Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	28mΩ@10V	7A
	42mΩ@4.5V	
-30V	30mΩ@-10V	-8A
	45mΩ@-4.5V	

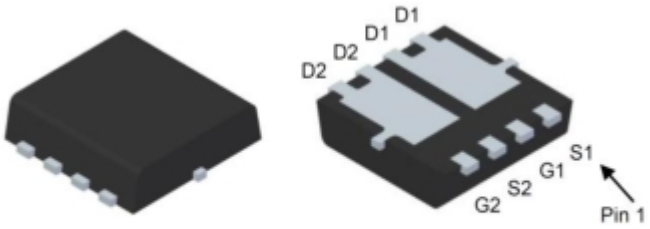
Feature

- High power and current handing capability
- Lead free product is acquired
- Surface mount package

Applications

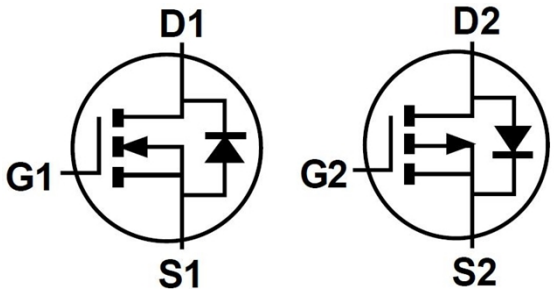
- Motor Control
- DC-DC Converters
- Power Management

Package



PDFNWB3.3×3.3-8L-B

Circuit diagram



Marking

3033C: Product code
* : Month code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value		Unit
		N-Channel	P-Channel	
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	±20	±20	V
Continuous Drain Current	I_D	7	-8	A
Maximum Power Dissipation	P_D	1.6		W
Thermal Resistance from Junction to Ambient(t≤10s)	$R_{\theta JA}$	78		℃/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150		℃

N-Channel 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-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	uA
Gate threshold voltage (1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.5	2.2	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =3.6A		28	38	mΩ
		V_{GS} =4.5V, I_D =3A		42	55	
Dynamic Characteristics						
Total gate charge	Q_g	V_{DS} =15V, V_{GS} 10V, I_D=3.4A		4.5		nC
		V_{DS} =15V, V_{GS} =4.5V, I_D =3.4A		2.1		
Gate-source charge	Q_{gs}			0.85		
Gate-drain charge	Q_{gd}			0.65		
Input capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1MHz		235		pF
Output capacitance	C_{oss}			45		
Reverse transfer capacitance	C_{rss}			17		
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=15V, R_L=5.6Ω, I_D≈2.7A, V_{GEN}=4.5V , Rg=1Ω		12		nS
Turn-on Rise Time	T_r			50		
Turn-Off Delay Time	$T_{d(off)}$			12		
Turn-Off Fall Time	t_f			22		
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	I_S=1A, V_{GS} = 0V			1.2	V

Notes:

1. Pulse Test: Pulse width≤300μs, duty cycle ≤2%.

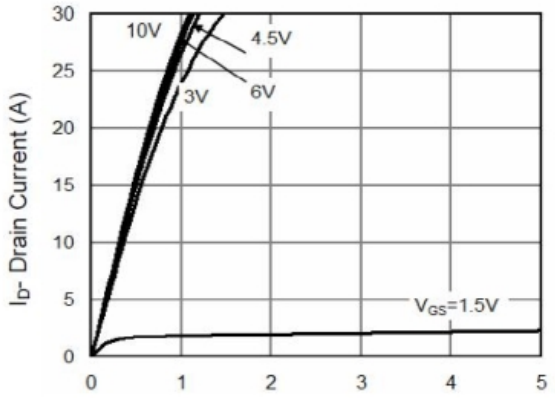
2. Guaranteed by design, not subject to production testing.

P-Channel Electrical characteristics

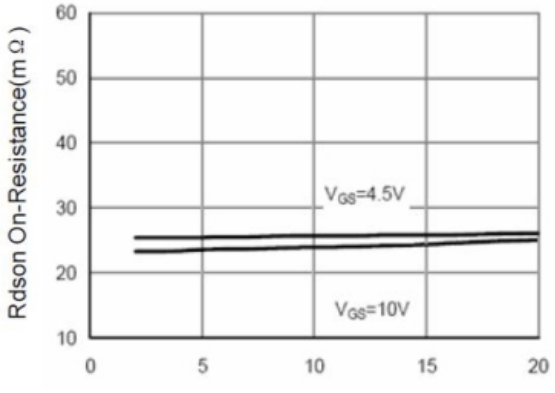
(T_A=25℃, unless otherwise noted)

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-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.0	-1.5	-2.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-7A		30	40	mΩ
		V_{GS} =-4.5V, I_D =-4A		45	65	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		729		pF
Output capacitance	C_{oss}			112		
Reverse transfer capacitance	C_{rss}			107		
Switching Characteristics						
Total gate charge	Q_g	V_{DS} =-15V, V_{GS} =-6.5V, V_{DS} =-10V		16.6		nC
Gate-source charge	Q_{gs}			1.8		
Gate-drain charge	Q_{gd}			4.2		
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-15V, R_L =2.3Ω, V_{GS}=-10V, R_{GEN} =6Ω		7.5		nS
Turn-on Rise Time	T_r			5.5		
Turn-Off Delay Time	$T_{d(off)}$			19		
Turn-Off Fall Time	t_f			7		
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	I_S=-1A, V_{GS} = 0V			-1.2	V

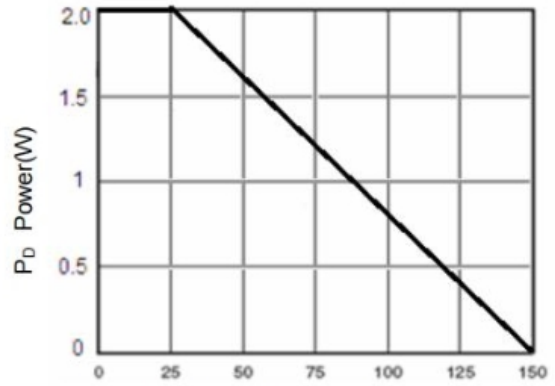
N-Channel Typical Characteristics



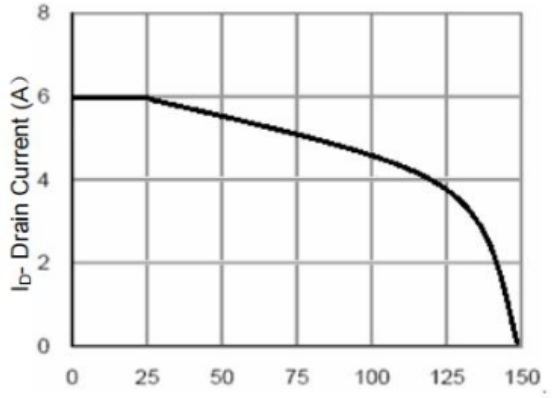
Output Characteristics



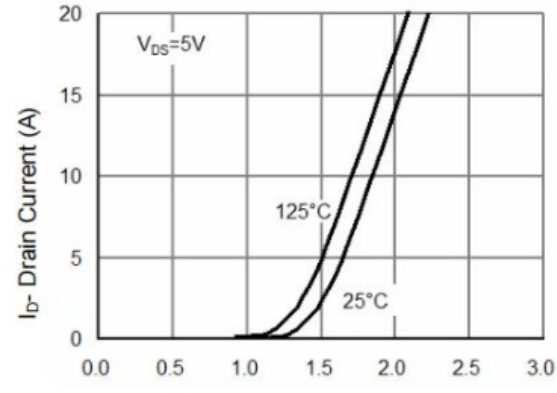
Drain-Source On-Resistance



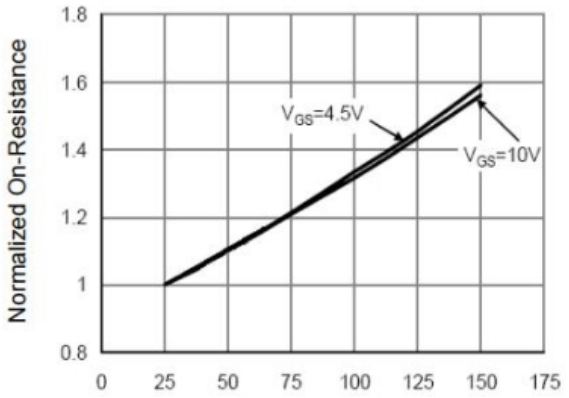
Power Dissipation



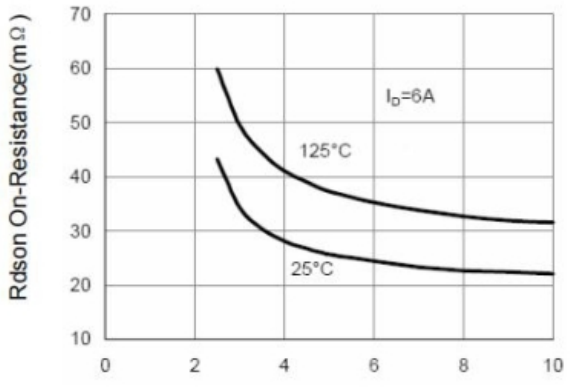
Drain Current



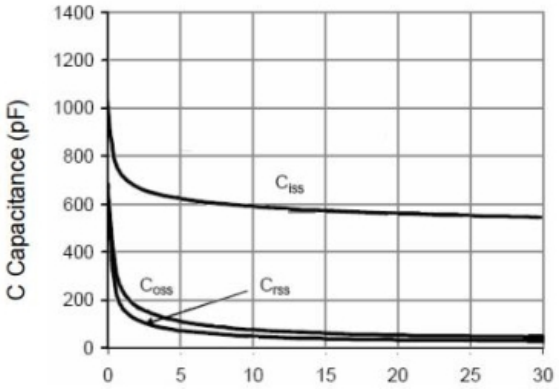
Transfer Characteristics



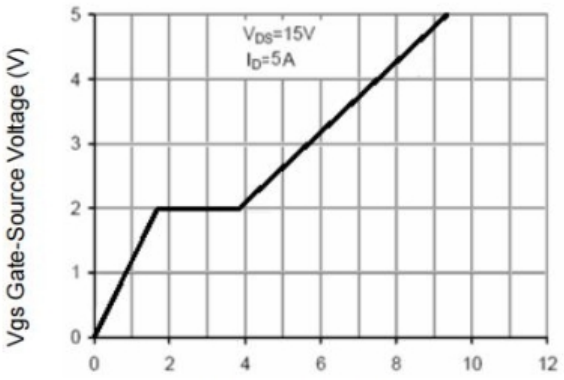
Drain-Source On-Resistance



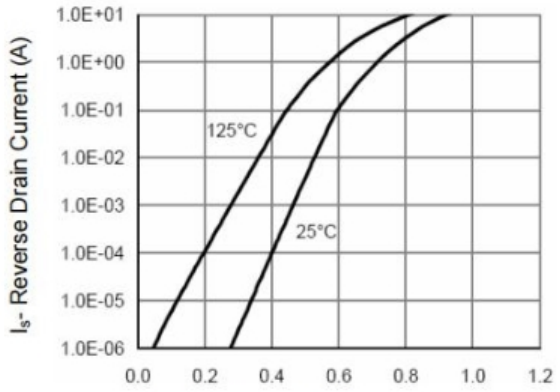
Rdson vs Vgs



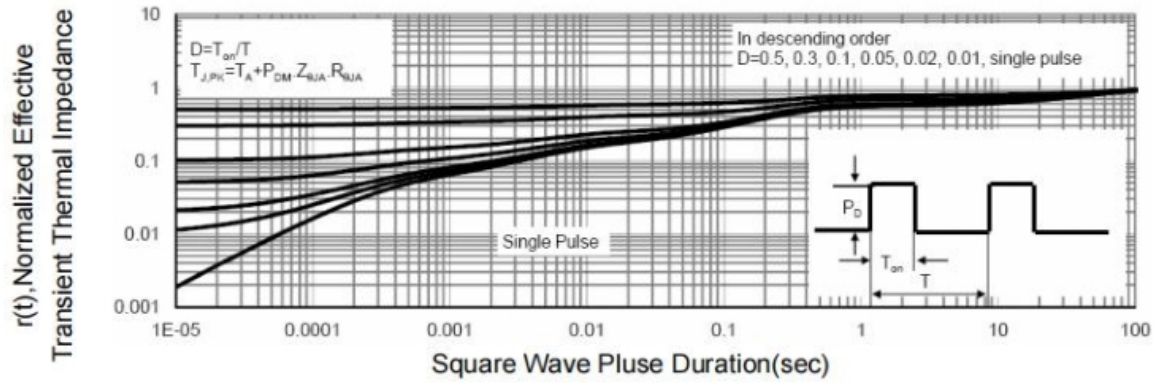
Capacitance vs Vds



Gate Charge

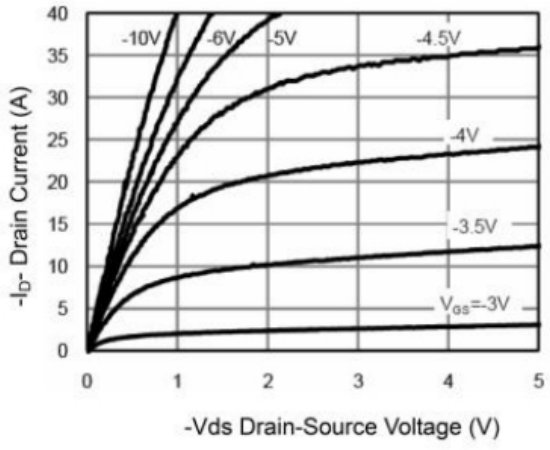


Source- Drain Diode Forward

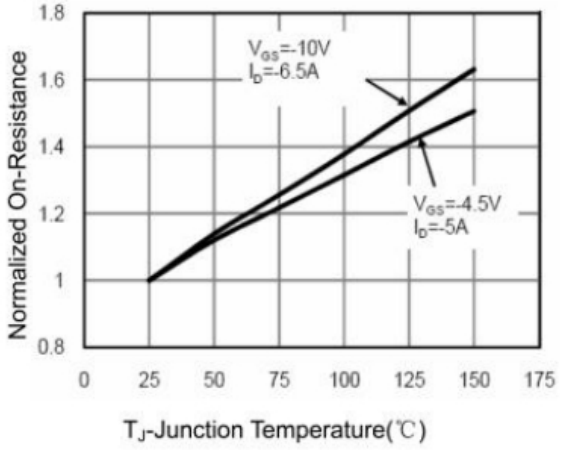


Normalized Maximum Transient Thermal Impedance

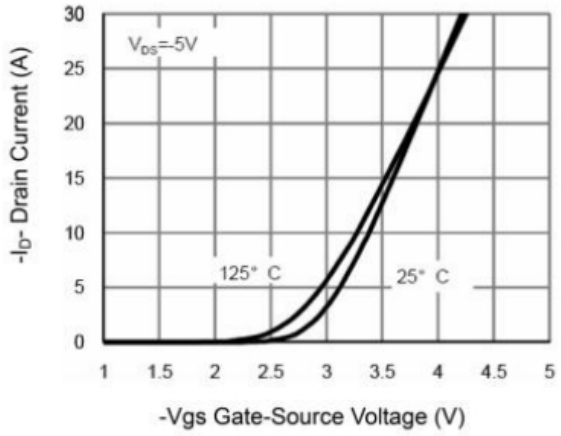
P-Channel Typical Characteristics



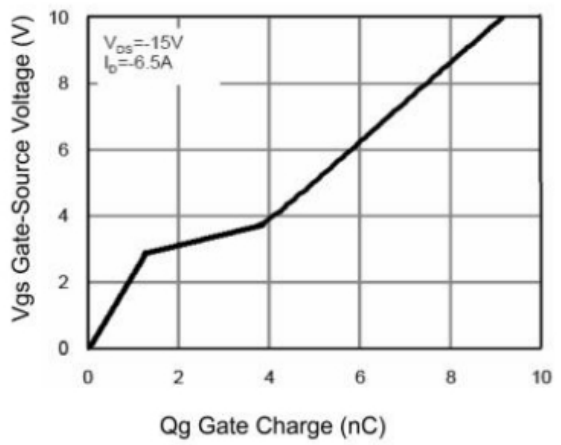
Typical Output Characteristics



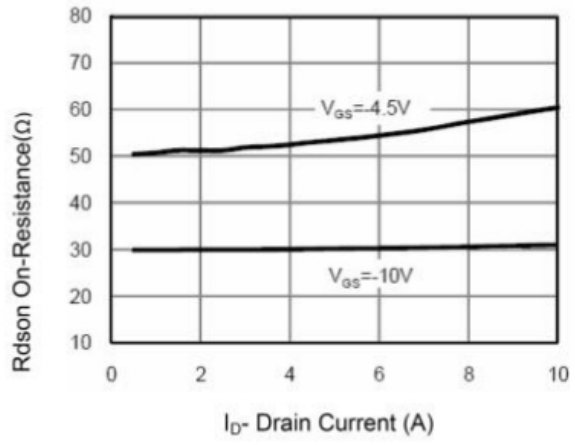
Rdson-Junction Temperature



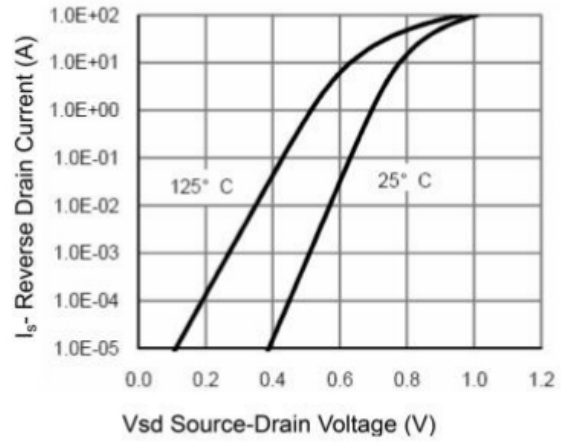
Transfer Characteristics



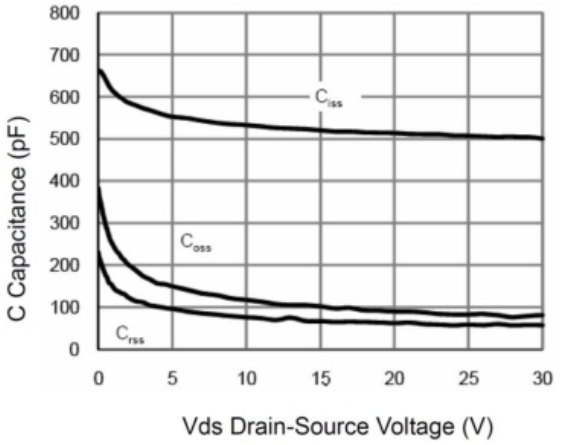
Gate-Charge



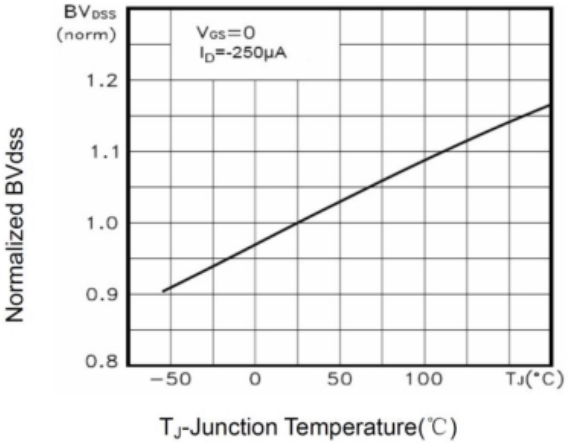
Rdson- Drain Current



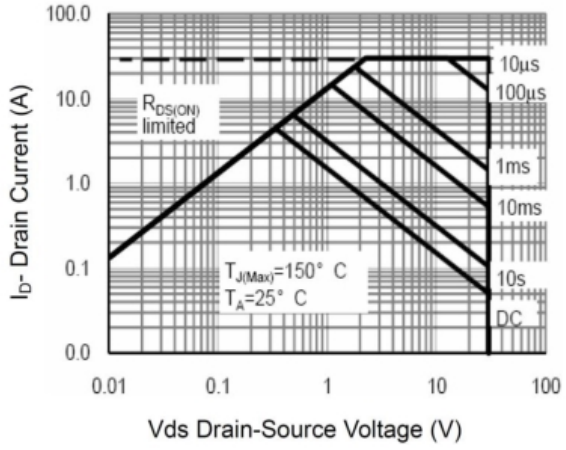
Source- Drain Diode Forward



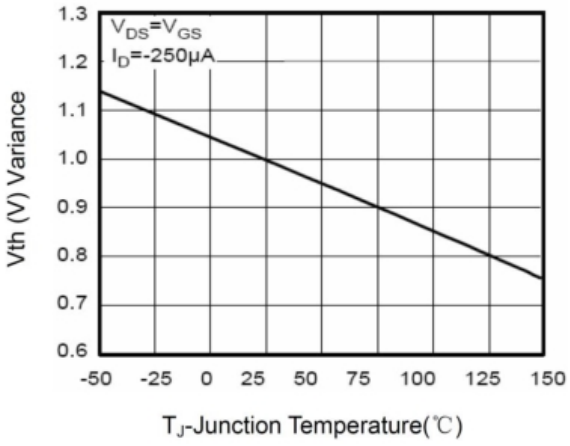
Capacitance vs Vds



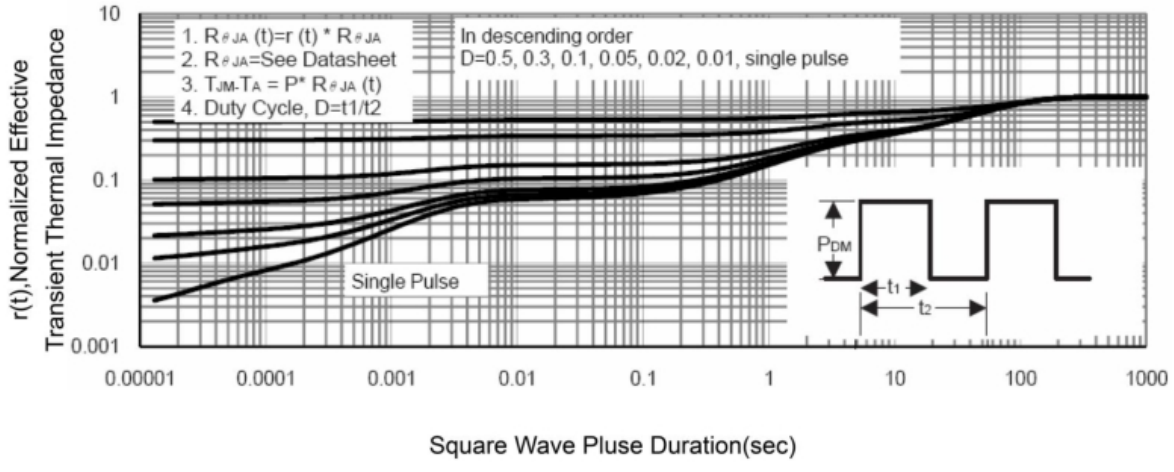
BVDSS vs Junction Temperature



Safe Operation Area

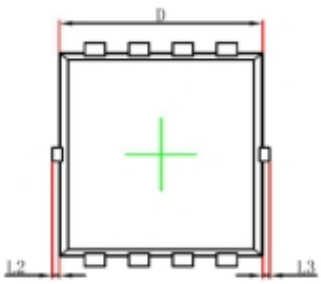


VGS(th) vs Junction Temperature

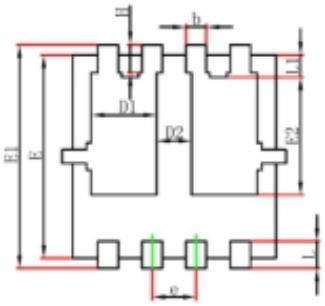


Normalized Maximum Transient Thermal Impedance

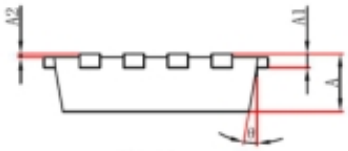
PDFNWB3.3×3.3-8L-B Package Information



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	0.935	1.135	0.037	0.045
D2	0.280	0.480	0.011	0.019
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°