

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
150V	9.2mΩ@10V	70A

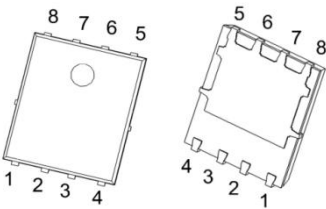
Feature

- Fast Switching
- Low Gate Charge and R_{ds(on)}
- 100% Single Pulse avalanche energy Test

Applications

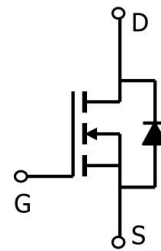
- Power switching application
- DC-DC Converter
- Power Management

Package

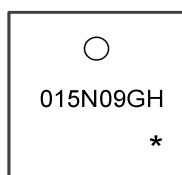


PDFN5X6-8L

Circuit diagram



Marking



015N09GH : Product code
* : Month code

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

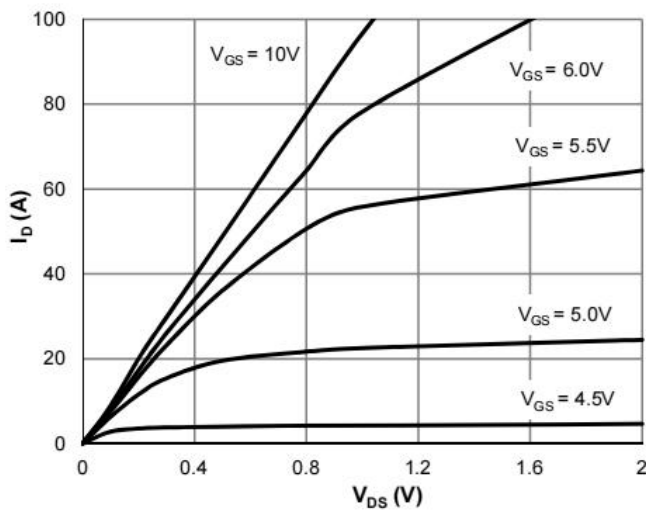
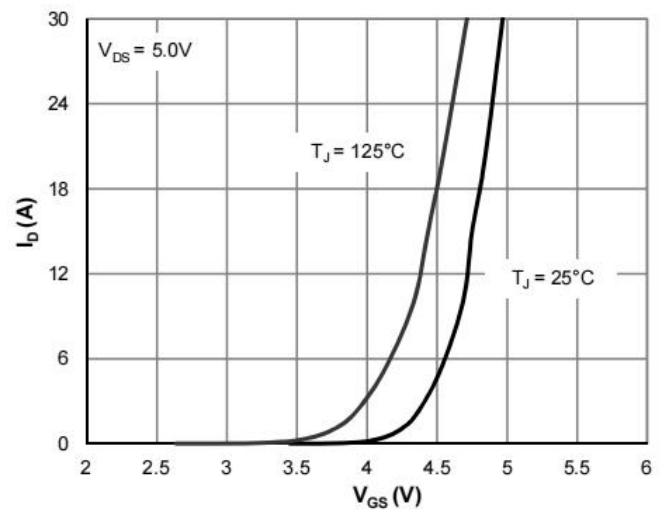
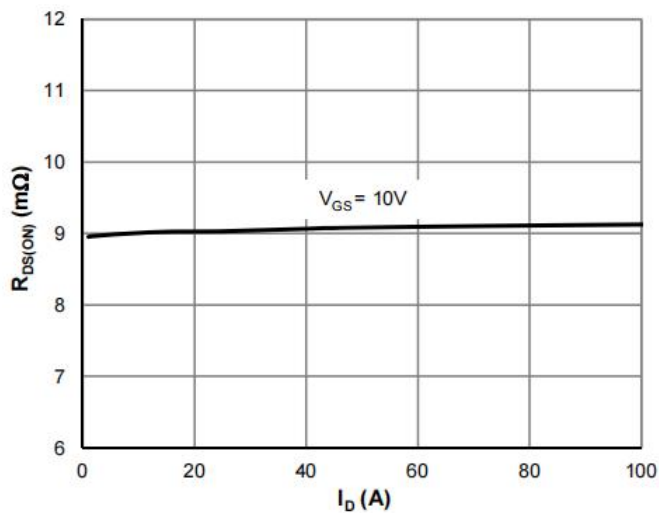
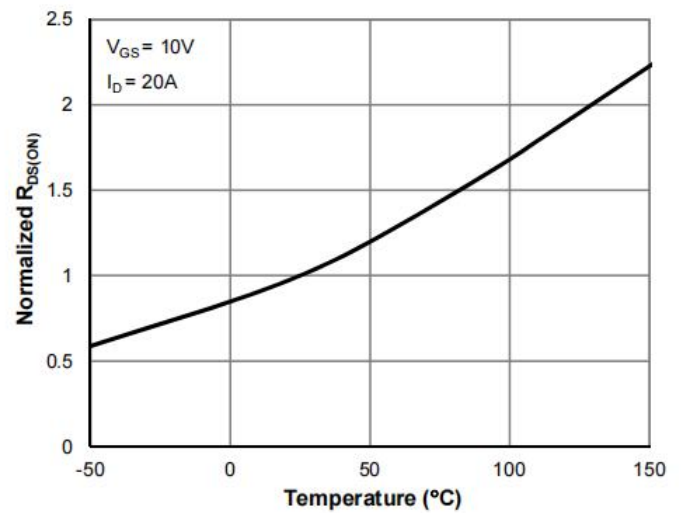
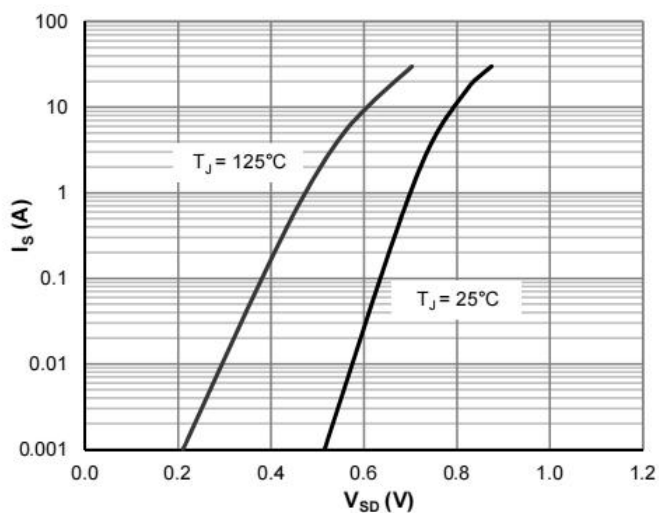
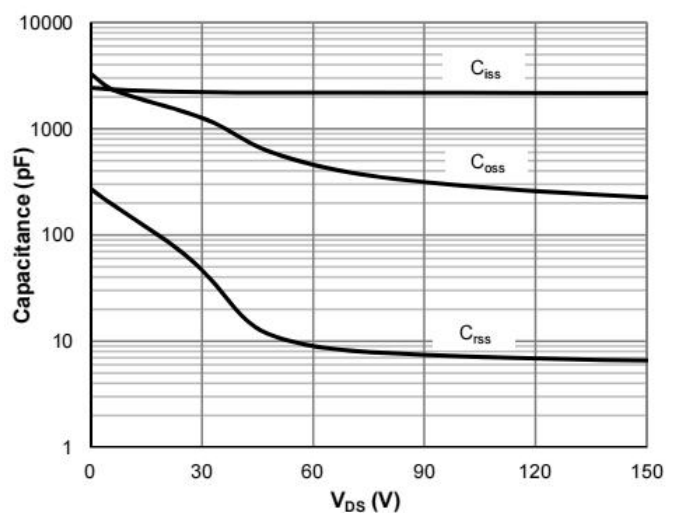
Parameter	Symbol	Rating	Unit
Drain source voltage	V_{DS}	150	V
Gate source voltage	V_{GS}	± 20	V
Continuous drain current($T_c=25^\circ\text{C}$)	I_D	70	A
Pulsed drain current	I_{DM}	280	A
Power dissipation($T_c=25^\circ\text{C}$)	P_D	170	W
Single pulsed avalanche energy ¹⁾	E_{AS}	961	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	0.73	$^\circ\text{C/W}$
Operation and storage temperature	T_{stg}, T_j	-55 to 150	$^\circ\text{C}$

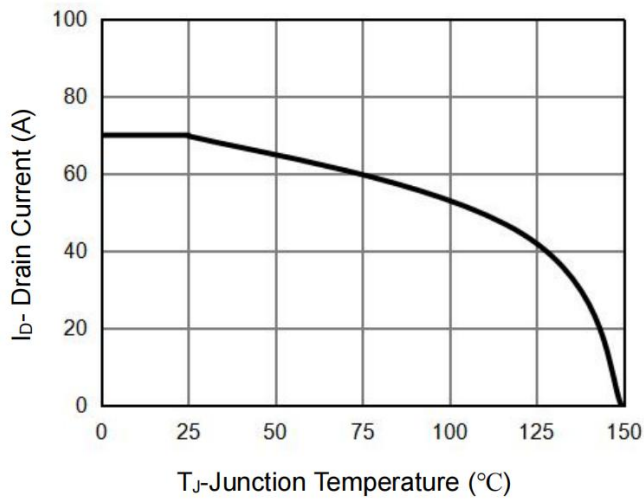
Electrical characteristics (Ta=25°C, unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu\text{A}, V_{GS} = 0\text{V}$	150	-	-	V
Drain Cut-Off Current	I_{DSS}	$V_{DS} = 120\text{V}, V_{GS} = 0\text{V}$	-	-	1	μA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$	-	-	± 0.1	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	2.0	3.0	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{V}, I_D = 20\text{A}$	-	9.2	11.5	$\text{m}\Omega$
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 75\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$	-	2800	-	pF
Output Capacitance	C_{oss}		-	290	-	
Reverse Transfer Capacitance	C_{rss}		-	9	-	
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 75\text{V}, V_{GS} = 10\text{V}, I_D = 20\text{A}$	-	24	-	nC
Gate-Source Charge	Q_{gs}		-	6.2	-	
Gate-Drain Charge	Q_{gd}		-	5.2	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 10\text{V}, V_{DS} = 75\text{V}, R_L = 3.5\Omega, R_G = 6.0\Omega$	-	13	-	ns
Rise Time	t_r		-	25	-	
Turn-Off Delay Time	$t_{d(off)}$		-	31	-	
Fall Time	t_f		-	25	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 1\text{A}, V_{GS} = 0\text{V}$	-	-	1.2	V

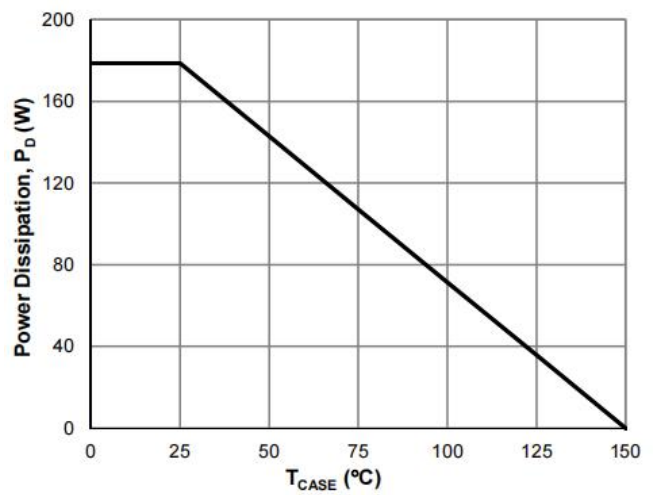
Note:

- E_{AS} is tested at starting $T_j = 25^\circ\text{C}$, $V_{DD} = 75\text{V}, V_{GS} = 10\text{V}, L = 0.5\text{mH}, R_g = 25\text{m}\Omega$;

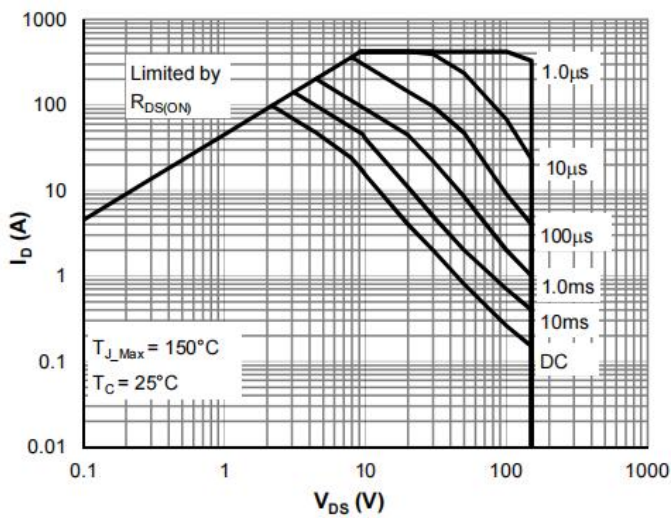
Typical Characteristics

Typical Output Characteristics

Transfer Characteristics

On-Resistance vs. Drain Current

On-Resistance vs. Junction Temperature

Body-Diode Characteristics

Capacitance Characteristics



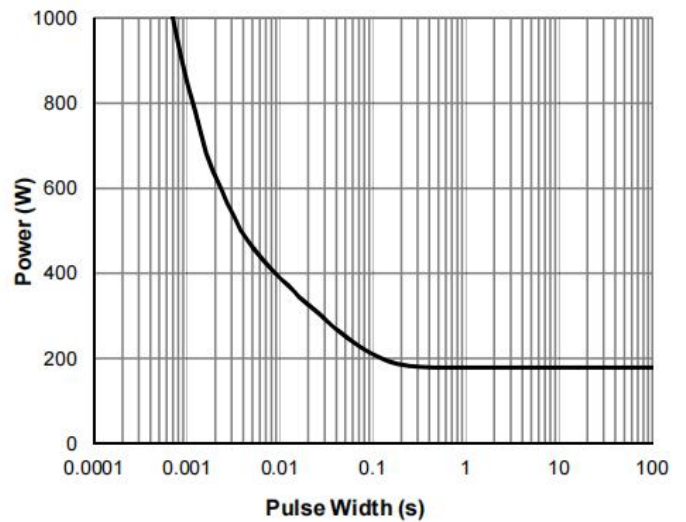
Current De-rating



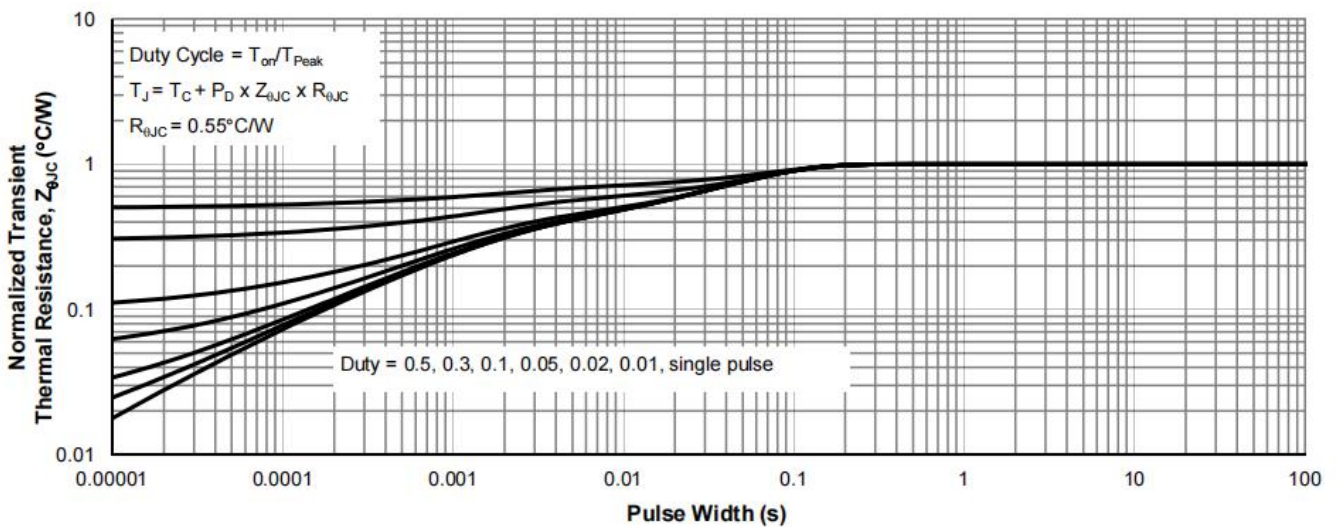
Power De-rating



Maximum Safe Operating Area



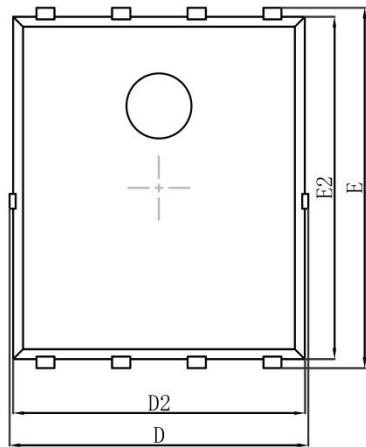
Single Pulse Power Rating, Junction-to-Case



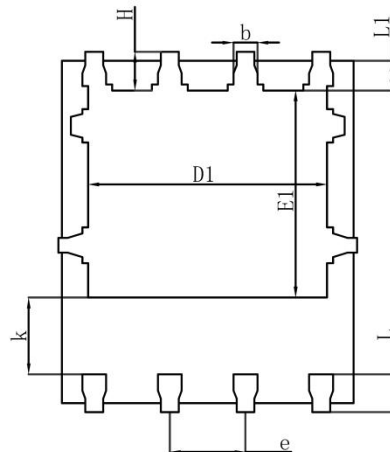
Normalized Maximum Transient Thermal Impedance



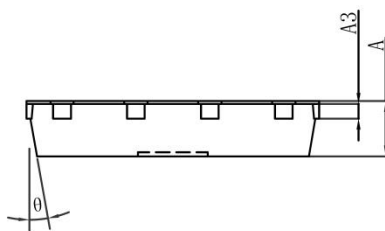
PDFN5X6-8L Package Outline Dimensions



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	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

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