/ Descriptions

PDFN5×6A N

Dual N-CHANNEL MOSFET in a PDFN5×6A Plastic Package.

/ Features

V_{DS}(V)=30V I_D=41.5A

$R_{DS(ON)}$@10V<9mΩ(Typ. 6.8 mΩ)

$R_{DS(ON)}$@4.5V<15mΩ(Typ. 9.8 mΩ)

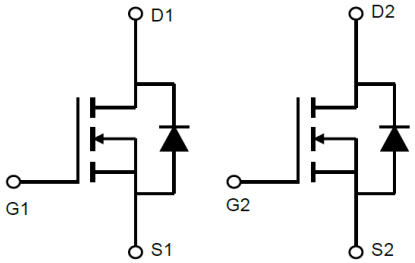
HF Product.

/ Applications

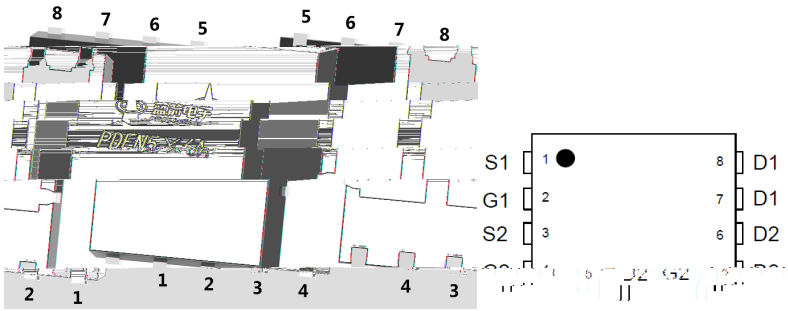
PWM LED

PWM Application, Load Switch, Power Management, Dimming LED.

/ Equivalent Circuit



/ Pinning



/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D(T_C=25)	41.5	A
Pulsed Drain Current	I_{DM}	131	A
Power Dissipation	P_D(T_C=25)	25	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150	
Maximum Junction-to-Ambient	$R_{\theta JA}$(≤ 10s)	45	/W
Maximum Junction-to-Ambient	$R_{\theta JA}$(Steady-State)	65	/W
Maximum Junction-to-Case	$R_{\theta JC}$(Steady-State)	5.0	/W

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	30	36		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V	V_{GS}=0V			1	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	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=10A		6.8	9	mΩ
		V_{GS}=4.5V	I_D=10A		9.8	15	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=1.0A			1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1.0MHz	V_{GS}=0V		1100		pF
Output Capacitance	C_{oss}				125		pF
Reverse Transfer Capacitance	C_{rss}				100		pF
Gate resistance	R_g	V_{DS}=0V f=1.0MHz	V_{GS}=0V		3		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V I_D=12A	V_{DS}=15V		14		nC
Total Gate Charge	$Q_{g(4.5V)}$				6.5		nC
Gate-Source Charge	Q_{gs}				2.3		nC
Gate-Drain Charge	Q_{gd}				3		nC

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=15 V V_{GS}=10V R_L=1.25Ω R_{GEN}=3Ω		4.5		ns
Turn-On Rise Time	t_r			10		ns
Turn-Off Delay Time	$t_{d(off)}$			15		ns

/ Electrical Characteristic Curve

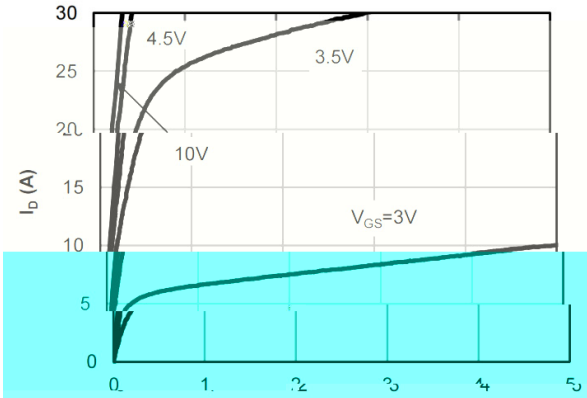


Figure 1: On-Region Characteristics

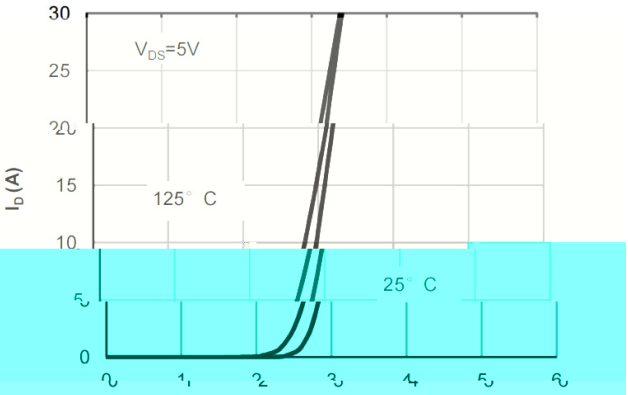


Figure 2: Transfer Characteristics

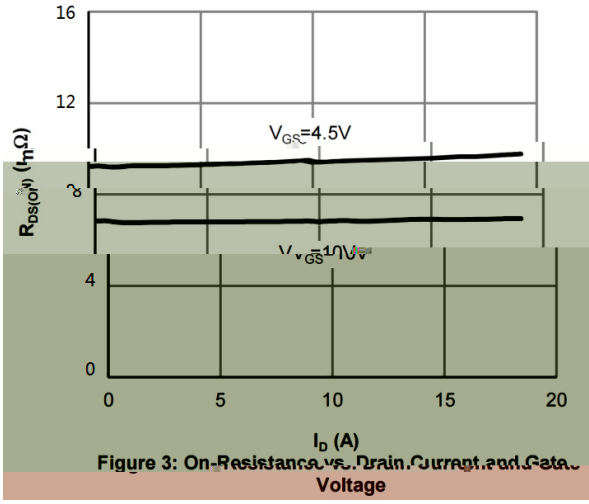


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

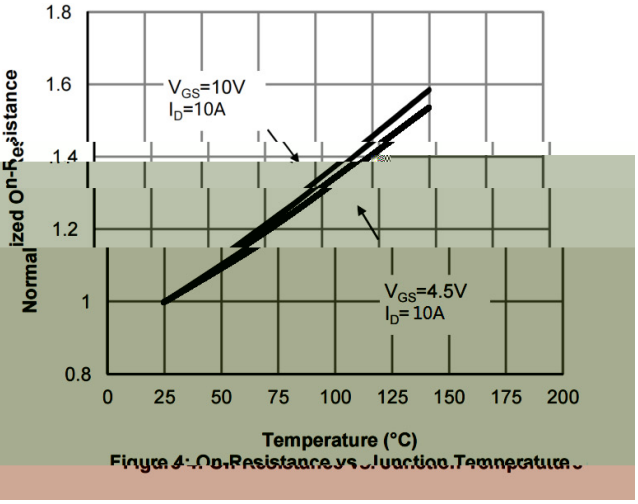


Figure 4: On-Resistance vs. Junction Temperature

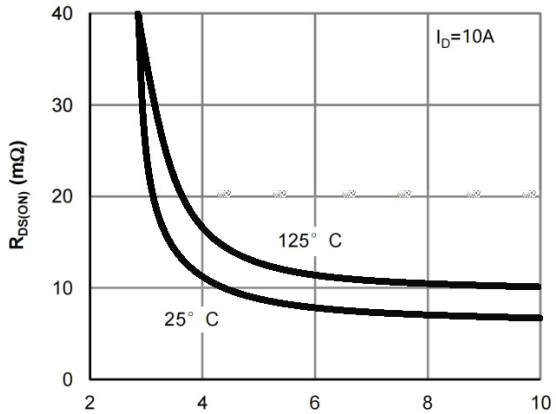


Figure 5: On-Resistance vs. Gate-Source Voltage

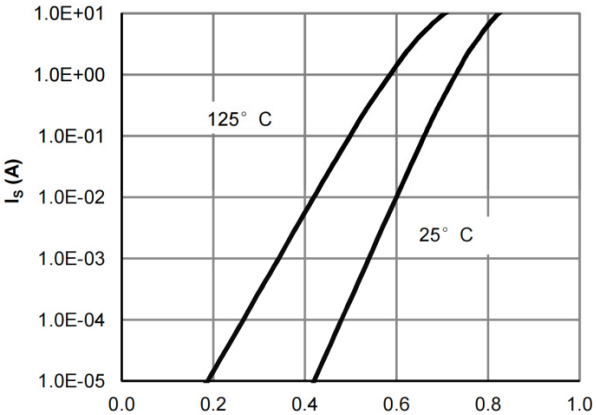


Figure 6: Body Diode Characteristics

/ Electrical Characteristic Curve

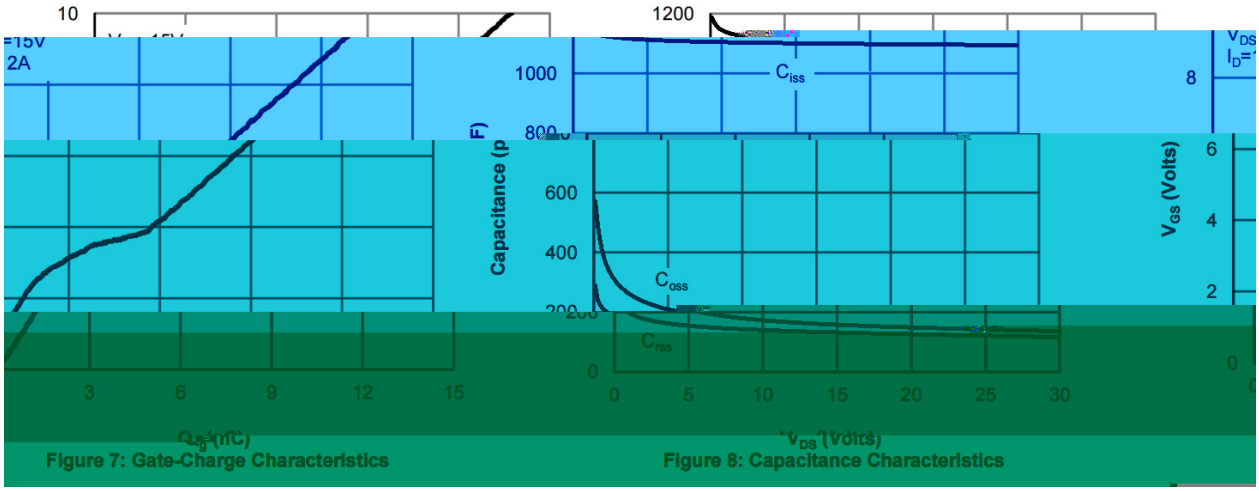
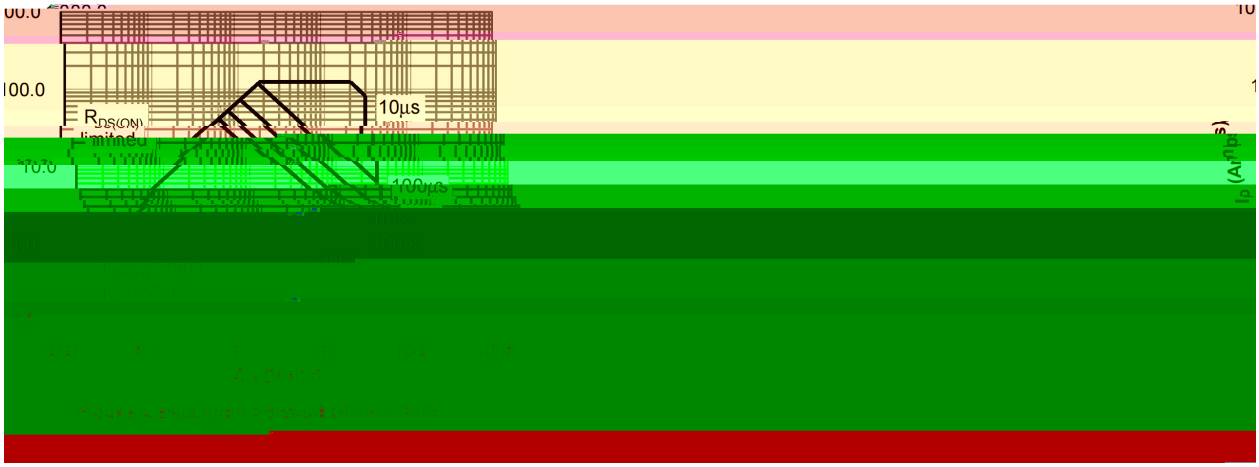
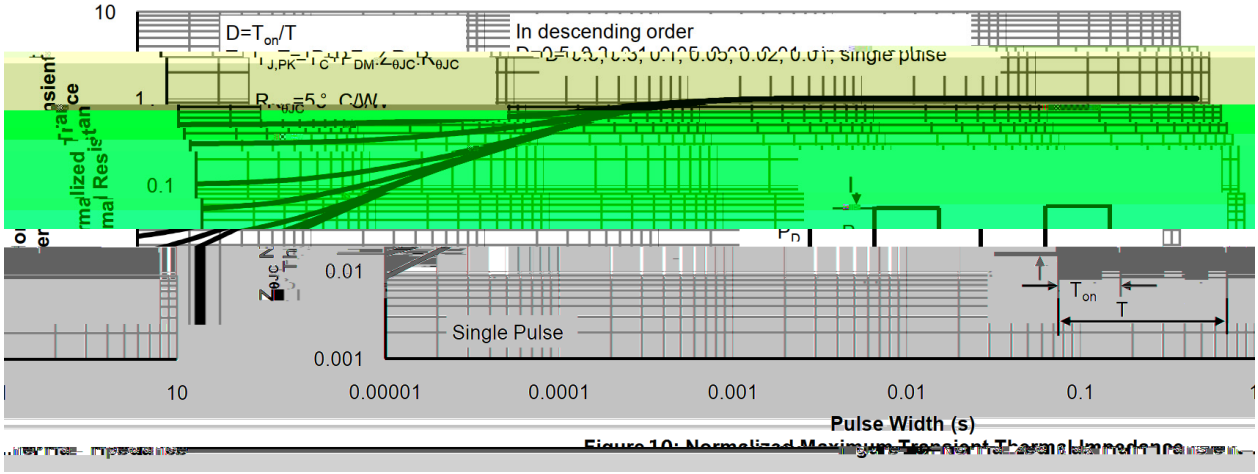


Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

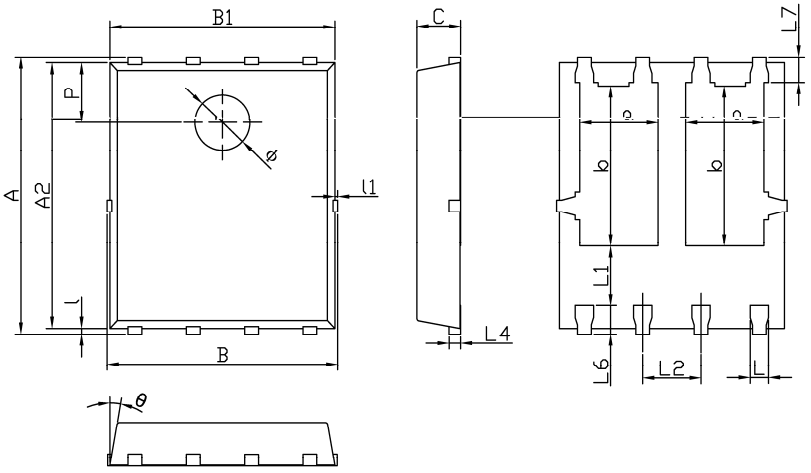




/ Package Dimensions

PDFN5X6A

Unit:mm



Dimensions In Millimeters			
Symbol	MIN	TYP	MAX
A	5.90	6.00	6.10
α	1.605	1.705	1.805
A2	5.70	5.75	5.80
B	4.90	5.00	5.10
b	3.375	3.475	3.575
B1	4.80	4.90	5.00
C	0.90	0.95	1.00
L	0.30	0.40	0.50
l	0.06	0.13	0.20
L1	1.10	–	–
l1	–	–	0.10
L2	1.17	1.27	1.37
L4	0.21	0.26	0.34
L6	0.51	0.61	0.71
L7	0.45	0.55	0.65
P	1.15	1.30	145
θ	8°	10°	12°
Φ	1.10	1.20	1.30

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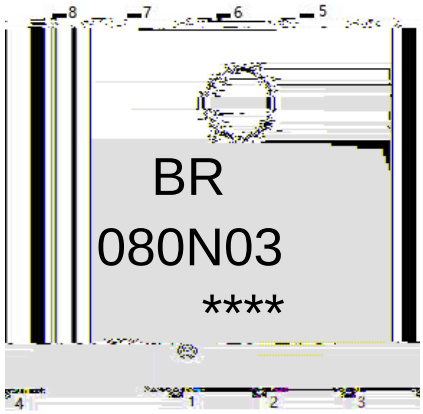
/ Marking Instructions



BR

080N03

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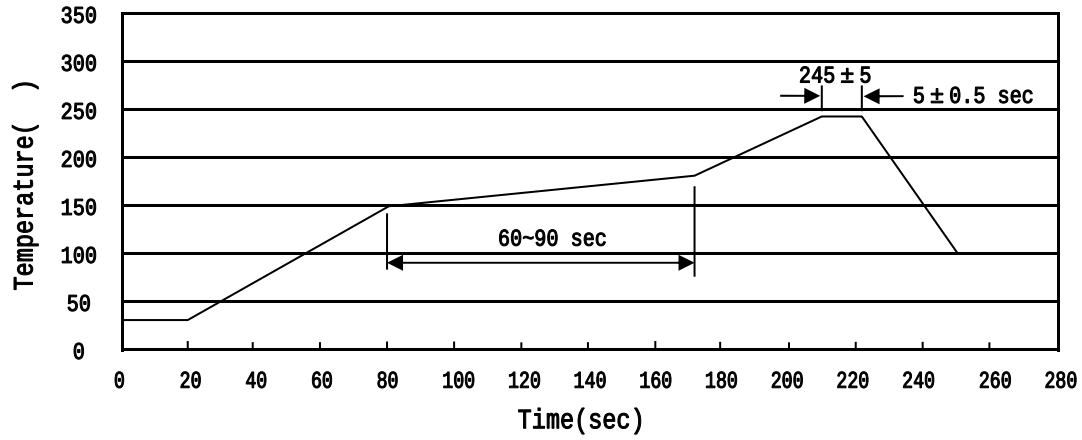
Note

BR	Company Code
080N03	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.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
PDFN5×6A	5,000	2	10,000	6	60,000	13''×12	360×360×50	380×335×366

/ Notices