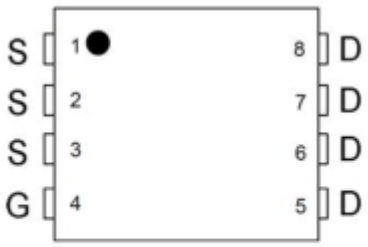
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	7.5mΩ@-10V	-40A
	11mΩ@-4.5V	

Feature

- Enhancement mode
- Low on-resistance RDS(on)
- Pb-free lead plating; RoHS compliant

Package



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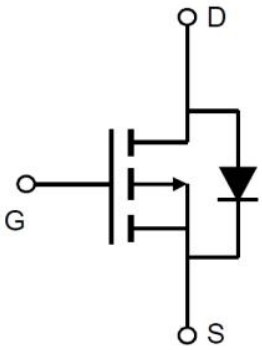
Circuit diagram



Marking

30P08 =Device Code
* =Week Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25℃	I_D	-40	A
	T_C = 100℃		-26	
Pulsed Drain Current [1]		I_{DM}	-160	A
Single Pulsed Avalanche Energy [2]		E_{AS}	100	mJ
Power Dissipation	T_C = 25℃	P_D	25.6	W
Thermal Resistance, Junction to Case		$R_{\theta JC}$	4.9	℃/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

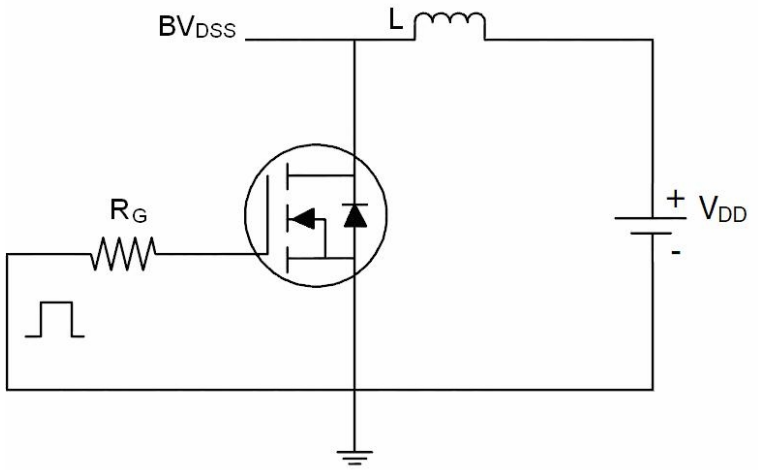
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30V, V_{GS} = 0V			-1	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.6	-2.5	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-20A		7.5	10	mΩ
		V_{GS} =-4.5V, I_D =-10A		11	15	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1.0MHz		3459		pF
Output Capacitance	C_{oss}			427		
Reverse Transfer Capacitance	C_{rss}			394		
Total Gate Charge	Q_g	V_{DS}=-15V, I_D=-40A, V_{GS}=-10V		37		nC
Gate-Source Charge	Q_{gs}			6.5		
Gate-Drain Charge	Q_{gd}			9.4		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-15V, I_D=-20A, V_{GS} =-10V, R_{GEN}=2.5Ω		16		nS
Turn-on Rise Time	T_r			21		
Turn-off Delay Time	$T_{d(off)}$			68		
Turn-off Fall Time	T_f			52		
Drain-Source Diode Characteristics						
Maximum Continuous Drain to Source Diode Forward Current	I_S				-40	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}				-160	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-40A		-0.8	-1.2	V

Note:

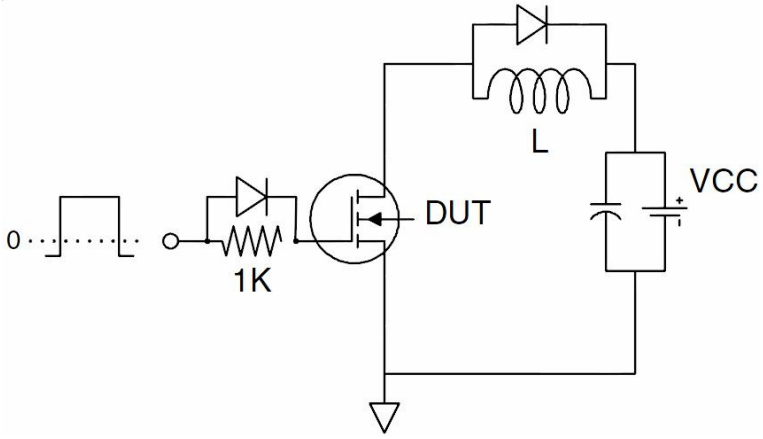
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. E_{AS} condition: T_J= 25℃, V_{DD}= -15V, V_G= -10V, L= 0.5mH, R_G= 25Ω, I_{AS}= -20A
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Test Circuit

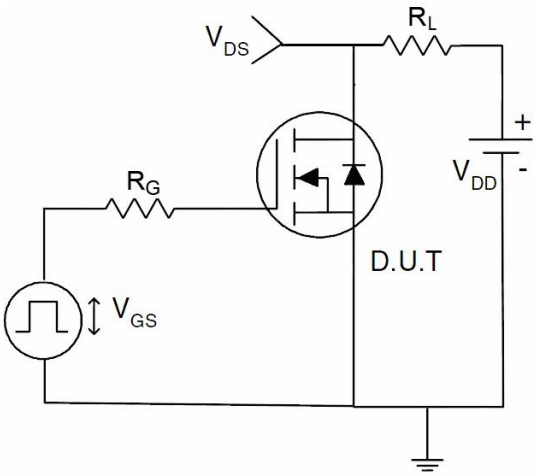
- EAS Test Circuits



- Gate Charge Test Circuit



- Switch Time Test Circuit



Typical Characteristics

Figure1: Output Characteristics

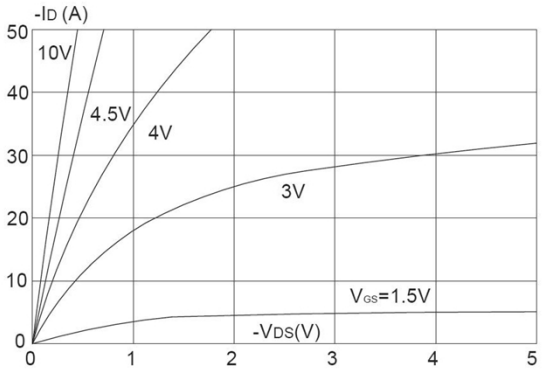


Figure 2: Typical Transfer Characteristics

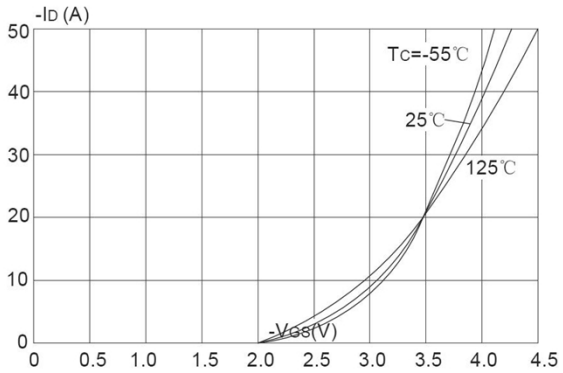


Figure 3: On-resistance vs. Drain Current

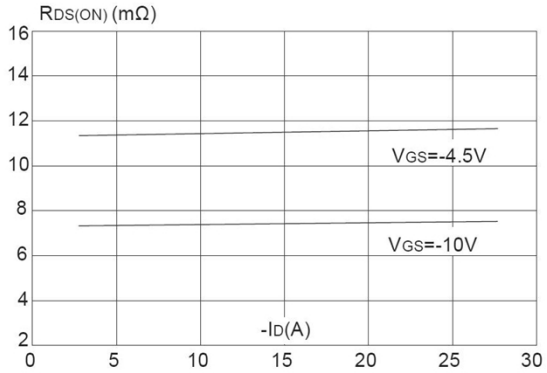


Figure 4: Body Diode Characteristics

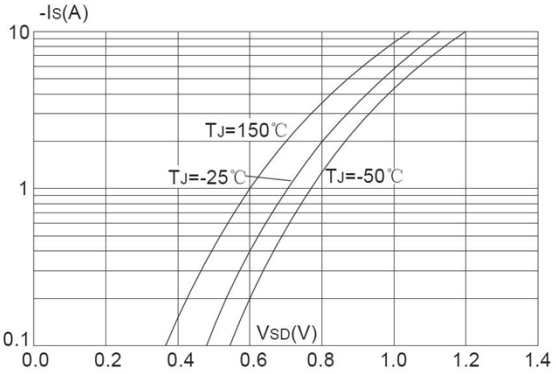


Figure 5: Gate Charge Characteristics

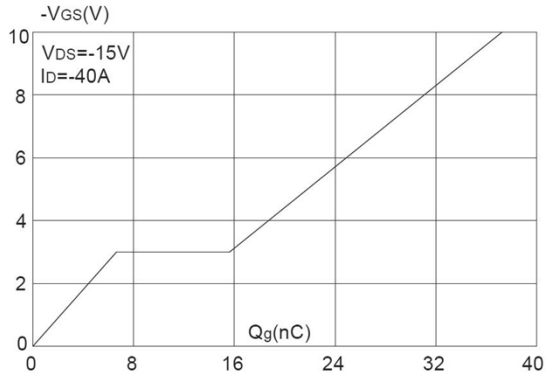


Figure 6: Capacitance Characteristics

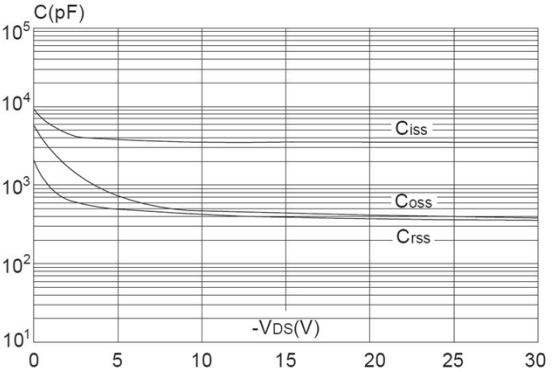


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

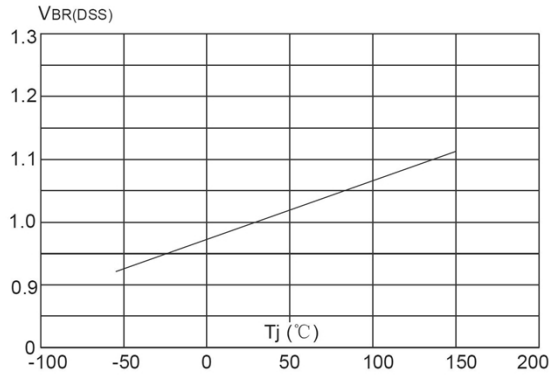


Figure 8: Normalized on Resistance vs. Junction Temperature

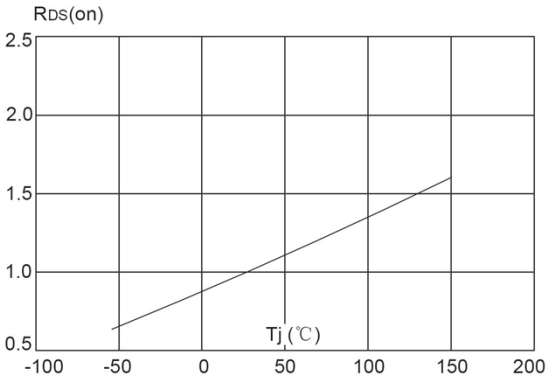


Figure 9: Maximum Safe Operating Area

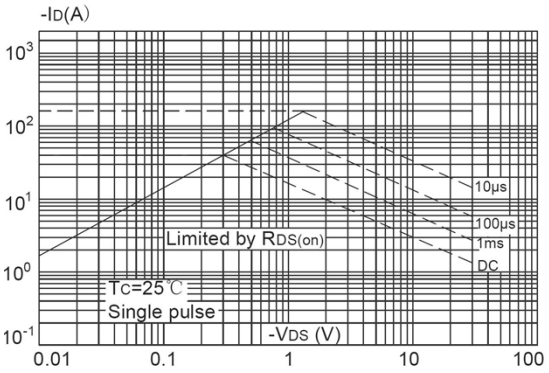


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

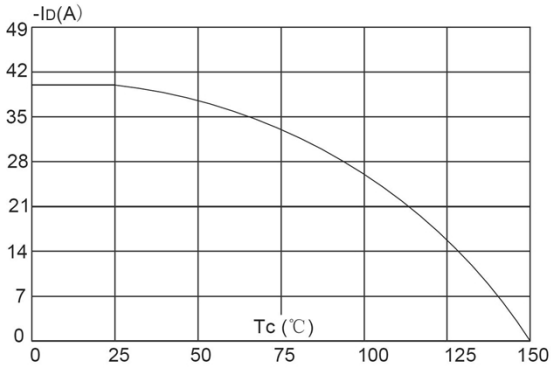
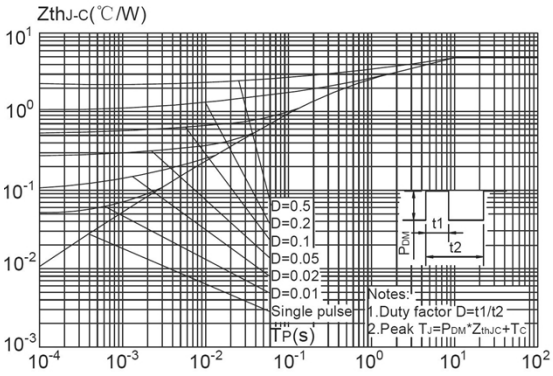
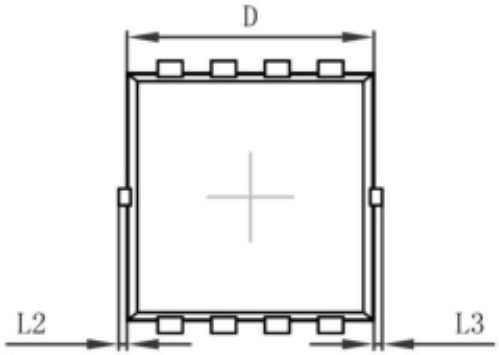


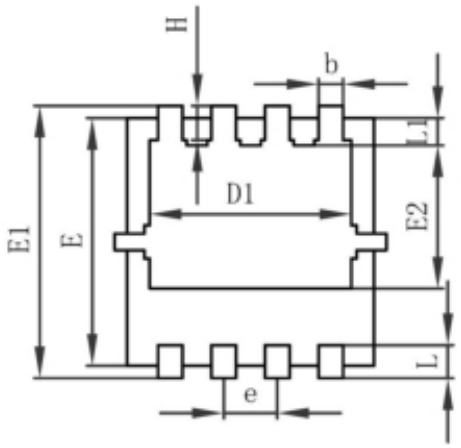
Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case



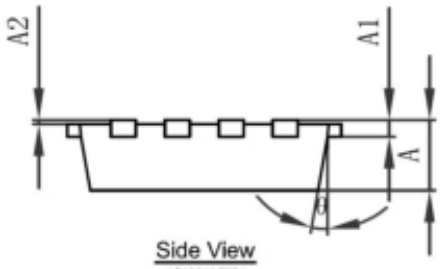
PDFNWB3.3×3.3-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°