

/ Descriptions

PDFN5Ø6–Clip N

N-Channel MOSFET in a PDFN5×6–Clip Plastic Package.

/ Features

$V_{DS}(V)=40V$ $I_D=200A$

$R_{DS(ON)}@10V \leq 0.8m\Omega$ (Typ. $0.65m\Omega$)

$R_{DS(ON)}@4.5V \leq 1.3m\Omega$ (Typ. $1.1m\Omega$)

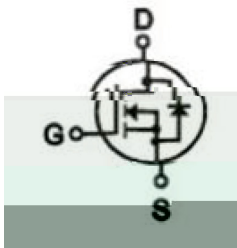
HF Product.

/ Applications

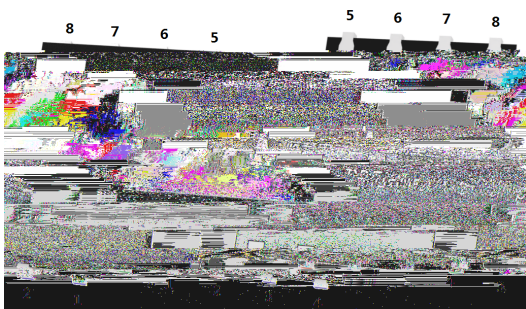
DC-DC

Motor drivers, DC-DC Converter.

/ Equivalent Circuit



/ Pinning



PIN1 2 3 S PIN4 G PIN5 6 7 8 D

/ Marking

See Marking Instructions.



Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current ^① ②	$I_D(T_C=25^{\circ}\text{C})$	200	A
	$I_D(T_C=100^{\circ}\text{C})$	200	A
Drain Current – Pulsed ^① ③ ④	$I_{DM}(T_C=25^{\circ}\text{C})$	800	A
Power Dissipation ^⑤	$P_D(T_C=25^{\circ}\text{C})$	150	W
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to 175	$^{\circ}\text{C}$
Diode Forward Current	$I_S(T_C=25^{\circ}\text{C})$	200	A
Single Pulsed Avalanche Energy(L=1.0mH)	E_{AS}	1012	mJ
Thermal resistance, junction – ambient ^⑥	$R_{\theta JA}$	56	$^{\circ}\text{C}/\text{W}$
Thermal resistance, junction – case ^⑥	$R_{\theta JC}$	1	

Note:

1. Surface Mounted on 1 in² pad area, $t \leq 10$ sec
2. Pulse width $\leq 10 \mu\text{s}$, duty cycle $\leq 1\%$
3. limited by bonding wire

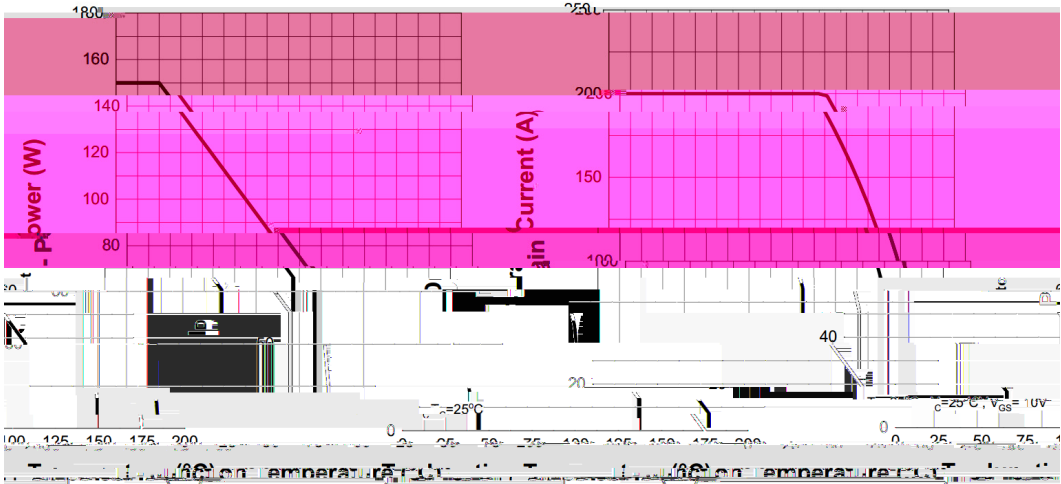
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0		2.5	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=32V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=30A$		0.65	0.8	m Ω
		$V_{GS}=4.5V$ $I_D=20A$		1.1	1.3	m Ω

Drain-Source Diode Forward

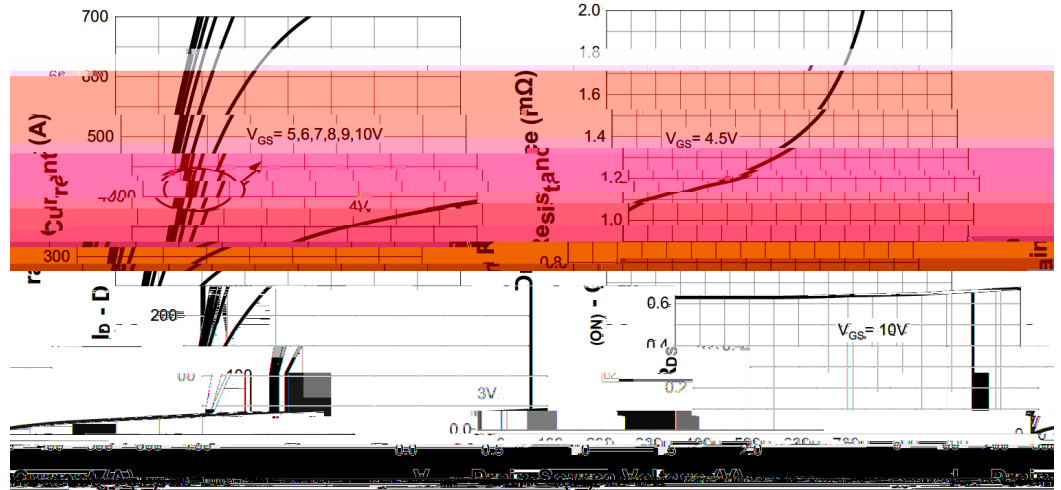
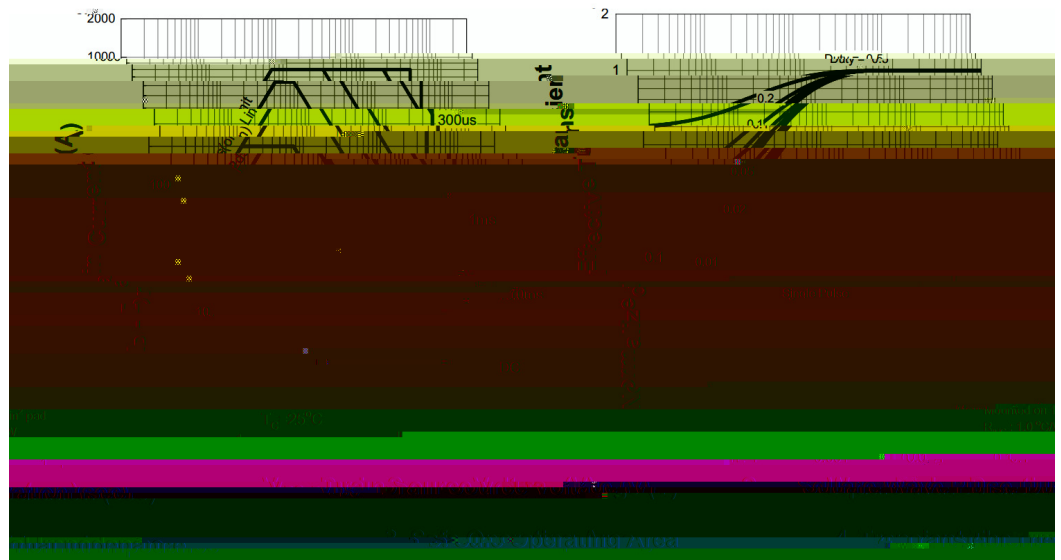

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=0.66\Omega$ $R_{GEN}=3.9\Omega$ $I_{DS}=30A$		54		ns
Turn-On Rise Time	t_r			65		
Turn-Off Delay Time	$t_{d(off)}$			101		
Turn-Off Fall Time	t_f			73		
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=20V$ $I_D=30A$		114		nC
Gate Source Charge	Q_{gs}			23		
Gate Drain Charge	Q_{gd}			25		

/ Electrical Characteristic Curve



1. Power Capability vs. Temperature, 2. Current Capability vs. Temperature



acteristics

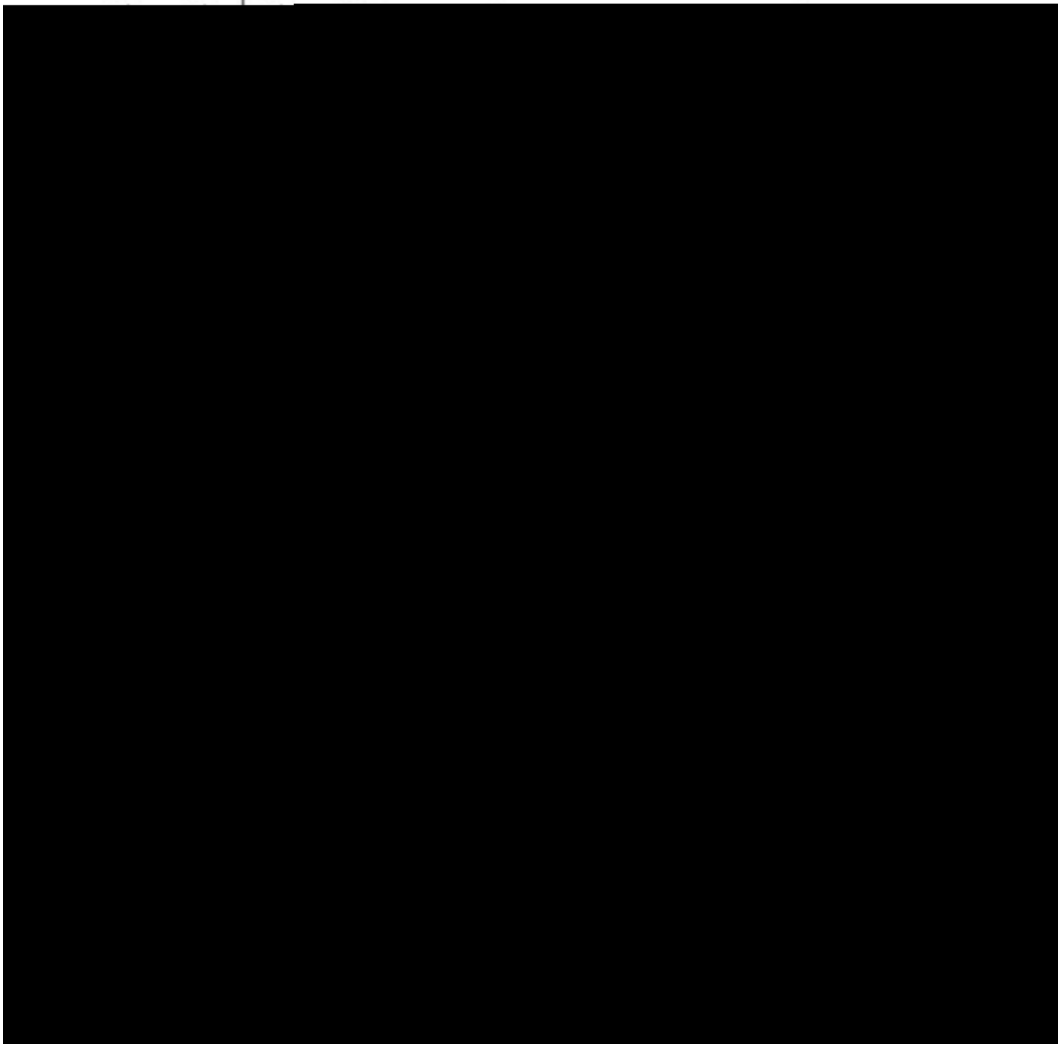
6. On Resistance

5. Output Char



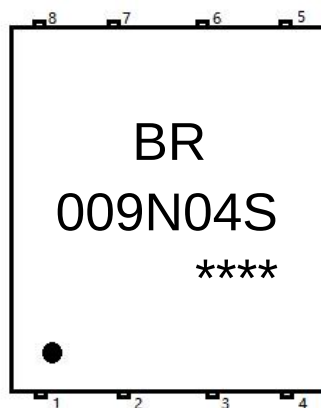
/ Electrical Characteristic Curve

/ Package Dimensions



Dimensions in Millimeters			
		MIN.	MAX.
	A	1.03	1.17
U48		0.24	0.40
A Q7A			A 824
4.80		5.40	D
4.11		4.31	D1
		5.95	6.15
E1		5.85	5.85
E2		1.40	
F		1.24	RSC
25	L	0.05	0.
50	L1	0.38	0.
71	L2	0.38	0.
50	H	3.30	3.
18	I		0.

/ Marking Instructions



EU

009N04S

Note

BR

Company Code

009N04S

Product Type Code

****:

Lot No. Code, code change with Lot No.

Reflow Profile for IR Reflow Soldering(Pb-Free)

Note:

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

Soldering Heat Test Conditions

Temp.:260±5

Time:10±1 sec

	Dimension	(unit mm ³)
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