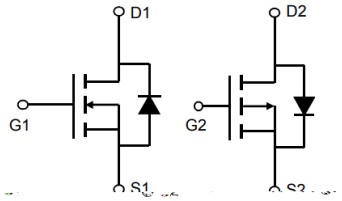
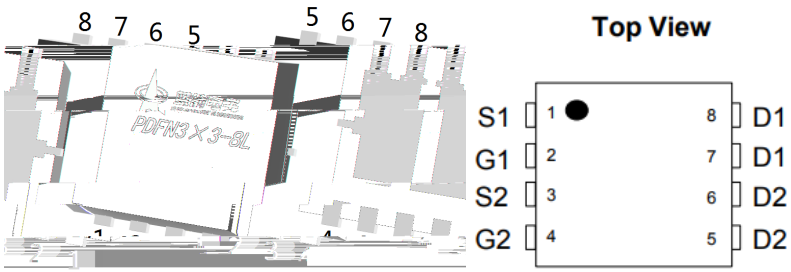
PDFN3×3-8L

Complementary Enhancement MOSFET in a PDFN3×3-8L Plastic Package.

N-channel	P-channel
V_{DS}(V)=30V I_D=37A	V_{DS}(V)=-30V I_D=-26A
$R_{DS(ON)}$@10V<8m (Typ.7.5mR)	$R_{DS(ON)}$@-10V<13m (Typ.12mR)
$R_{DS(ON)}$@4.5V<15m (Typ.11mR)	$R_{DS(ON)}$@-4.5V<20m (Typ.17mR)
HF Product.	

Battery protection switch,Mobile device battery charging and discharging,Load switch.





See Marking Instructions.

Parameter	Symbol	Rating		Unit
		N-channe	P-channell	
Drain-Source Voltage	V_{DSS}	30	-30	V
Gate-Source Voltage	V_{GSS}	±20		V
Continuous Drain Current	I_D(T_c=25)	37	-26	A
Pulsed Drain Current	I_{DM}	82	-58	A
Power Dissipation	P_D(T_c=25)	18	15	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150		
Maximum Junction-to-Case	$R_{\theta JA}$	6.9	8.3	/W

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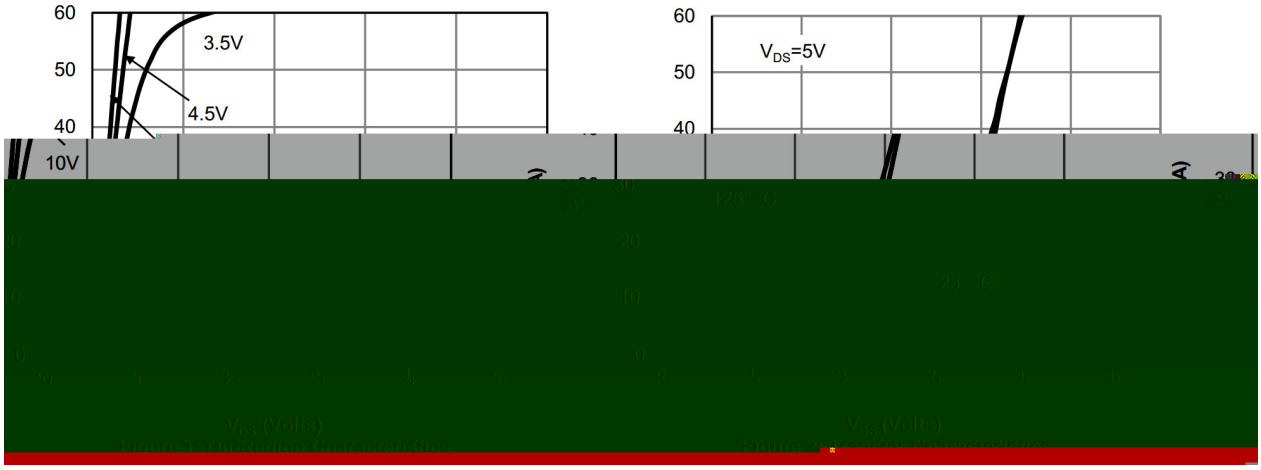
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	30	35.5		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V	V_{GS}=0V			1.0	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=10A		7.5	8	mΩ
		V_{GS}=4.5V	I_D=10A		11	15	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=1.0A			1.4	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1.0MHz	V_{GS}=0V		1170		pF
Output Capacitance	C_{oss}				110		pF
Reverse Transfer Capacitance	C_{rss}				100		pF
Gate resistance	Rg	V_{DS}=0V f=1.0MHz	V_{GS}=0V		3.7		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V I_D=10A	V_{DS}=15V		40		nC
Total Gate Charge	$Q_{g(4.5V)}$				22		nC
Gate-Source Charge	Q_{gs}				11		nC
Gate-Drain Charge	Q_{gd}				5		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=15 V R_L=0.75Ω	V_{GS}=10V R_{GEN}=3Ω		11		ns
Turn-On Rise Time	t_r				14		ns
Turn-Off Delay Time	$t_{d(off)}$				38		ns
Turn-Off Fall Time	t_f				10		ns



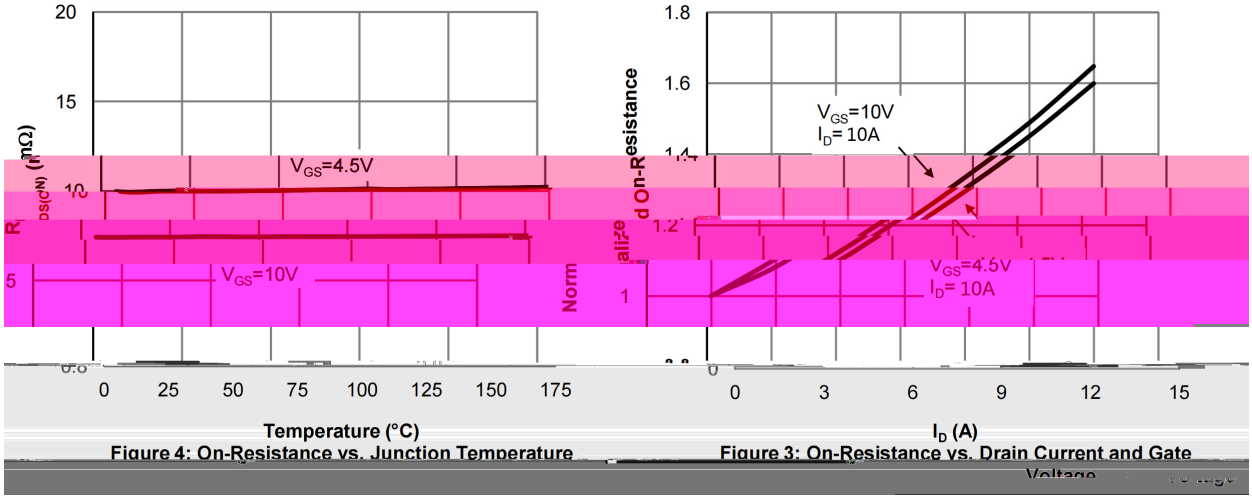
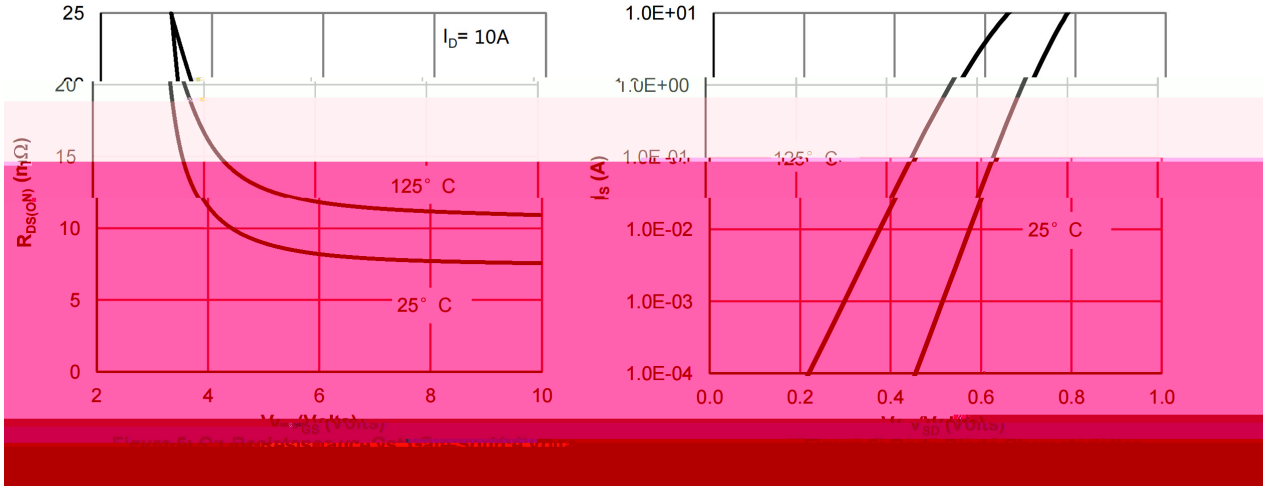


Figure 4: On-Resistance vs. Junction Temperature

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



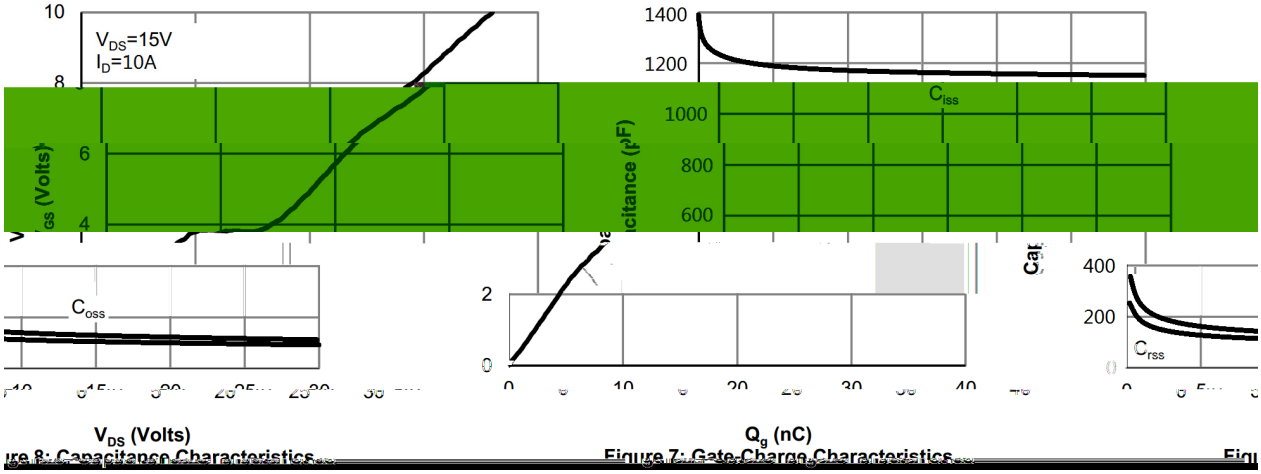
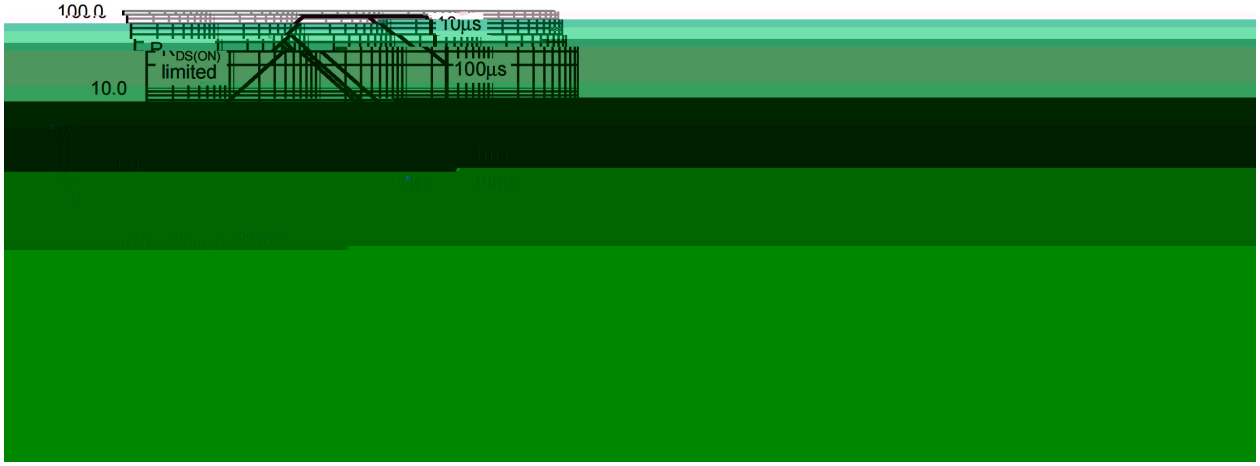


Figure 8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics



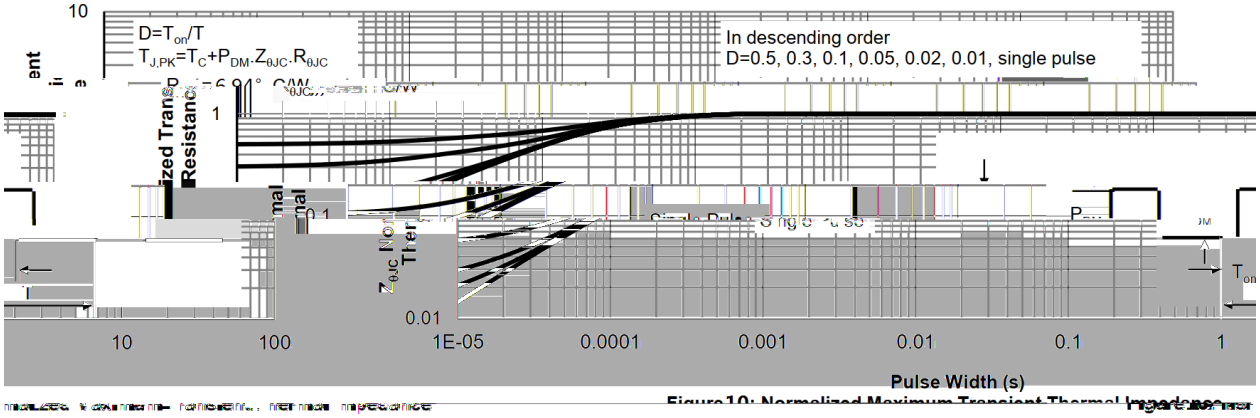


Figure 10: Normalized Maximum Transient Thermal Impedance

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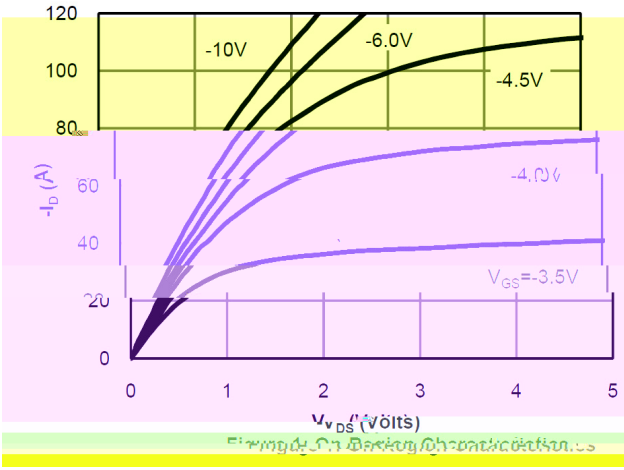
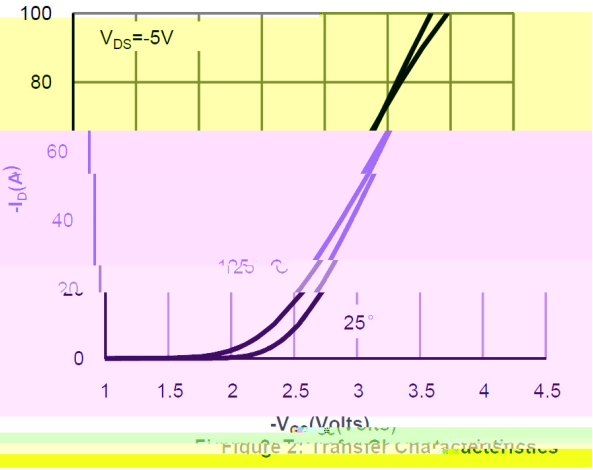
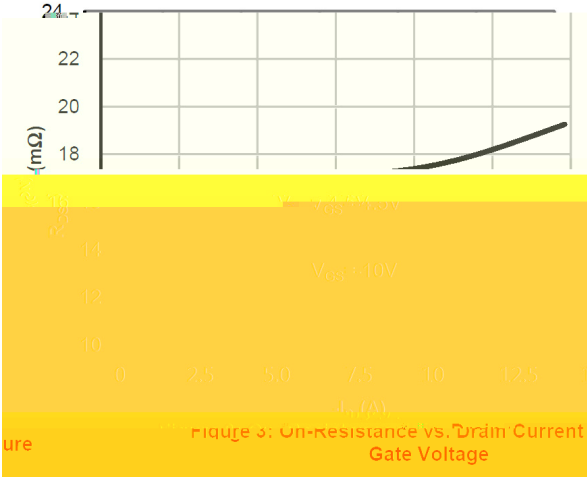
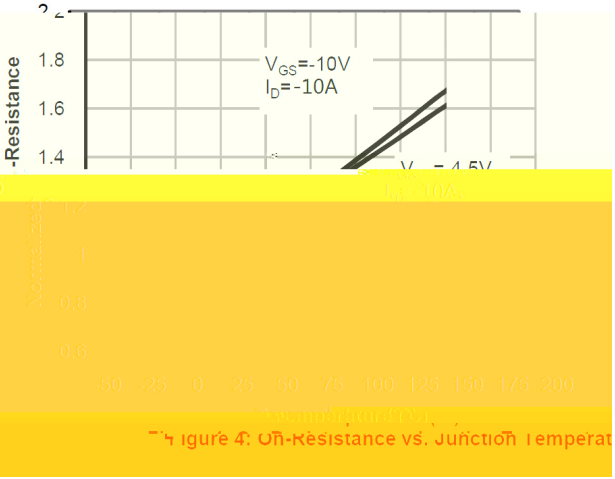
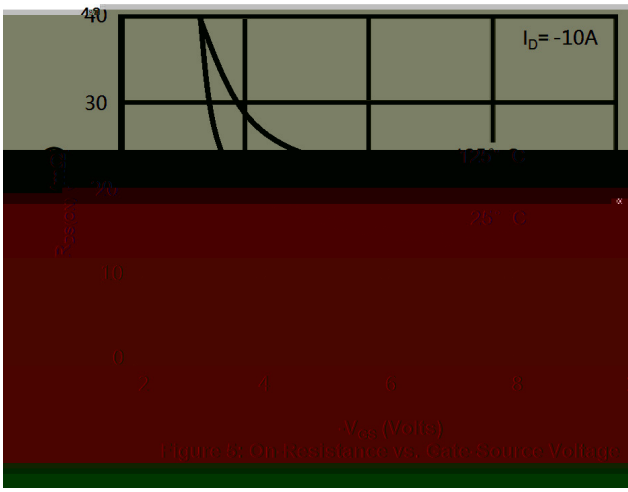
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30 V_{GS}=0V			-1.0	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-1.0	-1.5	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V I_D=-10A		12	13	mΩ
		V_{GS}=-4.5V I_D=-10A		17	20	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=-1.0A			-1.4	V
Input Capacitance	C_{iss}	V_{DS}=-25V V_{GS}=0V f=1.0MHz		2100		pF
Output Capacitance	C_{oss}			1900		pF
Reverse Transfer Capacitance	C_{rss}			640		pF
Gate resistance	R_g	V_{DS}=0V V_{GS}=0V f=1.0MHz		4		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=-10V V_{DS}=-15V I_D=-10A		35		nC
Total Gate Charge	$Q_{g(4.5V)}$			17		nC
Gate-Source Charge	Q_{gs}			5.7		nC
Gate-Drain Charge	Q_{gd}			8.8		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-15 V V_{GS}=-10V R_L=1Ω R_{GEN}=3Ω		11		ns
Turn-On Rise Time	t_r			7.5		ns
Turn-Off Delay Time	$t_{d(off)}$			43.5		ns
Turn-Off Fall Time	t_f			17.5		ns

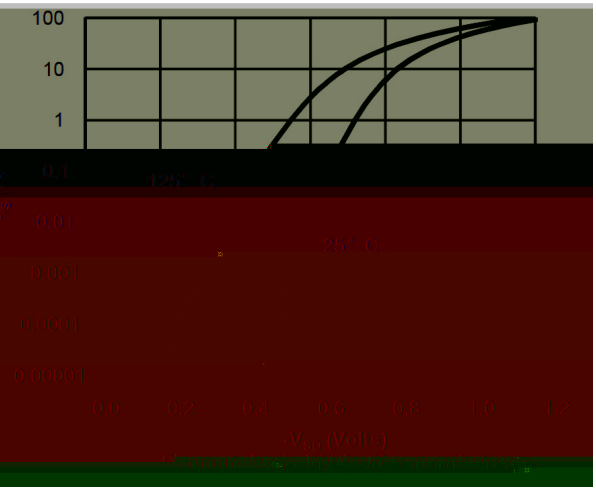

120
100
80
-10V
-6.0V
-4.5V
-4.0V
V_{GS}=-3.5V
60
40
20
0
$-I_D$ (A)
0
1
2
3
4
5
V_{DS} (Volts)

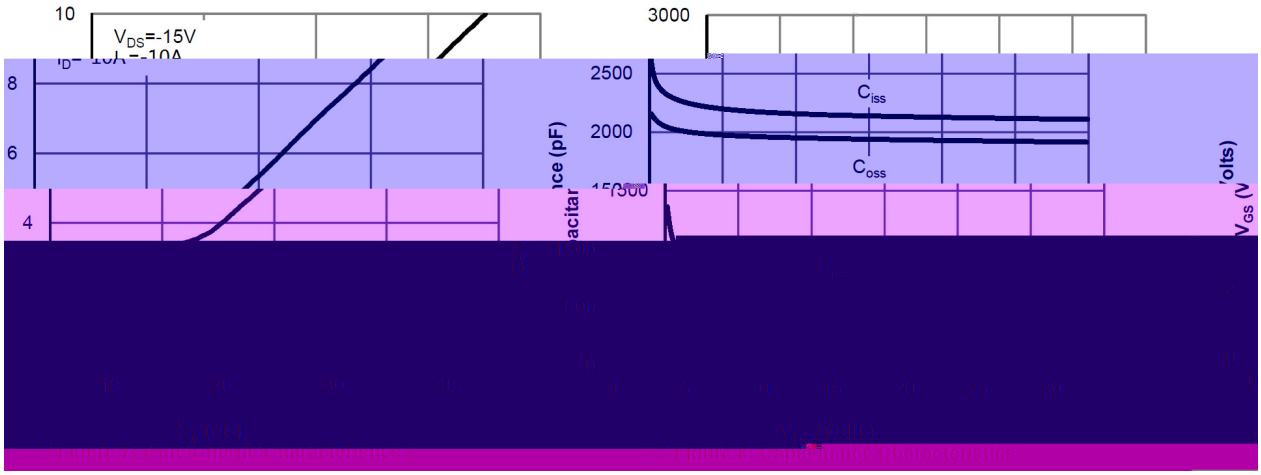

100
80
V_{DS}=-5V
60
40
20
0
$-I_D$ (A)
125 °C
25°
1
1.5
2
2.5
3
3.5
4
4.5
$-V_{GS}$ (Volts)


24
22
20
18
(mΩ)


1.8
1.6
1.4
-Resistance
V_{GS}=-10V
I_D=-10A


40
30
I_D= -10A
0
2
4
6
8
10
V_{GS} (Volts)


100
10
1
0.1
0.01
0.001
0.0001
0.00001
0.0
0.2
0.4
0.6
0.8
1.0
1.2
$-V_{SD}$ (Volts)



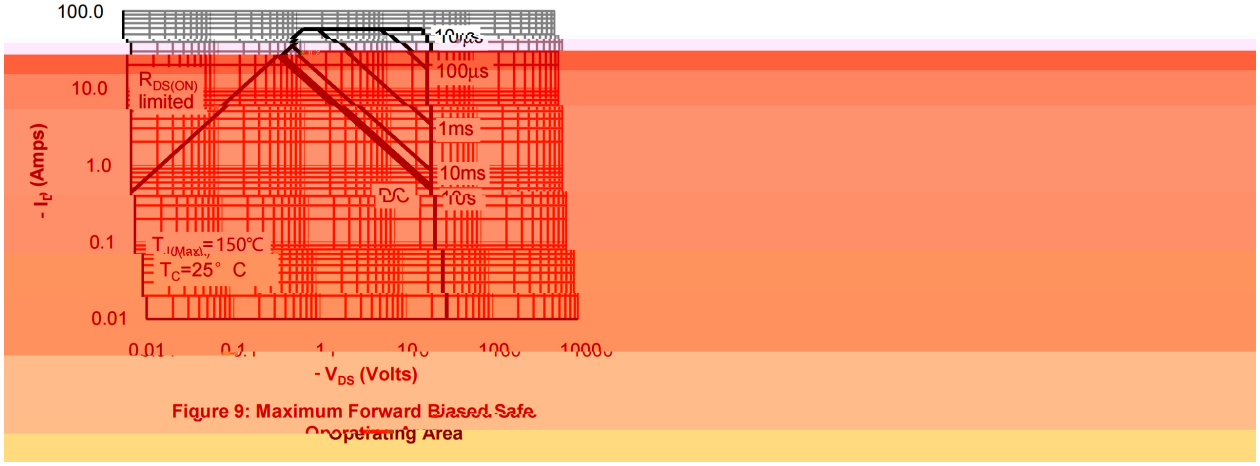
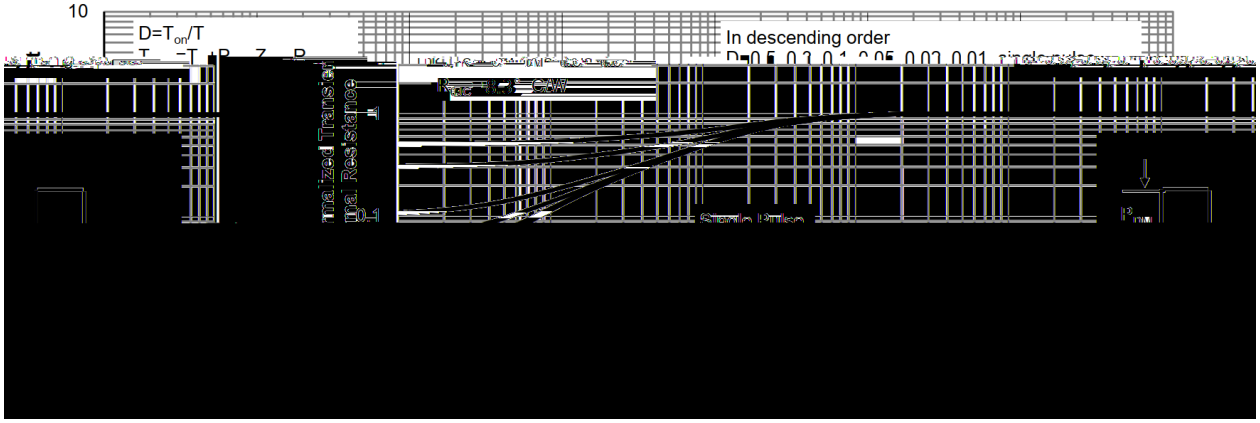
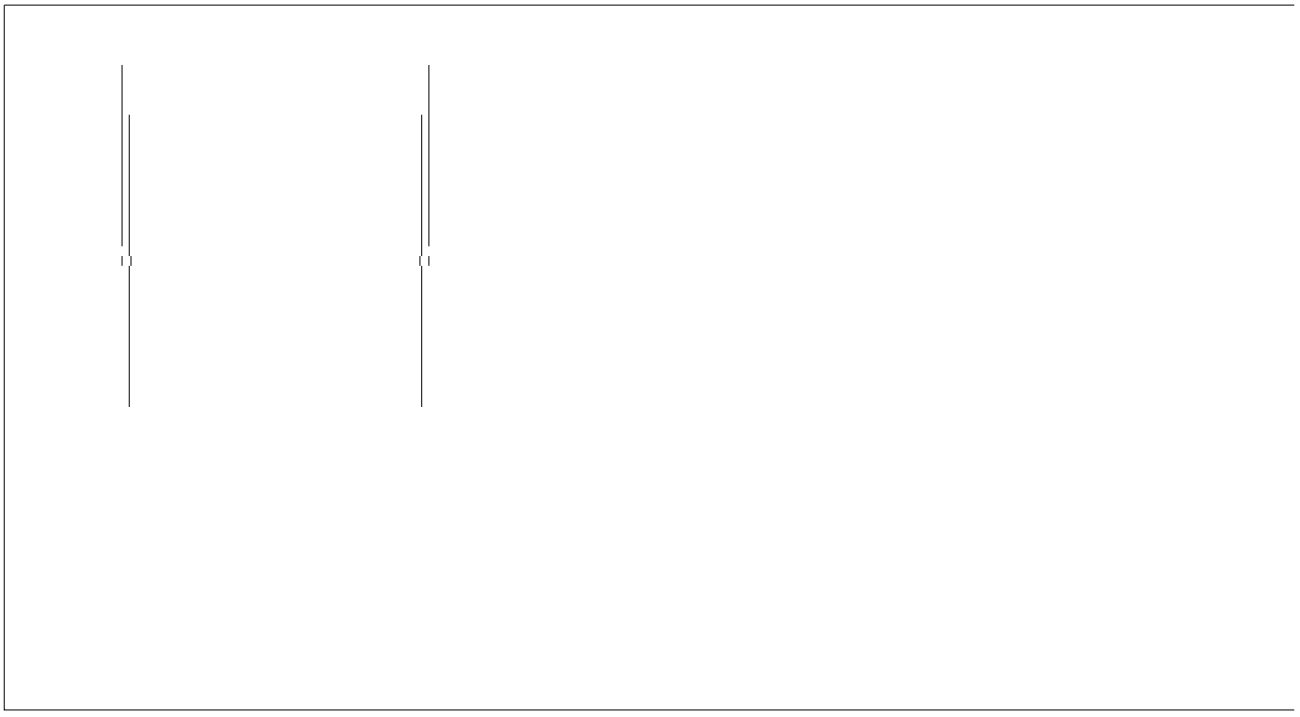


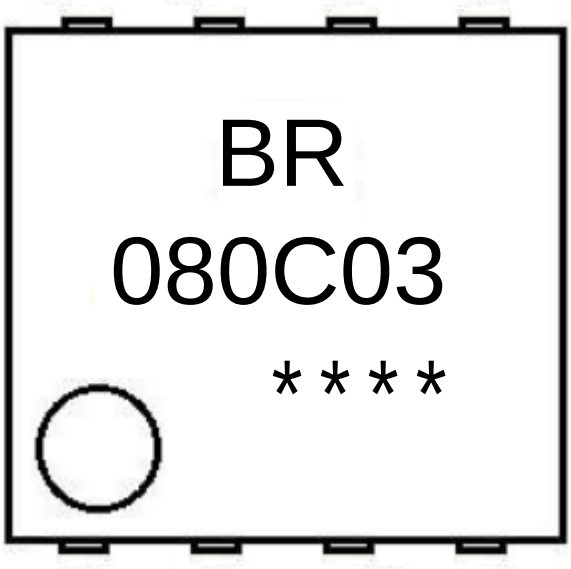
Figure 9: Maximum Forward Biased Safe Operating Area



PDFN3X3-8L

Unit:mm





BR

080C03

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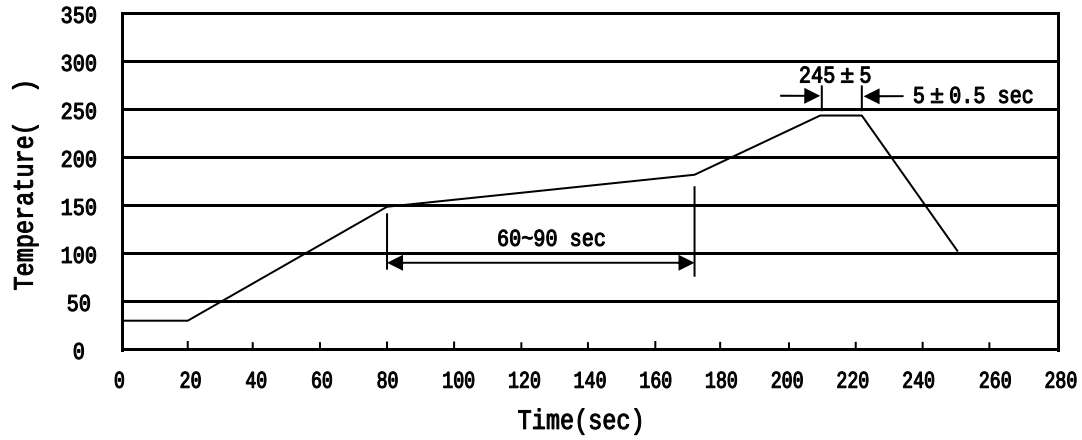
Note:

BR:	Company Code
080C03:	Product Type Code
****:	Lot No. Code, code change with Lot No

Temperature Profile for IR Reflow Soldering(Pb-Free)



				Note:	
1	150	180	60	90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245±5			5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3			2	10 /sec.	3. Cooling Speed: 2~10 /sec.

260±5	10±1 sec.	Temp.:260±5	Time:10±1 sec

/ REEL

Package Type	Units					Dimension		(unit mm³)
PDFN3×3-8L	5,000	2	10,000	6	60,000	13 ×12	360×360×50	380×335×366