

BRCS080C03YA

Rev.A Sep.-2023



蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

PDFN6×60;L

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

N0channel

$V_{DS}(V)=30V$ $I_D=37A$

$R_{DS(ON)}@10V<8m$ (Typ.7.5mR)

$R_{DS(ON)}@4.5V<15m$ (Typ.11mR)

HF Product.

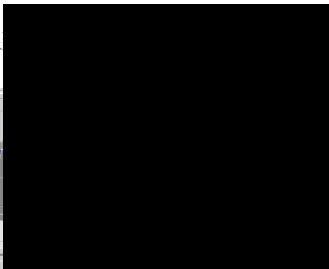
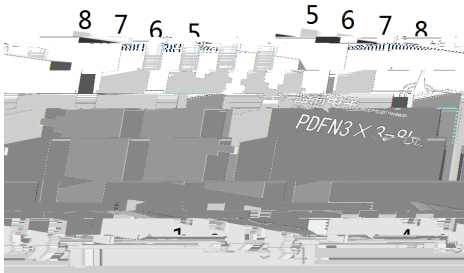
P-channel

$V_{DS}(V)=-30V$ $I_D=-26A$

$R_{DS(ON)}@-10V<13m$ (Typ.12mR)

$R_{DS(ON)}@-4.5V<20m$ (Typ.17mR)

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



/ Marking

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Parameter	Symbol	Rating		Unit
		N-channel	P-channel	
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	± 20		V
Continuous Drain Current	$I_D(T_c=25^\circ\text{C})$	37	-26	A
Pulsed Drain Current	I_{DM}	82	-58	A
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	18	15	W

Junction and Storage
Temperature Range

$T_J = -65^\circ\text{C} \sim +175^\circ\text{C}$ (ref BT 10.4958 0.0033 Tw510771 10.5 27Tp1 4Jc(c)Tj10.4958 0 0 10.4471. =6 refBT T


N- /N-CHANNEL Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	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}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=10A$		7.5	8	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		11	15	m Ω
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1.0A$			1.4	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1170		pF
Output Capacitance	C_{oss}			110		pF
Reverse Transfer Capacitance	C_{rss}			100		pF
Gate resistance	R_g	$V_{DS}=0V$ $V_{GS}=0V$ $f=1.0MHz$		3.7		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=10A$		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	$t_{d(on)}$	$V_{DS}=15V$ $V_{GS}=10V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		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

N- / N-CHANNEL Electrical Characteristic Curve

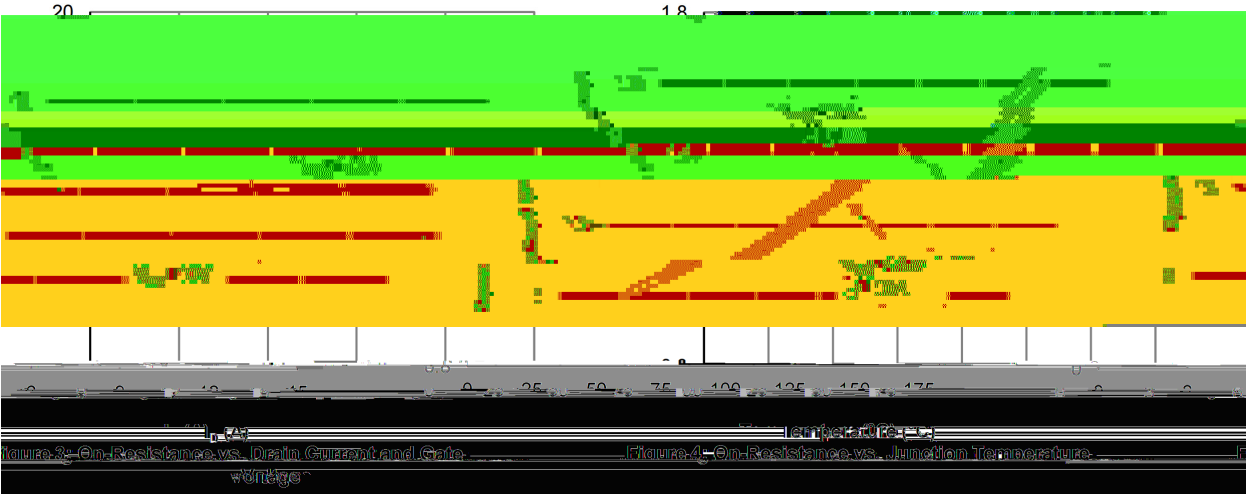
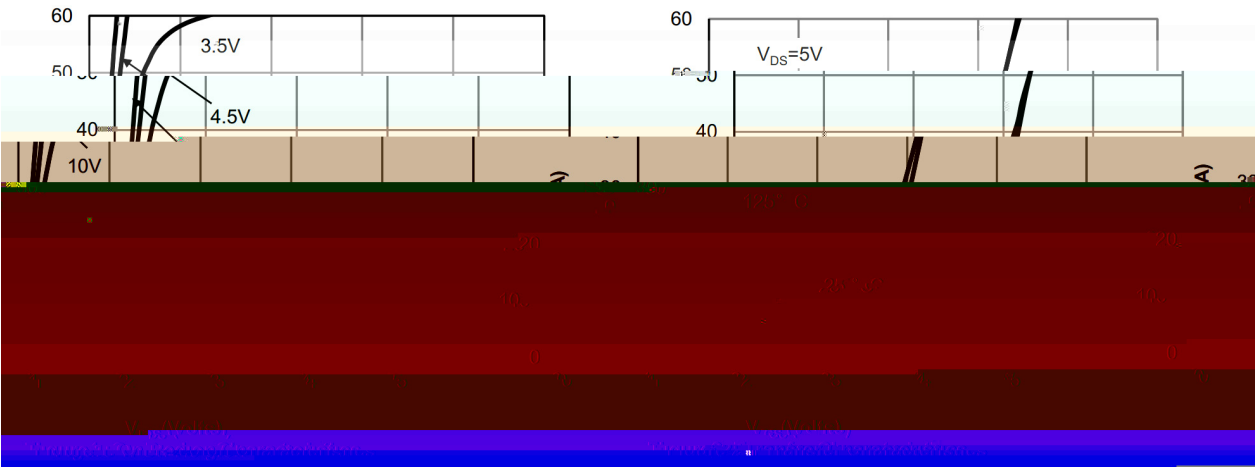
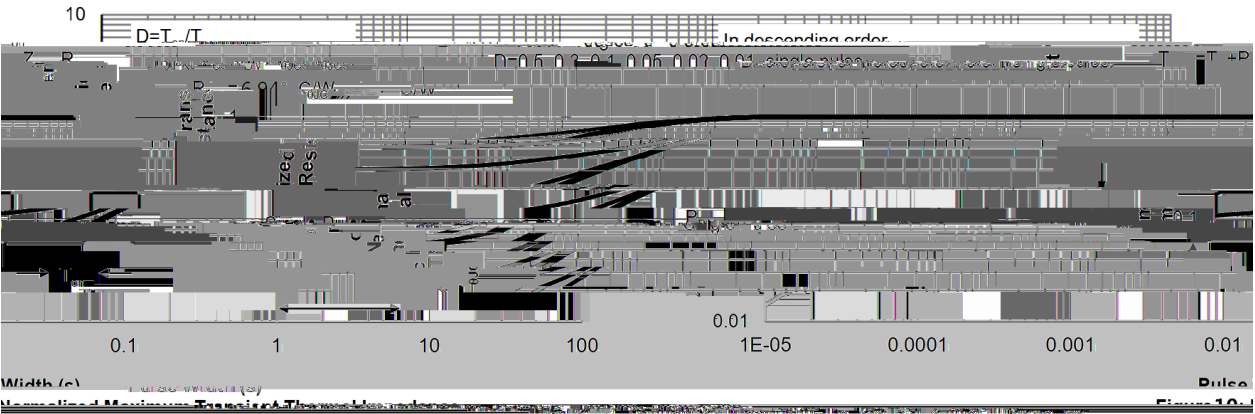
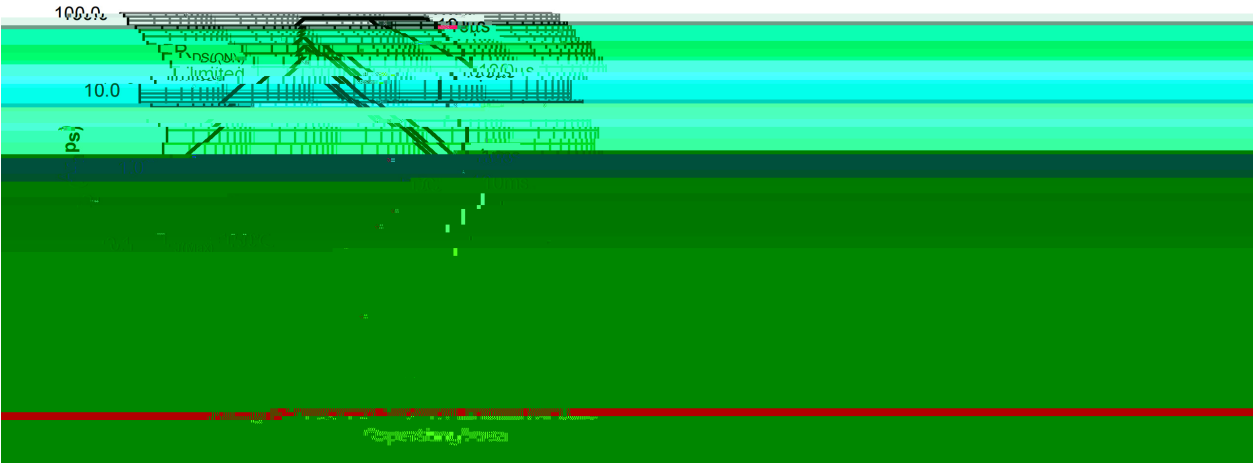
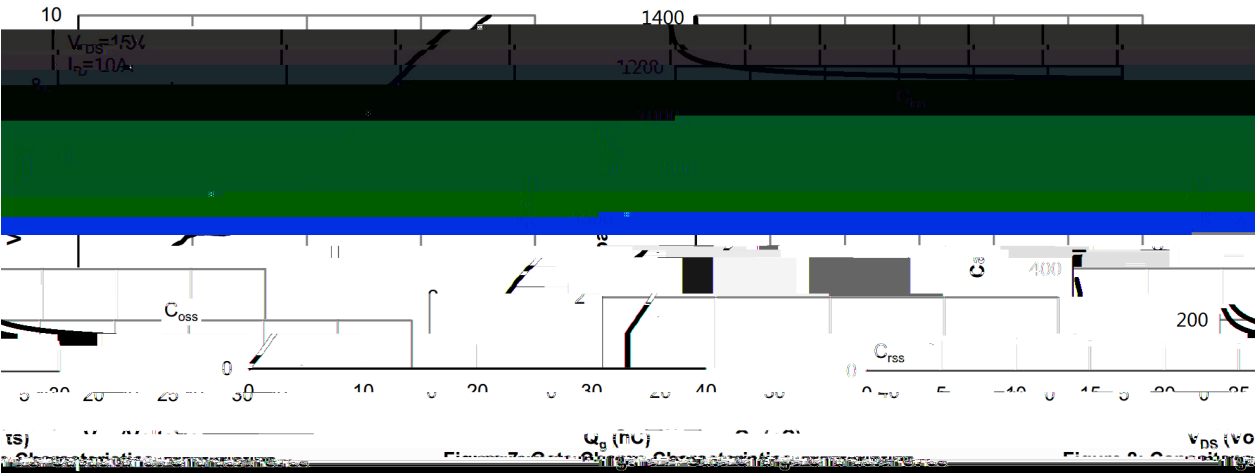


Figure 3- On-Resistance vs. Drain Current and Gate Voltage

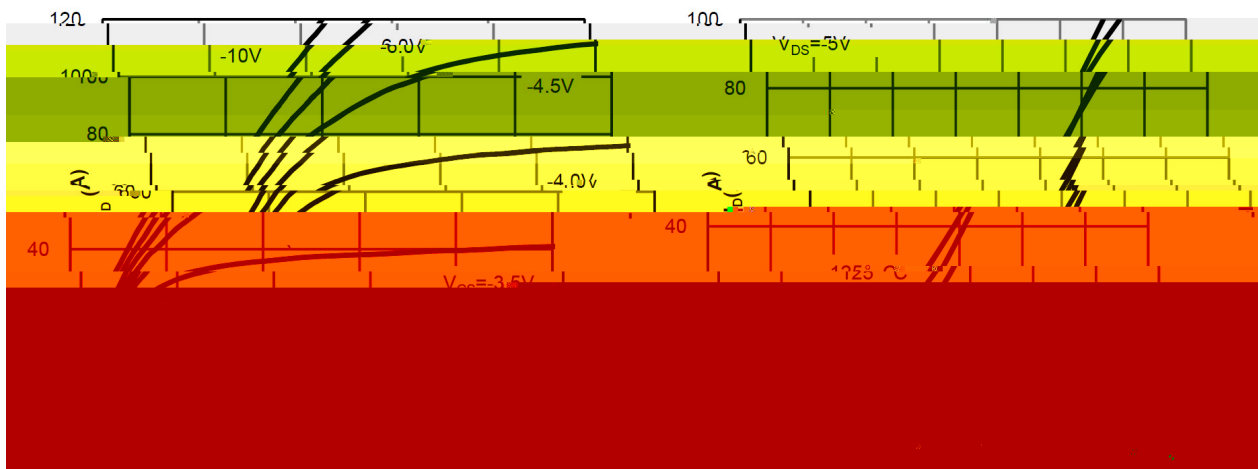
Figure 4- On-Resistance vs. Junction Temperature

N- / N-CHANNEL Electrical Characteristic Curve

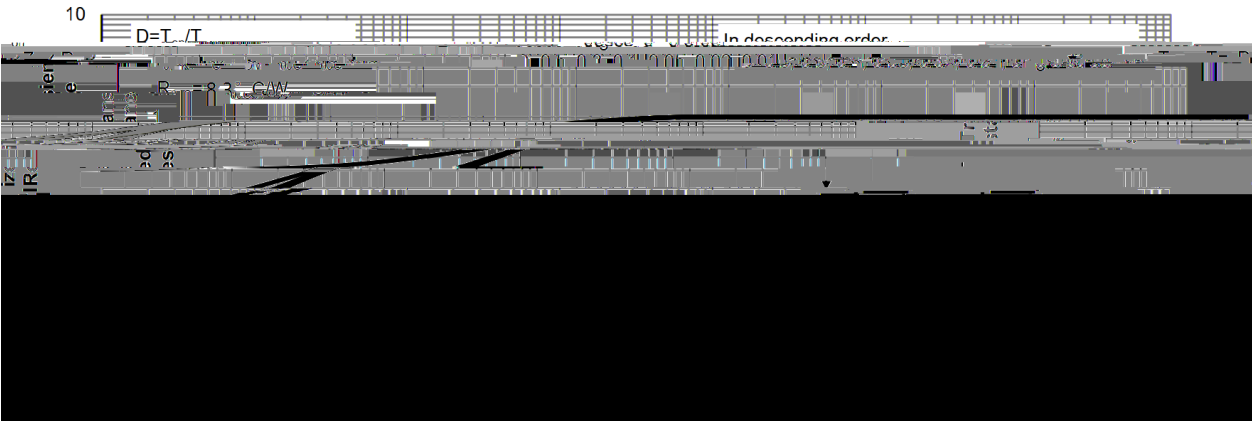
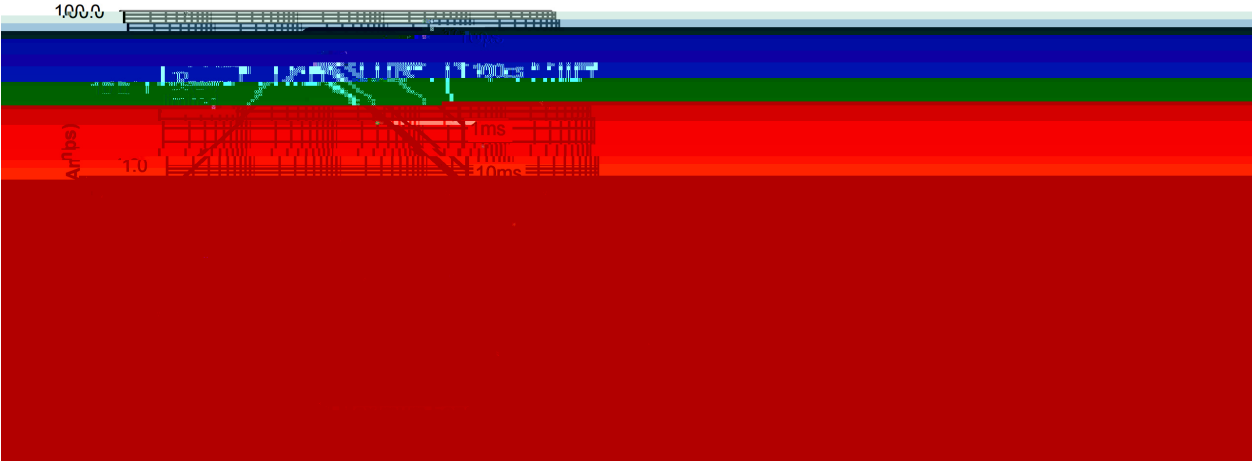
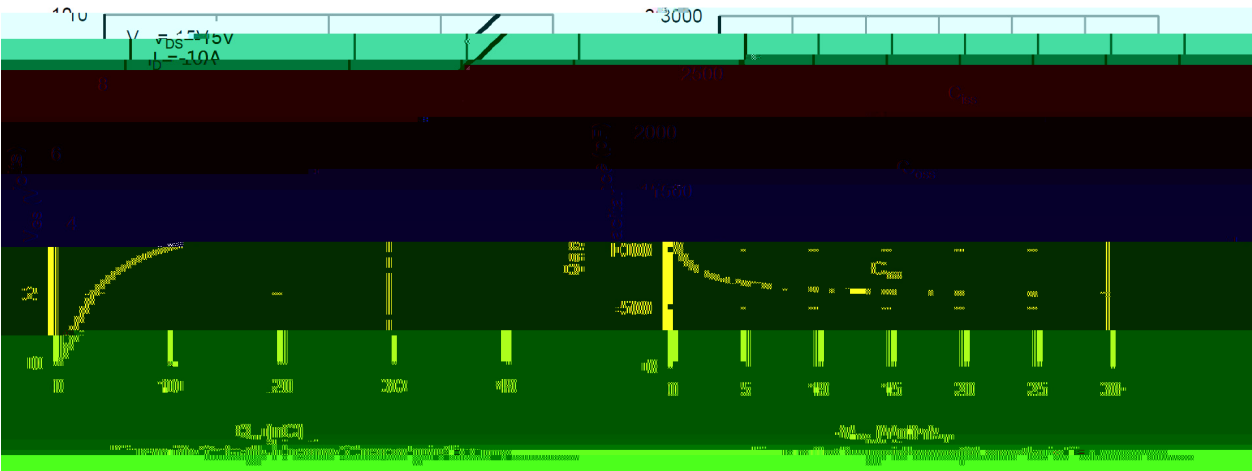


Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=-250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1.0	-1.5	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-10A$		12	13	m Ω
		$V_{GS}=-4.5V$ $I_D=-10A$		17	20	m Ω
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	$t_{d(on)}$	$V_{DS}=-15V$ $V_{GS}=-10V$ $R_L=1\Omega$ $R_{GEN}=3\Omega$		11		ns
Turn-On Rise Time	t_r			7.5		ns
Turn-Off Delay Time	$t_{d(off)}$					

P- / P-CHANNEL Electrical Characteristic Curve



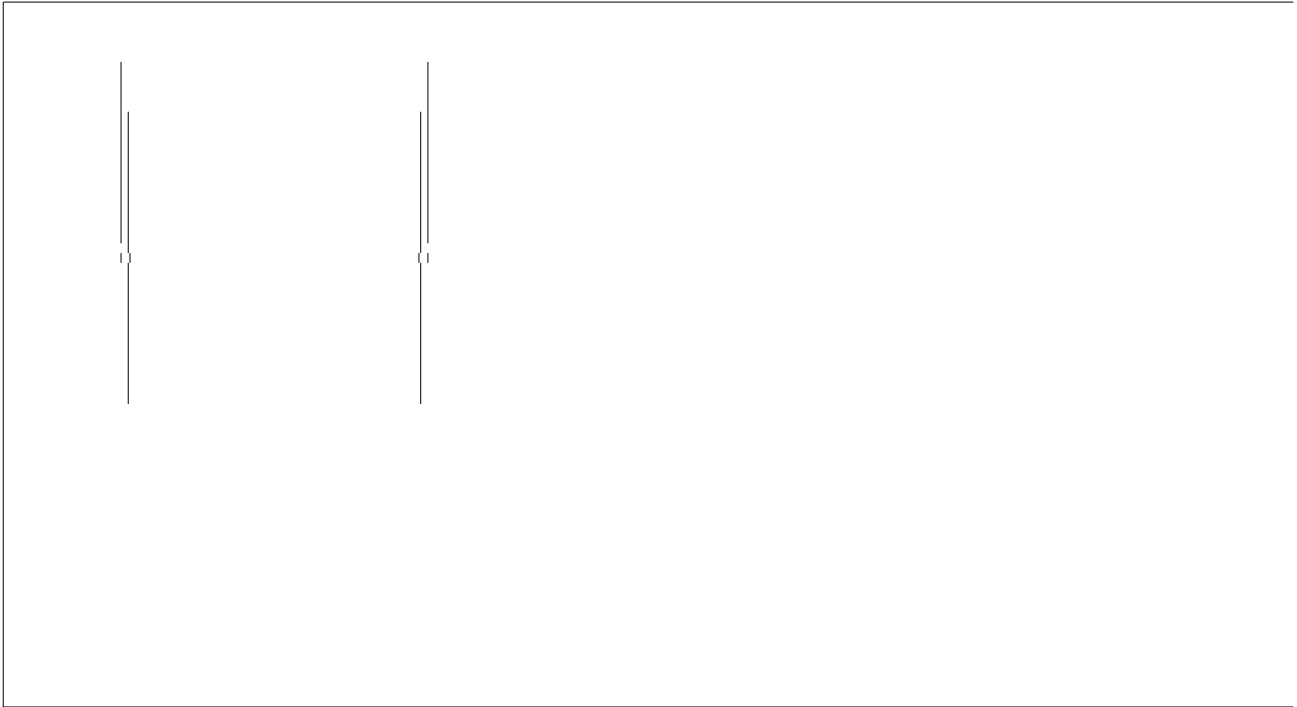
P- / P-CHANNEL Electrical Characteristic Curve



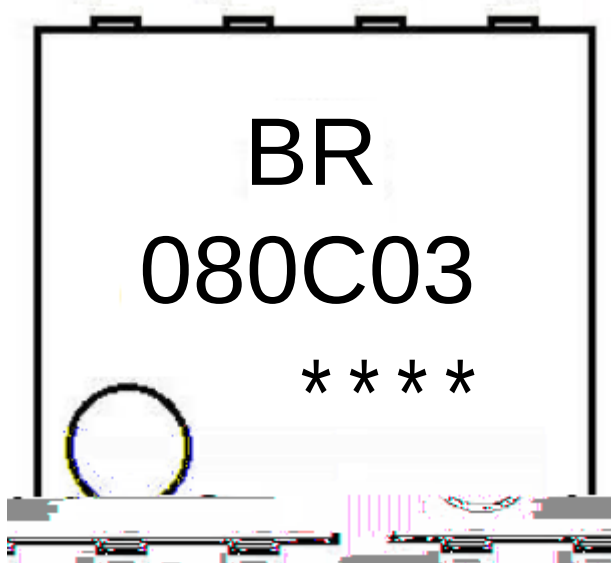
/ **Package Dimensions**

PDFN3X3-8L

Unit:mm



/ Marking Instructions



BR

080C03

Note:

BR: Company Code

080C03: Product Type Code

****: Lot No. Code, code change with Lot No

() / Temperature Profile for IR Reflow Soldering(Pb-Free)

- 1

150 180

60 90sec;
- 2

245±5

5±0.5sec;
- 3

2 10

/sec.
- Note:

1.Preheating:150~180 , Time:60~90sec.

2.Peak Temp.:245±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.