

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
40V	5mΩ@10V	55A
	8mΩ@4.5V	

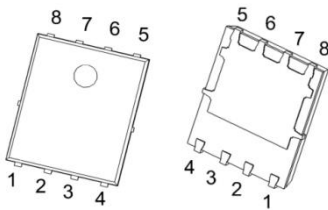
### Feature

- Fast switching speed
- Low On-Resistance
- 100% Single Pulse avalanche energy Test

### Applications

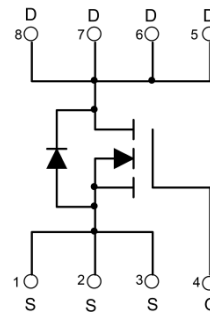
- DC-DC Converters.
- Power Management

### Package

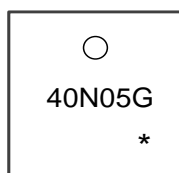


PDFN5X6-8L

### Circuit diagram



### Marking



40N05G =Device Code  
\* =Month Code

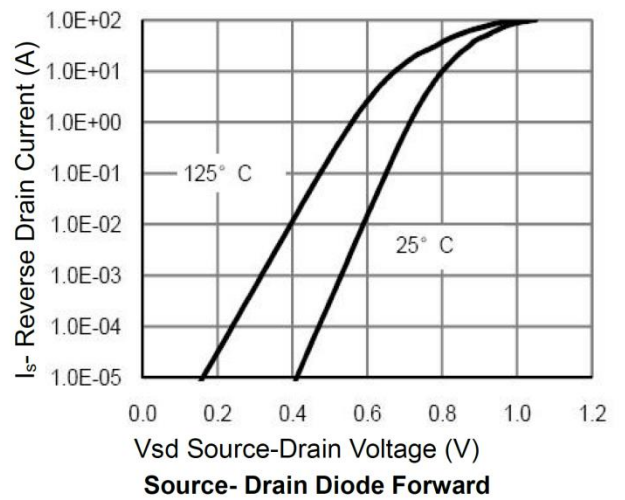
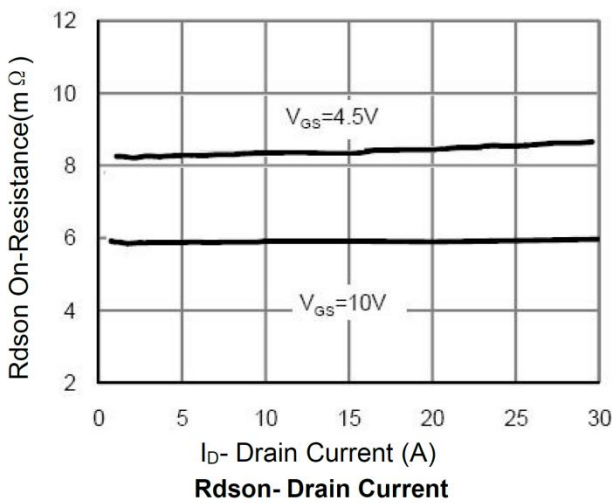
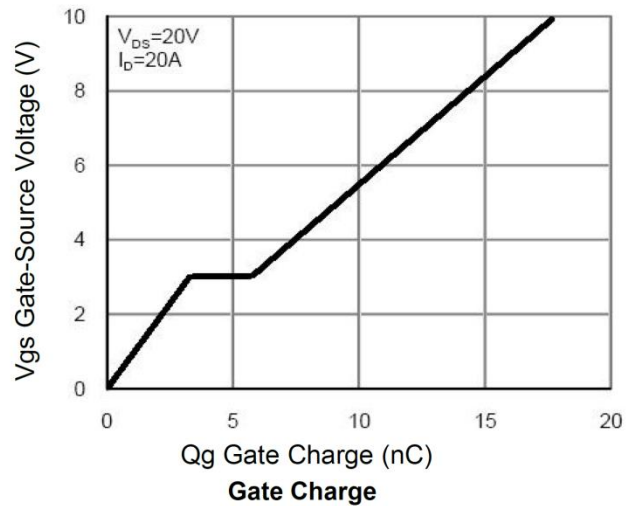
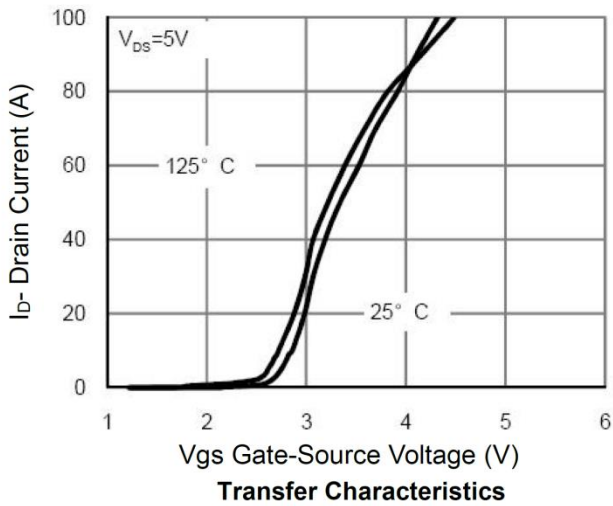
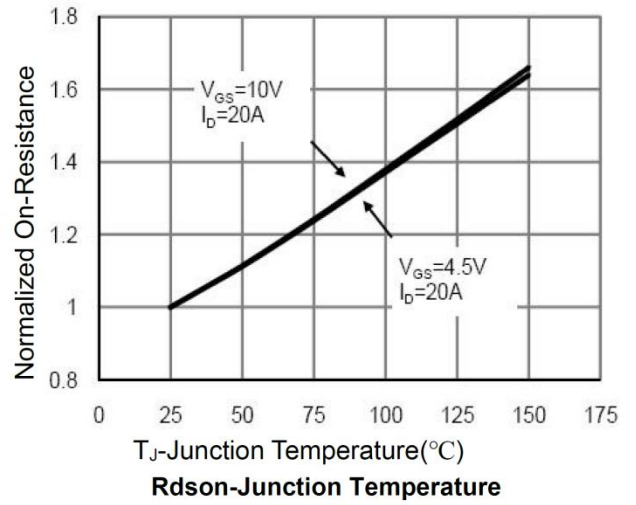
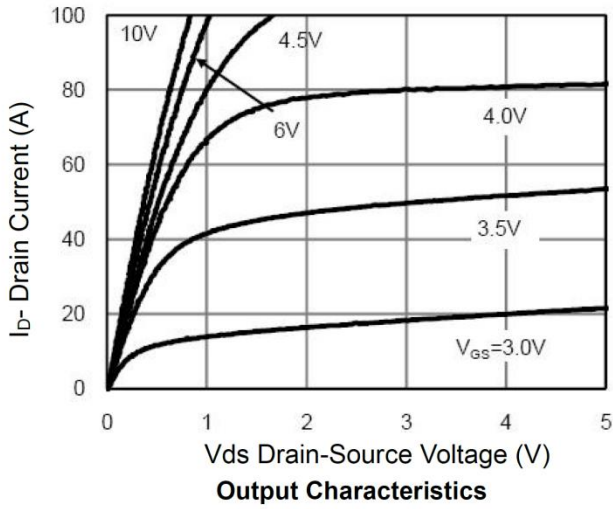
**Absolute maximum ratings (Ta=25°C, unless otherwise noted)**

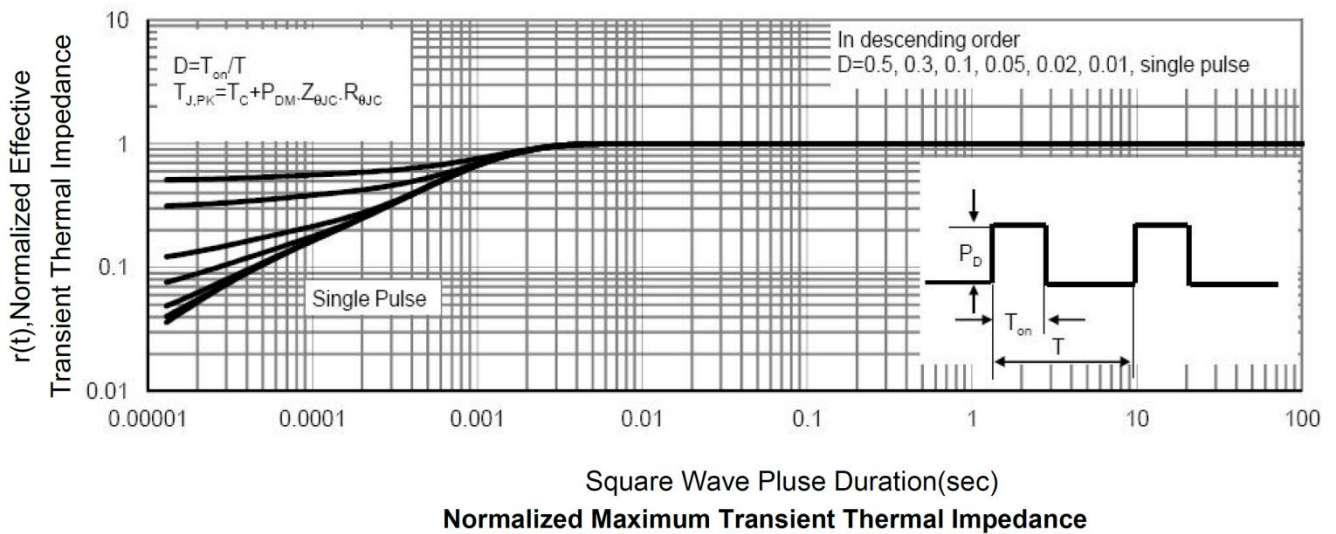
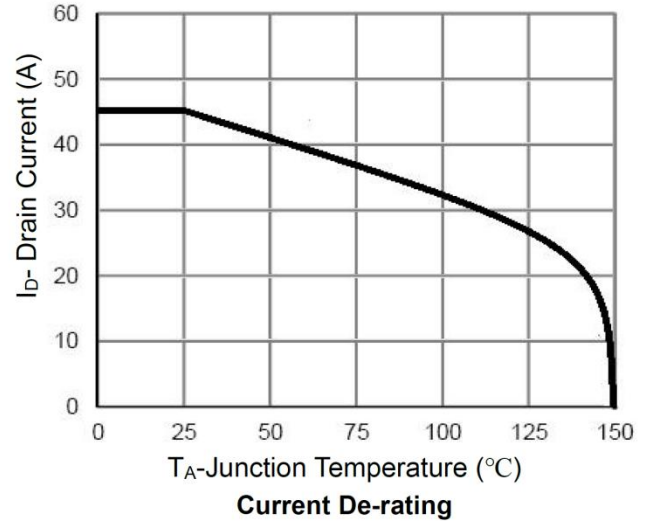
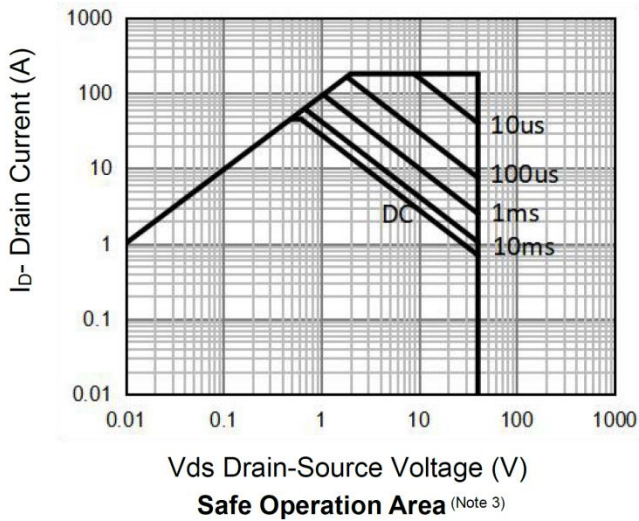
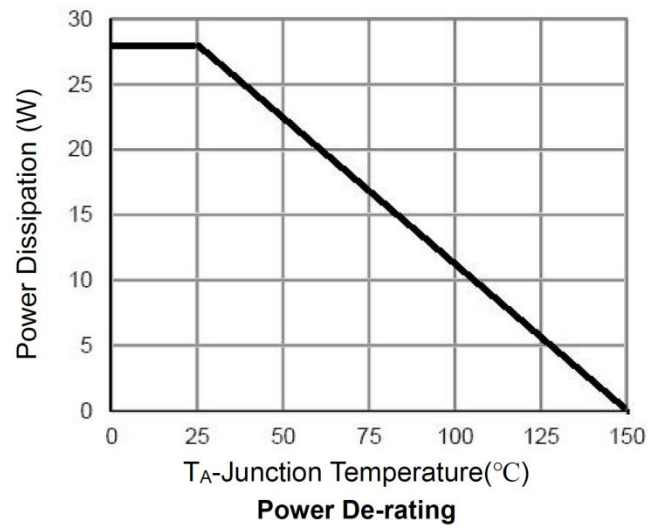
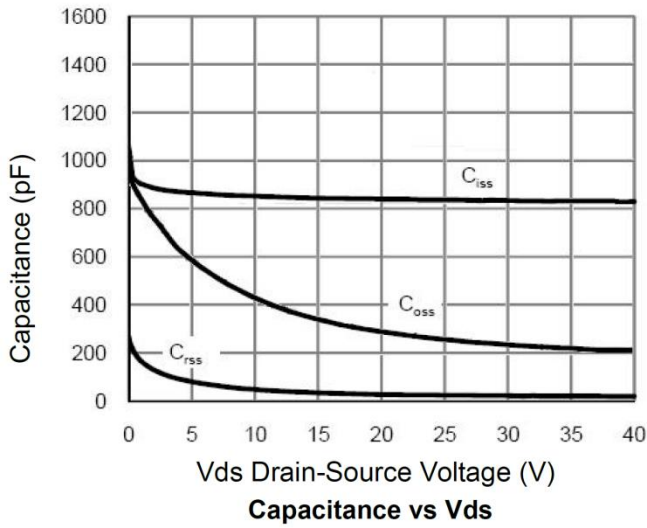
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	40	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current (Tc=25°C)	$I_D$	55	A
Pulse Drain Current Tested	$I_{DM}$	220	A
Maximum Power Dissipation (Tc=25°C)	$P_D$	45	W
Thermal Resistance-Junction to Case	$R_{\theta JC}$	2.77	°C/W
Maximum Junction Temperature	$T_J$	-55 to 150	°C
Storage Temperature Range	$T_{STG}$	-55 to 150	°C

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static Electrical Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250mA$	40	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=40V, V_{GS}=0V$	-	-	1	$\mu A$
Gate Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	-	5	8	$m\Omega$
		$V_{GS}=4.5V, I_D=10A$	-	8	11	
<b>Dynamic and Switching Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{GS}=0V, V_{DS}=20V, F=1MHz$	-	1278	-	pF
Output Capacitance	$C_{oss}$		-	583	-	
Reverse Transfer Capacitance	$C_{rss}$		-	49	-	
Total Gate Charge	$Q_g$	$V_{DS}=20V, V_{GS}=10V, I_D=20A$	-	25	-	nC
Gate-Source Charge	$Q_{gs}$		-	5.4	-	
Gate-Drain Charge	$Q_{gd}$		-	3.2	-	
Turn-on Delay Time	$t_{d(ON)}$	$V_{DD}=20V, I_D=20A, V_{GS}=10V, R_G=1.6\Omega$	-	6	-	nS
Turn-on Rise Time	$t_r$		-	2.5	-	
Turn-off Delay Time	$t_{d(OFF)}$		-	22	-	
Turn-off Fall Time	$t_f$		-	3.5	-	
<b>Source-Drain Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$I_S=1A, V_{GS}=0V$	-	-	1.2	V

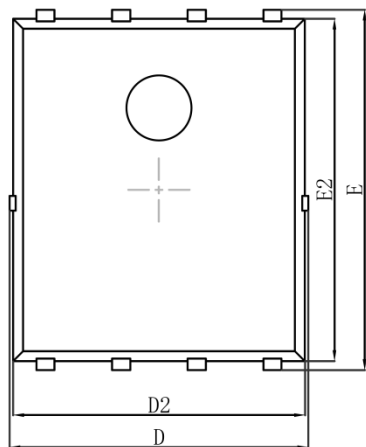
**Typical Characteristics**



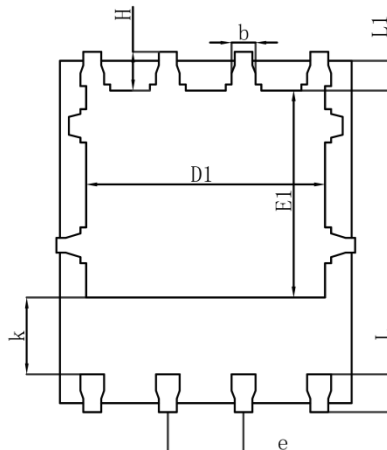




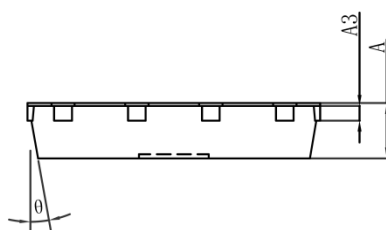
PDFN5X6-8L Package Information



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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