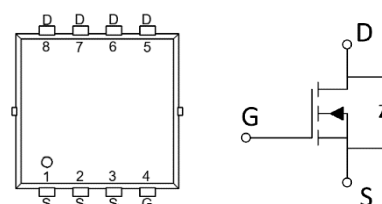
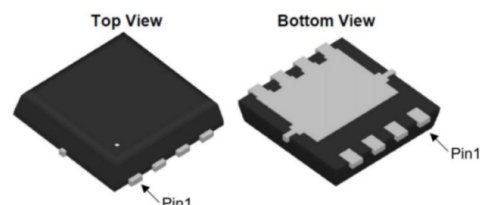


60V_{DS}/±20V_{GS} N-Channel Enhancement Mode MOSFET

Features

- $V_{DS}=60V, I_D=35A$
- $R_{DS(ON)}=10m\Omega$ (TYP.) $V_{GS}=10V$
- $R_{DS(ON)}=20m\Omega$ (TYP.) $V_{GS}=4.5V$
- Reliable and Rugged
- Avalanche Rated
- Low On-Resistance
- High Current Capability

PDFN3333



Applications

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

Ordering Information

Device	package	Device Marking	Package Qty.
G1L9N06	PDFN3333	G1L9N06	5000/PCS

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage ($V_{GS}=0V$)	V_{DS}	60	V
Gate-Source Voltage ($V_{GS}=0V$, static)	V_{GS}	±20	V
Continuous Drain Current ($T_C=25^\circ C$)	I_D	35	A
Continuous Drain Current ($T_C=100^\circ C$)		25	A
Pulsed Drain Current	I_{DM}	120	A
Single Pulsed Avalanche Energy	E_{AS}	83	mJ
Maximum Power Dissipation ($T_C=25^\circ C$)	P_D	6.2	W
Maximum Power Dissipation ($T_C=100^\circ C$)		5.5	W
Operating, Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	-	1.8	-	$^\circ C/W$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	-	62	-	$^\circ C/W$

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	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	1.8	3	V
Drain-Source On-stage Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	-	8	13	m Ω
		$V_{GS}=4.5V, I_D=20A$	-	10	20	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1MHz$	-	3800	-	pF
Output capacitance	C_{oss}		-	430	-	
Reverse transfer capacitance	C_{rss}		-	190	-	
Gate Resistance	R_g	$f=1MHz$	-	1.5	-	Ω
Total Gate Charge	Q_g	$V_{DS}=15V$ $V_{GS}=10V$ $I_D=20A$	-	15.9	-	nC
Gate Source Charge	Q_{gs}		-	2.9	-	
Gate Drain Charge	Q_{gd}		-	3.3	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\Omega$ $R_G=3\Omega$	-	6.3	-	ns
Rise time	t_r		-	2.7	-	
Turn-off delay Time	$t_{d(off)}$		-	18.6	-	
Fall time	t_f		-	4.2	-	

Reverse Diode Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Body Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=1A$	-		1.2	V
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=20A$ $d_i/d_t=500A/\mu s$	-	53		ns
Reverse Recovery Charge	Q_{rr}		-	78		nC

Electrical Characteristics Diagrammes

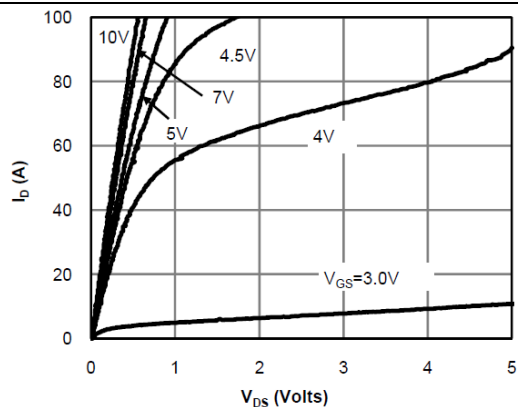
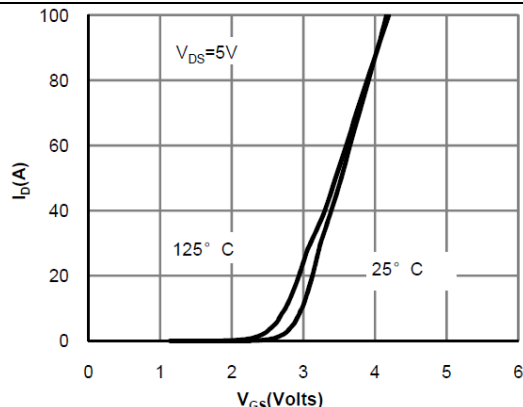
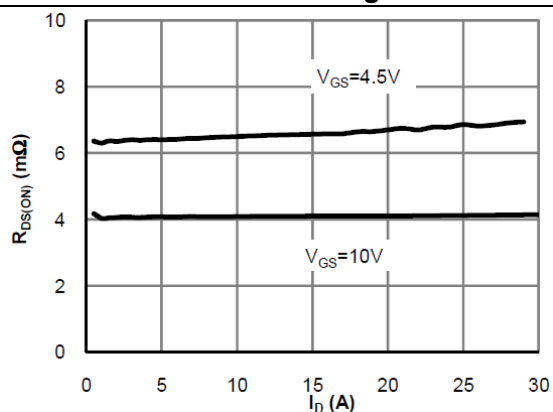
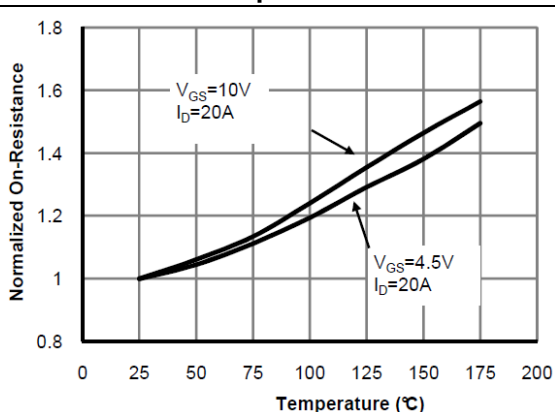
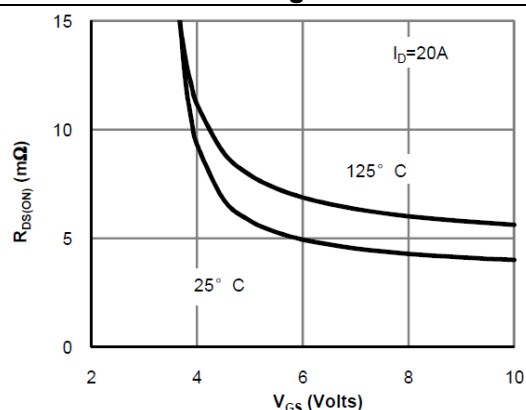
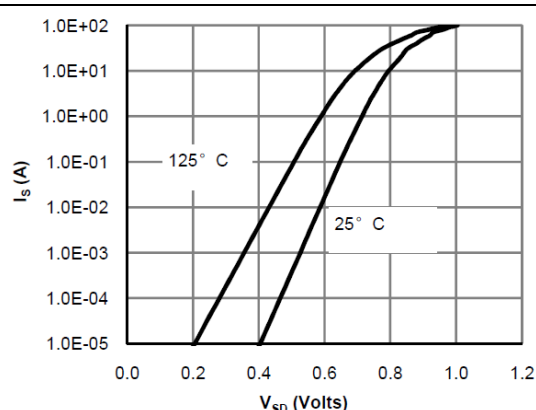
Figure 1. On-Regin Characteristics

Figure 2. Transfer Characteristics

Figure 3. On-Resistance vs. Drain Current and Gate Voltage

Figure 4. On-Resistance vs. Junction Temperature

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

Figure 6. Body-Diode Characteristics


Figure 7. Gate-Charge Characteristics

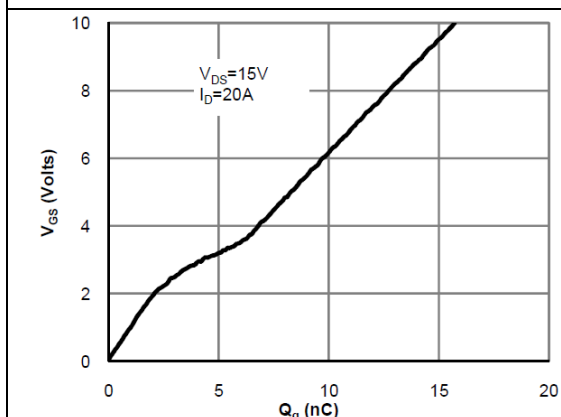


Figure 8. Capacitance Characteristics

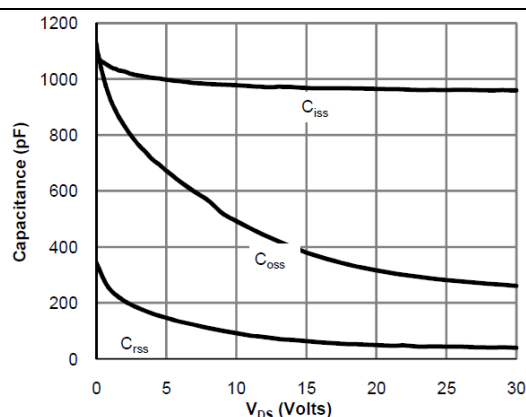


Figure 9. Maximum Forward Biased Safe Operating Area

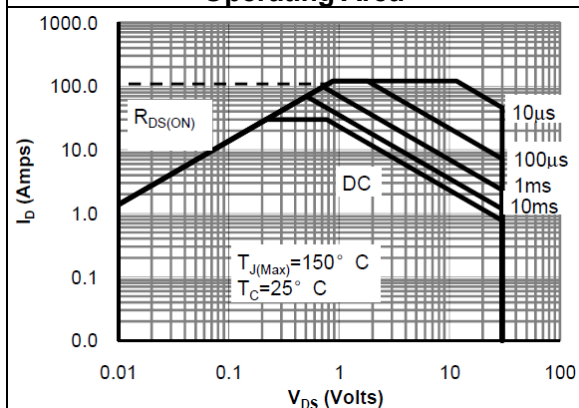


Figure 10. Single Pulse Power Rating Junction-to-Case

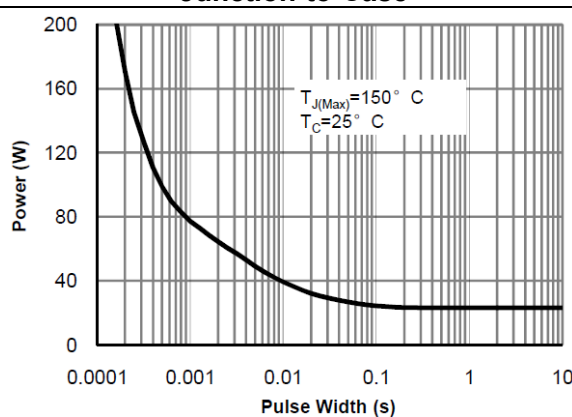


Figure 11. Normalized Maximum Transient Thermal Impedance

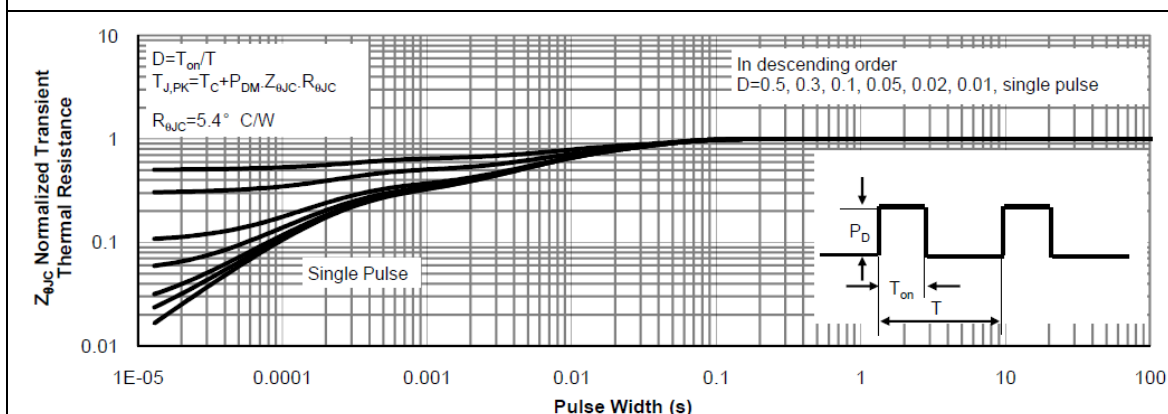


Figure 12. Power De-rating

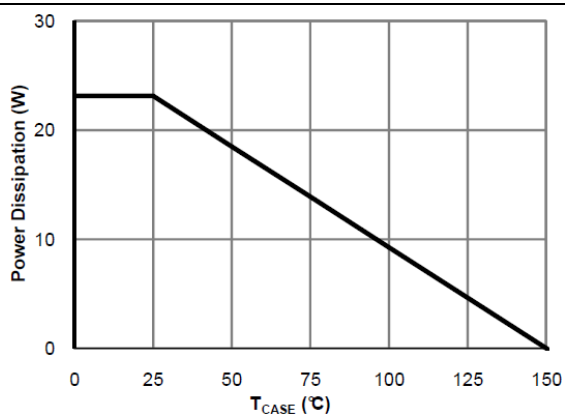


Figure 13. Current De-rating

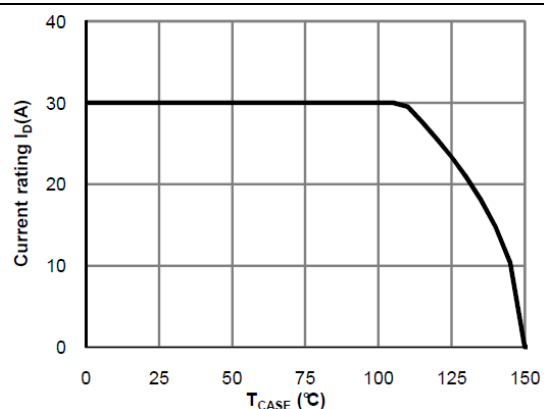


Figure 14. Single Pulse Power Rating Junction-to-Ambient

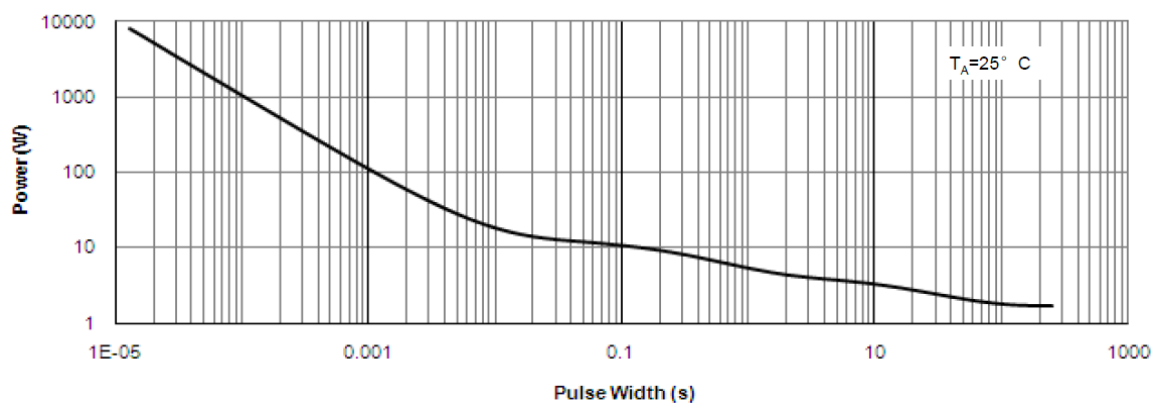
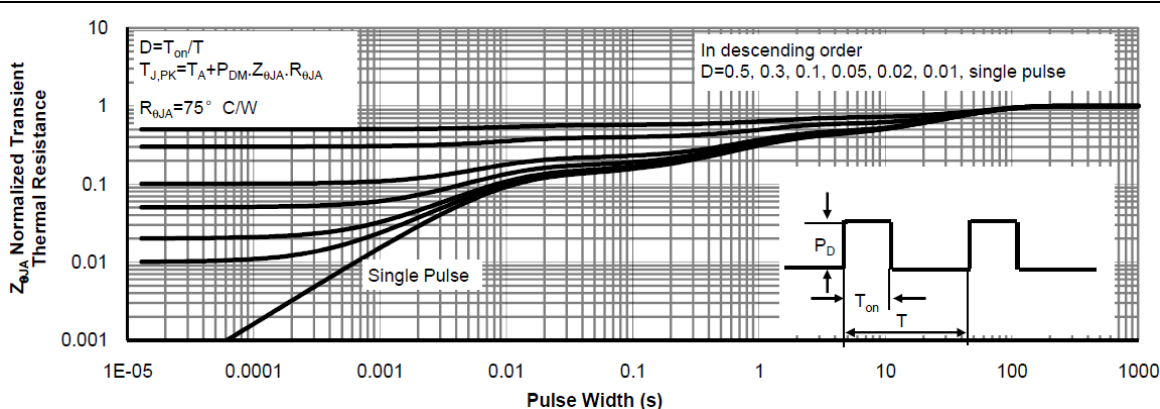
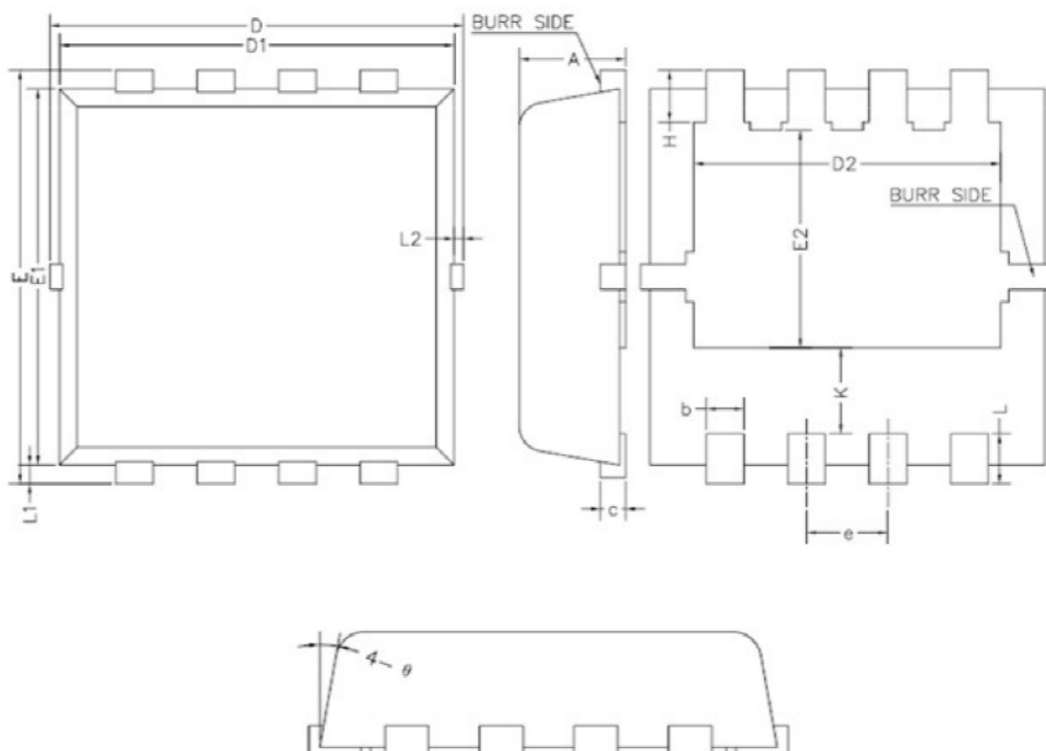


Figure 15. Normalized Maximum Transient Thermal Impedance



Physical Dimensions

PDFN3030



符号	尺寸 (mm)			符号	尺寸 (mm)		
	最小值	典型值	最大值		最小值	典型值	最大值
A	0.70	0.80	0.90	E1	2.90	3.00	3.10
b	0.25	0.30	0.35	E2	1.64	1.74	1.84
c	0.14	0.15	0.20	H	0.32	0.42	0.52
D	3.10	3.30	3.50	K	0.59	0.69	0.79
D1	3.05	3.15	3.25	L	0.25	0.40	0.55
D2	2.35	2.45	2.55	L1	0.10	0.15	0.20
e	0.55	0.65	0.75	L2	-	-	0.15
E	3.10	3.30	3.50	θ	8°	10°	12°

< Copyright >

All the Patent, Copyright and IP contained in this document belong to HAMOS, shall not be reproduced , copied, or used in other ways without permission.