Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	3mΩ@-10V	-90A
	4mΩ@-4.5V	

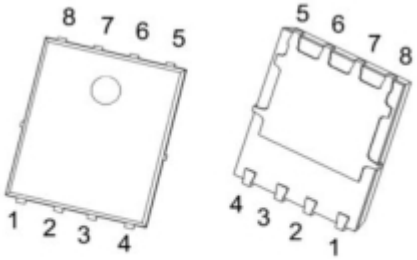
Feature

- High switching speed
- Low Gate Charge
- High density cell design for ultra low Rdson
- 100% Single Pulse avalanche energy Test

Application

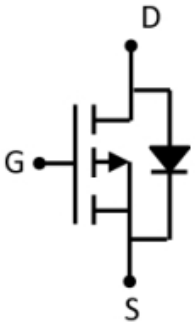
- Load Switching
- DC-DC

Package

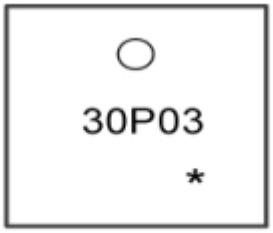


PDFNWB5X6-8L

Circuit diagram



Marking



30P03 =Device Code
*** =Month 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
Drain Current-Continuous（Tc=25℃）	I_D	-90	A
Pulsed Drain Current	I_{DM}	-360	A
Single Pulse Avalanche Energy[1]	E_{AS}	306	mJ
Maximum Power Dissipation(Tc=25℃)	P_D	80	W
Thermal Resistance Junction-Case	$R_{\theta JC}$	1.56	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	℃

Electrical characteristics

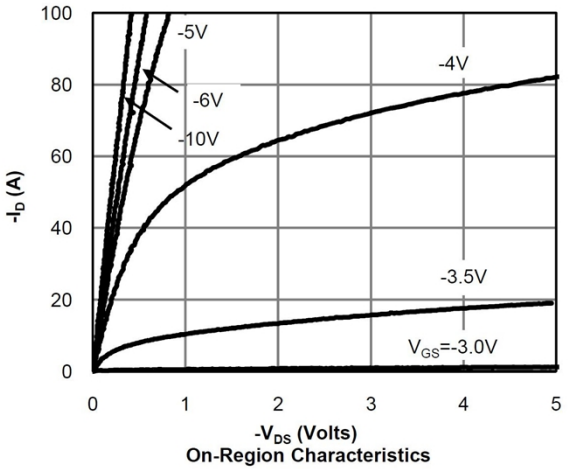
(T_A=25℃, unless otherwise noted)

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} =-24V, 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
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-30A	-	3	4	mΩ
		V_{GS} =-4.5V, I_D =-20A	-	4	6	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		5700		pF
Output Capacitance	C_{oss}			859		
Reverse Transfer Capacitance	C_{rss}			650		
Switching Characteristics						
Total Gate Charge	Q_g	V_{DD}=-15V , V_{GS}=-10V , I_D=20A		75		nC
Gate-Source Charge	Q_{gs}			13		
Gate-Drain Charge	Q_{gd}			23		
Turn-on Delay Time	$T_{d(on)}$	V_{DD} =-15V, R_L=0.75Ω, V_{GEN}=-10V, R_{GEN}=3Ω		14		nS
Turn-on Rise Time	T_r			16		
Turn-off Delay Time	$T_{d(off)}$			94		
Turn-off Fall Time	T_f			75		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-1A			-1	V

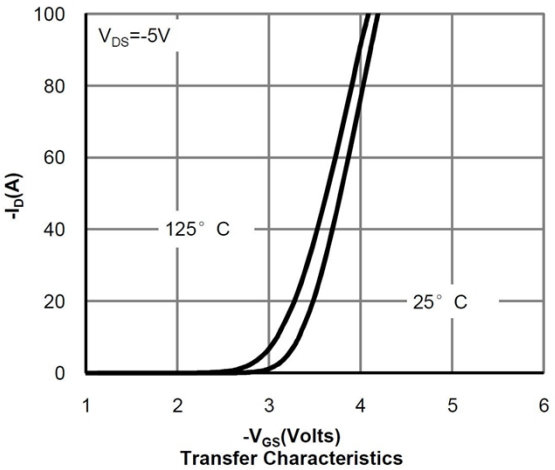
Note:

1. The E_{AS} data shows Max. rating . The test condition is V_{DD}=-15V,V_{GS}=-10V,L=0.5mH,Rg=25Ω

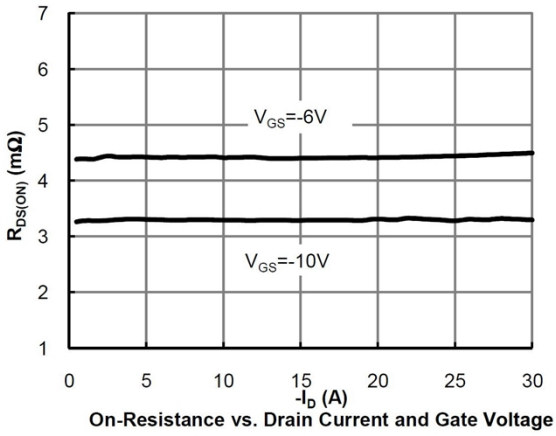
Typical Characteristics



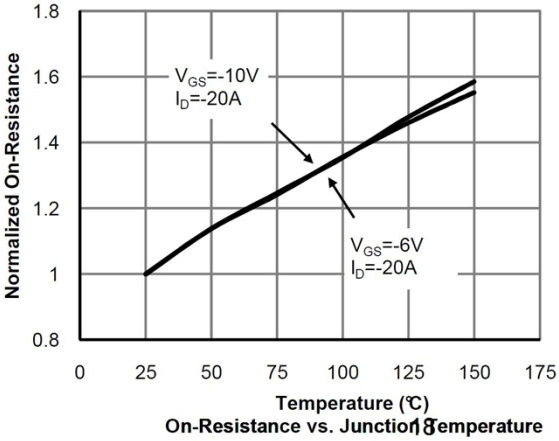
On-Region Characteristics



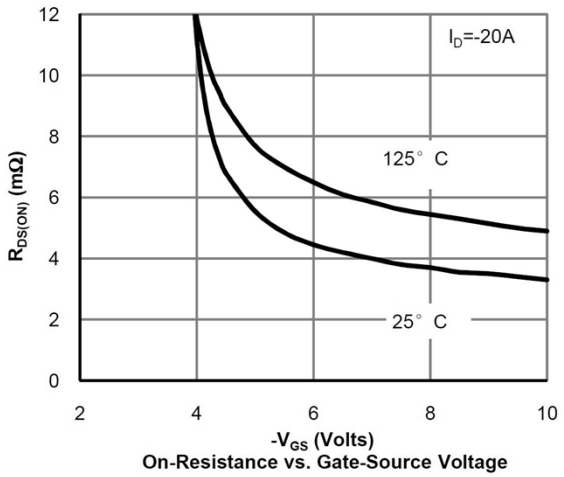
Transfer Characteristics



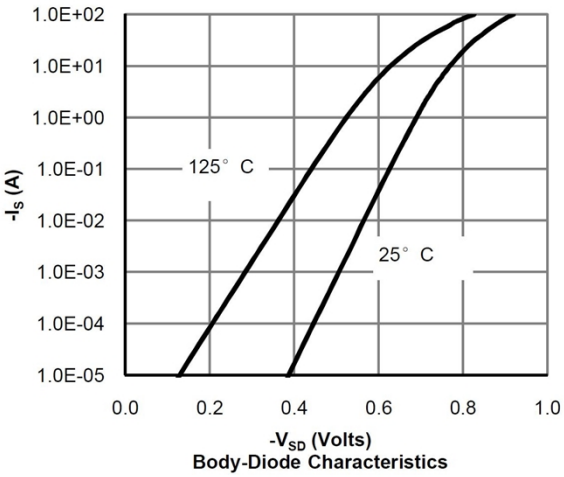
On-Resistance vs. Drain Current and Gate Voltage



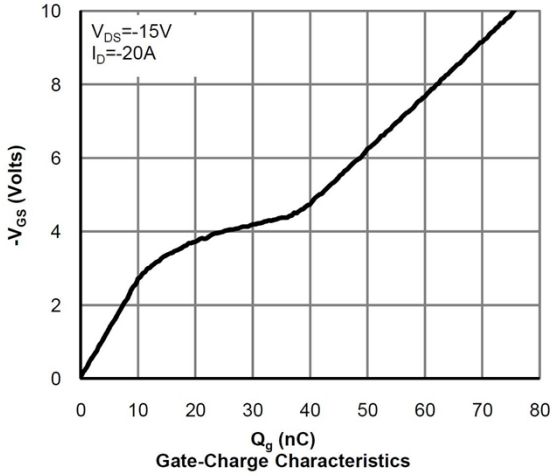
On-Resistance vs. Junction Temperature



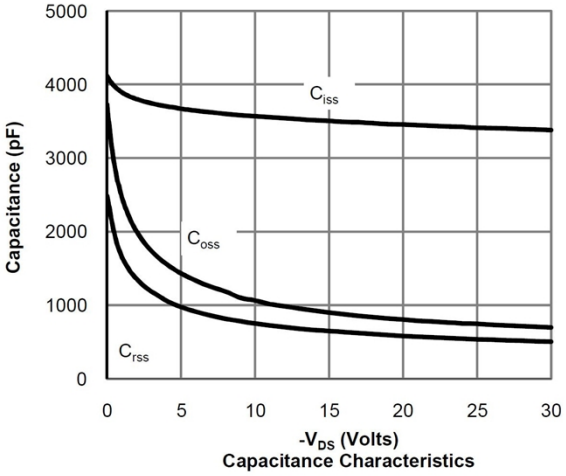
On-Resistance vs. Gate-Source Voltage



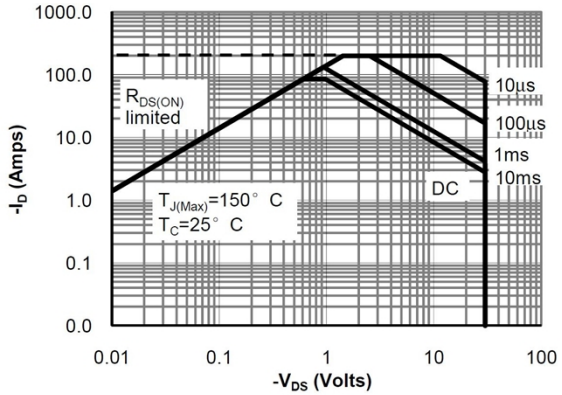
Body-Diode Characteristics



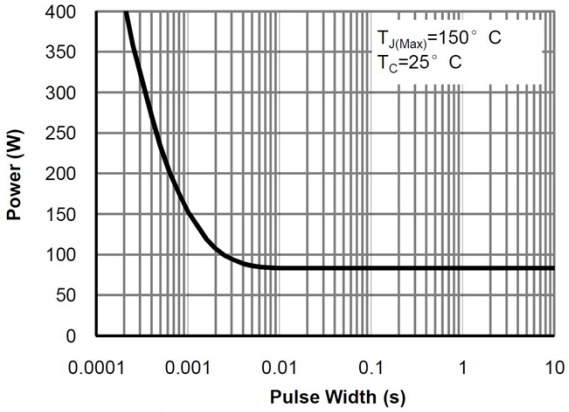
Gate-Charge Characteristics



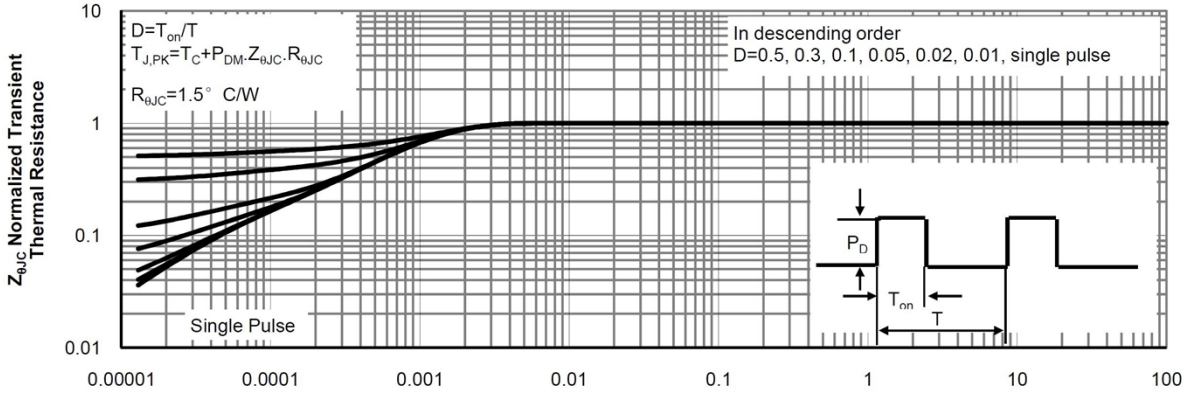
Capacitance Characteristics



Maximum Forward Biased Safe Operating Area

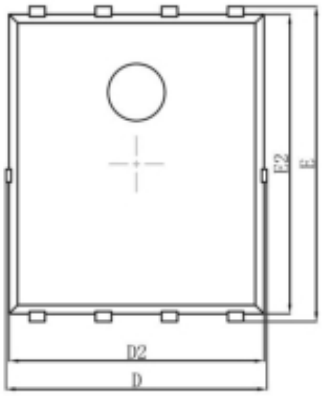


Single Pulse Power Rating Junction-to-Case

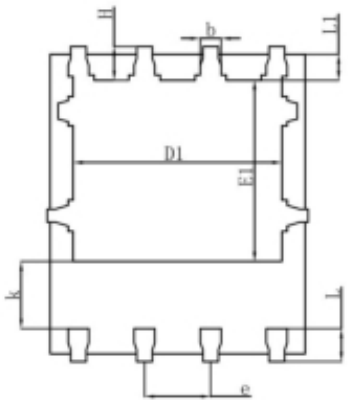


Normalized Maximum Transient Thermal Impedance

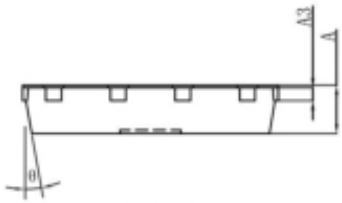
PDFNWB5X6-8L Package Information



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	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°