	-	
Gate Drain Charge	Q_{gd}	$I_D=20A$	-	4.5	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=10V$	-	10	-	ns
Rise time	t_r	$V_{DS}=15V$	-	8	-	
Turn-off delay Time	$t_{d(off)}$	$R_L=0.75\Omega$	-	30	-	
Fall time	t_f	$R_G=3\Omega$	-	5	-	
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=20A$	-	22	-	ns
Reverse Recovery Charge	Q_{rr}	$dI/dt=500A/\mu s$	-	11	-	nC

Electrical Characteristics Diagrames

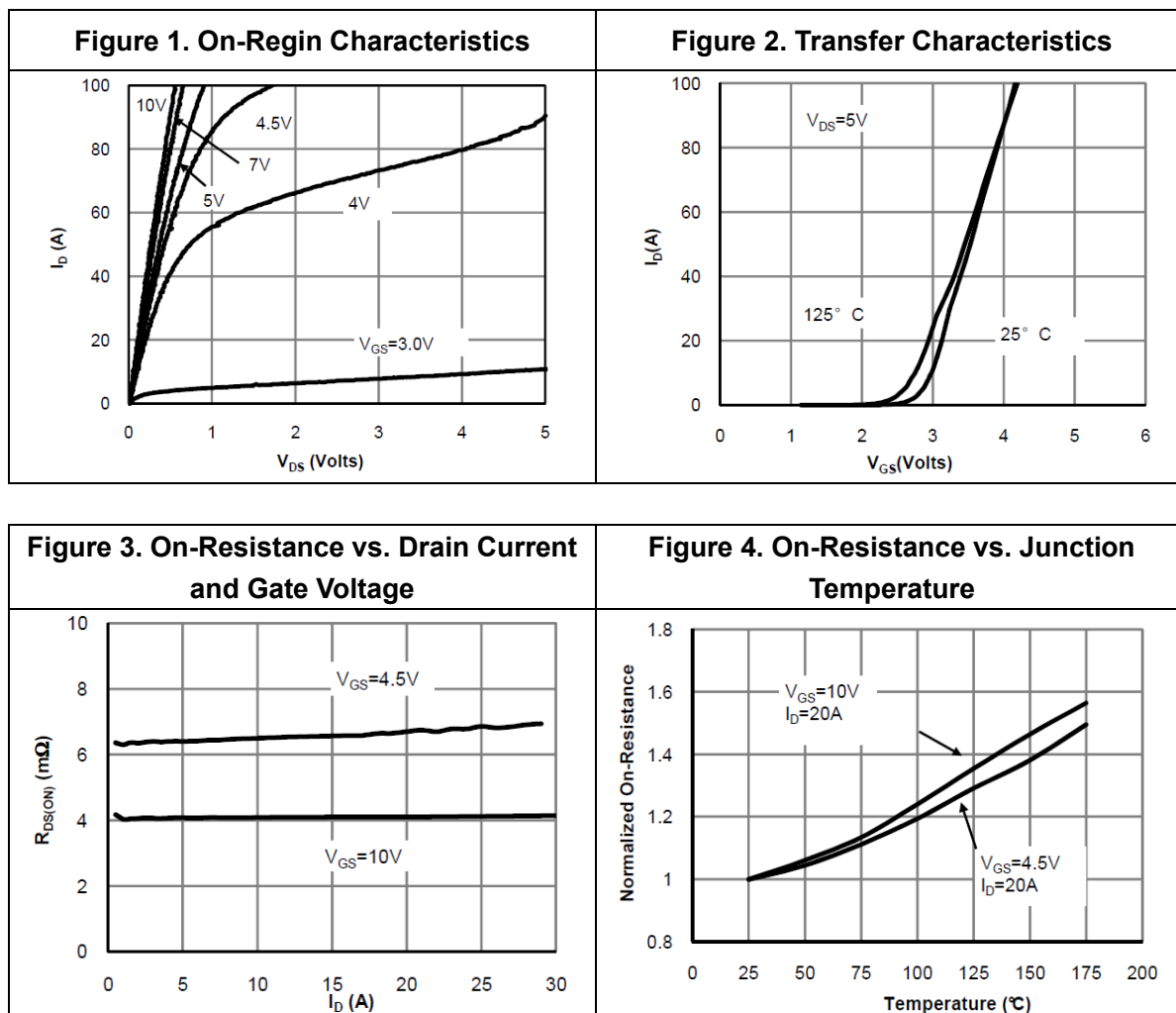


Figure 5. On-Resistance vs. Gate-Source Voltage

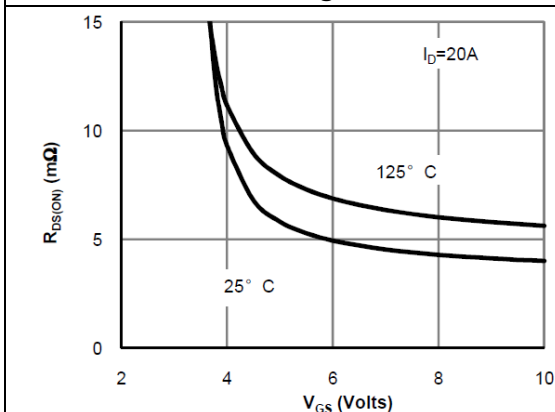


Figure 6. Body-Diode Characteristics

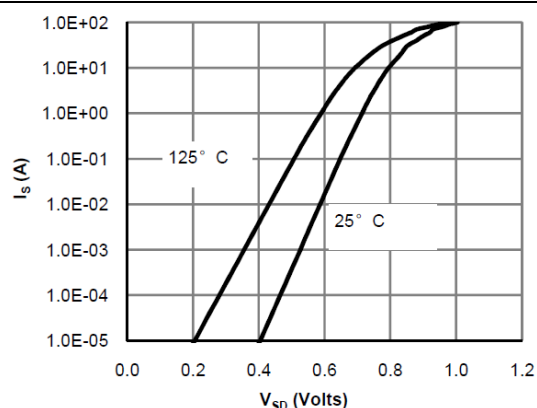


Figure 7. Gate-Charge Characteristics

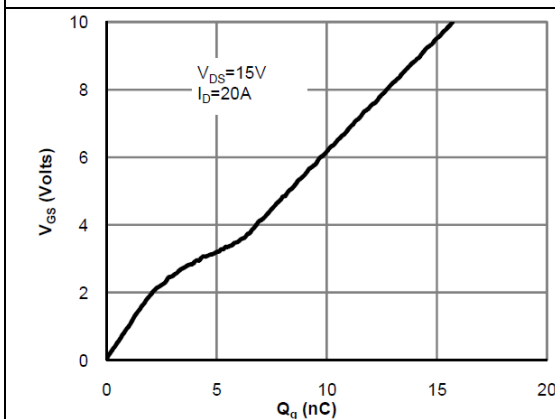


Figure 8. Capacitance Characteristics

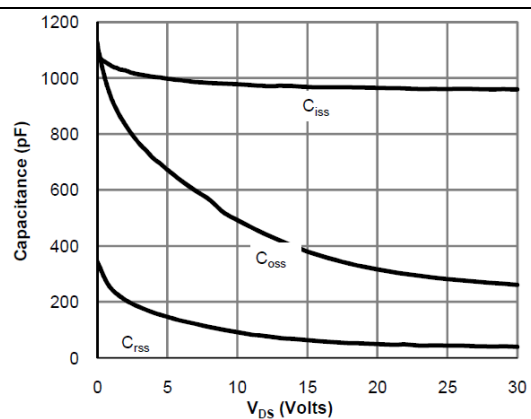


Figure 9. Maximum Forward Biased Safe Operating Area

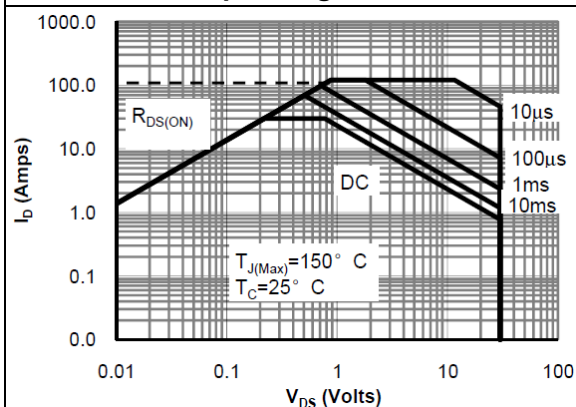
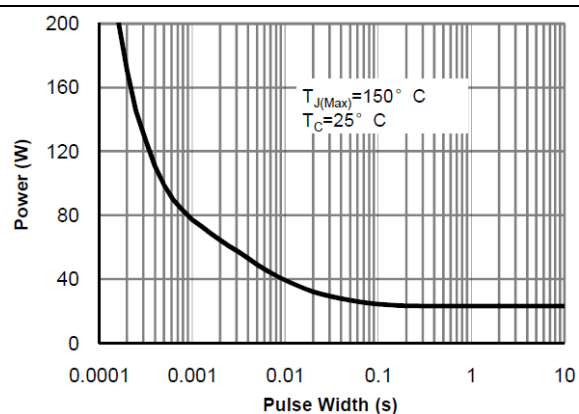


Figure 10. Single Pulse Power Rating Junction-to-Case



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