

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	35mΩ@10V	23A
	40mΩ@4.5V	

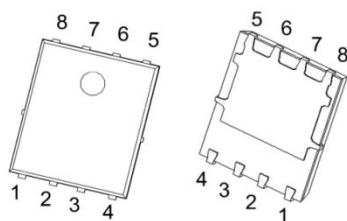
Feature

- Low Gate Charge
- Advanced High Cell Density Trench Technology
- 100% Single Pulse avalanche energy Test

Application

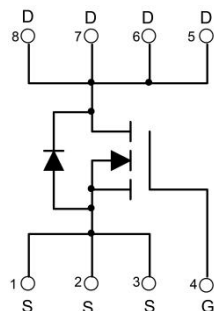
- Power Management Switches
- DC/DC Converters

Package

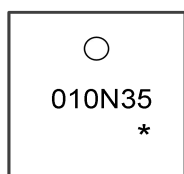


PDFN5X6-8L

Circuit diagram



Marking



010N35 : Product code
* : Month code.

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (Tc=25°C)	I_D	23	A
Pulsed Drain Current	I_{DM}	92	A
Single Pulse Avalanche Energy ¹	E_{AS}	72	mJ
Total Power Dissipation (Tc=25°C)	P_D	85	W
Thermal Resistance from Junction-to-Case	$R_{\theta JC}$	1.47	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

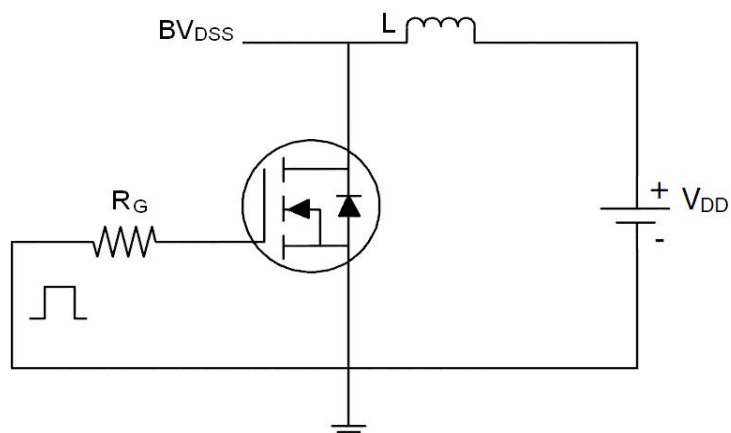
Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V ID=250μA	100	-	-	V
Zero Gate Voltage Drain Current	IDSS	VDS=80V,VGS=0V	-	-	1	μA
Gate-Body Leakage Current	IGSS	VGS=±20V,VDS=0V	-	-	±100	nA
Gate Threshold Voltage	VGS(th)	VDS=VGS,ID=250μA	1	1.5	2.5	V
Drain-Source On-State Resistance	RDS(ON)	VGS=10V, ID=10A	-	35	50	mΩ
		VGS=4.5V, ID=6A	-	40	55	
Dynamic Characteristics						
Input Capacitance	Ciss	VDS = 50V, VGS =0V, f =1MHz	-	2631	-	PF
Output Capacitance	Coss		-	102	-	
Reverse Transfer Capacitance	Crss		-	63	-	
Switching Characteristics						
Turn-on Delay Time	td(on)	VGS =10V, VDD =50V, RG = 3Ω, ID= 10A	-	9	-	nS
Turn-on Rise Time	tr		-	8	-	
Turn-Off Delay Time	td(off)		-	32	-	
Turn-Off Fall Time	tf		-	9	-	
Total Gate Charge	Qg	VGS = 10V,VDS = 50V, ID=25A	-	45	-	nC
Gate-Source Charge	Qgs		-	7.9	-	
Gate-Drain Charge	Qgd		-	8.7	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	VGS=0V,IS=1A	-	-	1.2	V

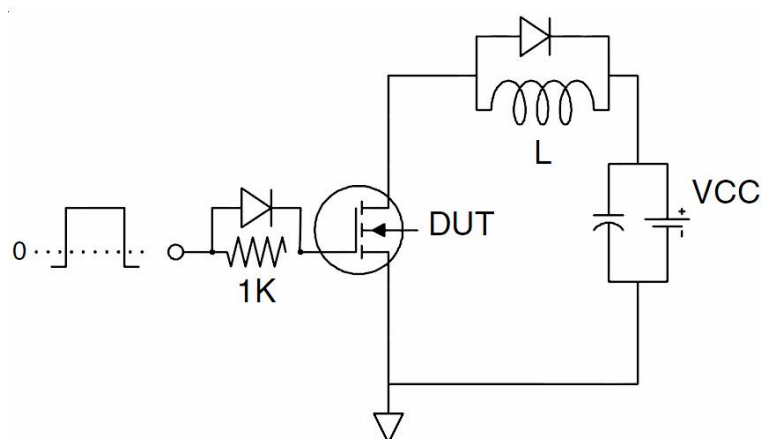
Notes:1. EAS condition: $V_{DD}=50V, V_{GS}=10V, L=0.5mH, R_g=25\Omega$

Test Circuit

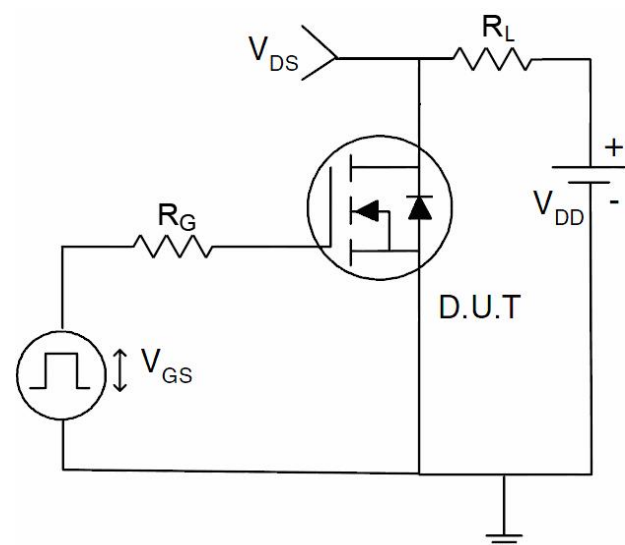
1) EAS Test Circuits



2) Gate Charge Test Circuit

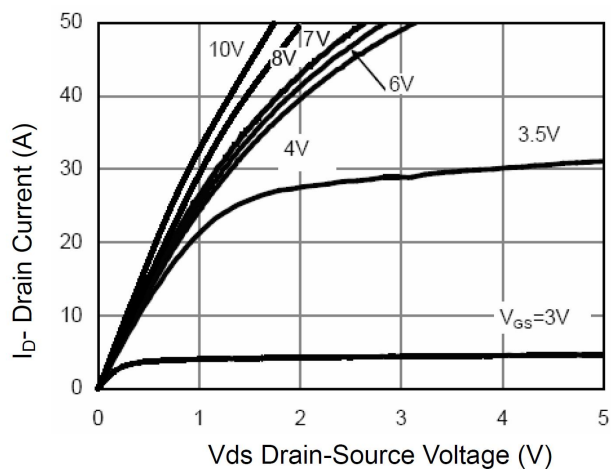


3) Switch Time Test Circuit

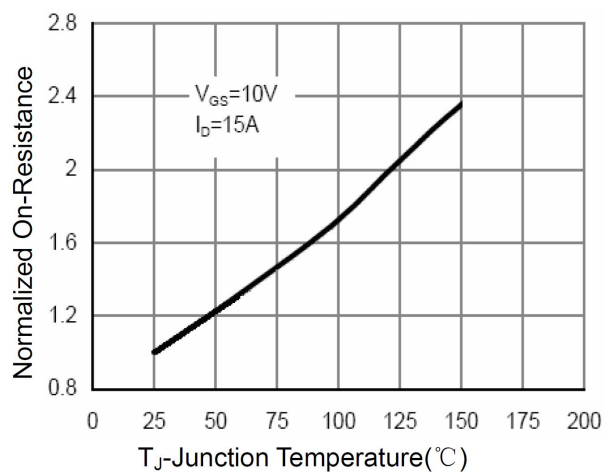




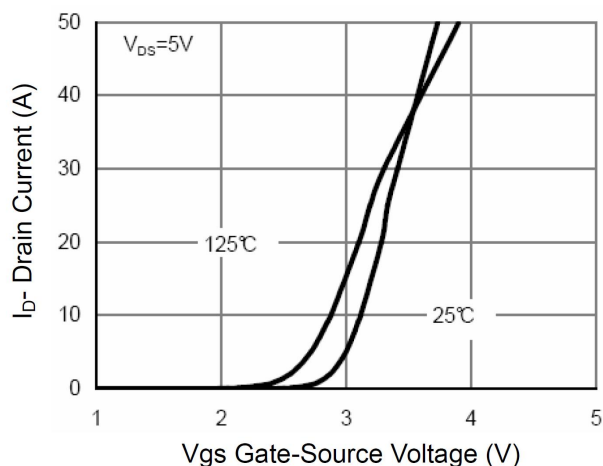
Typical Characteristics



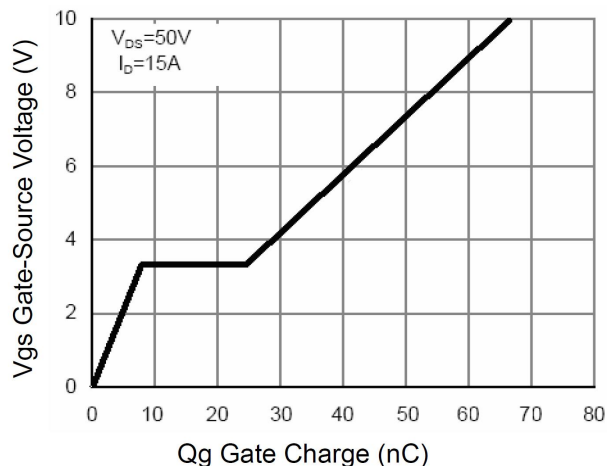
Output Characteristics



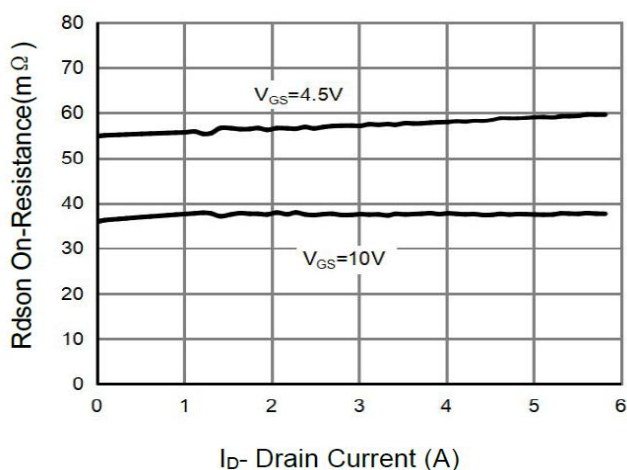
Rdson-Junction Temperature



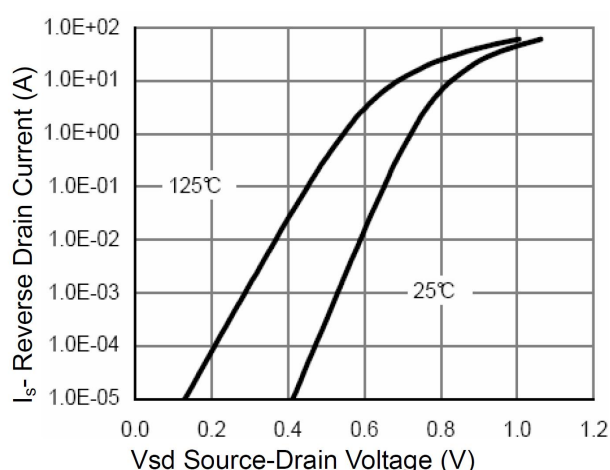
Transfer Characteristics



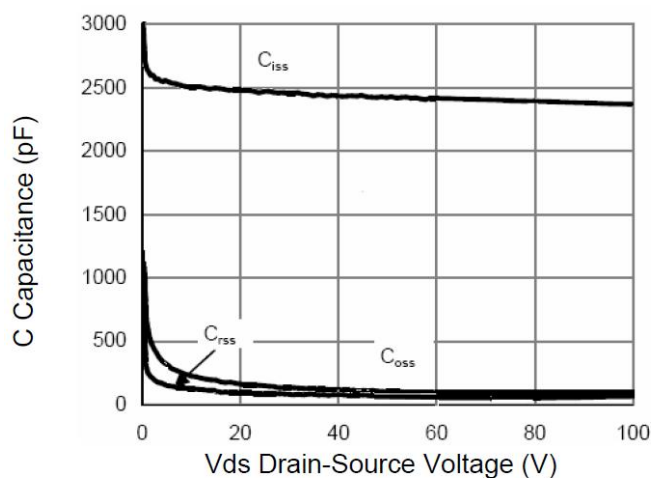
Gate Charge



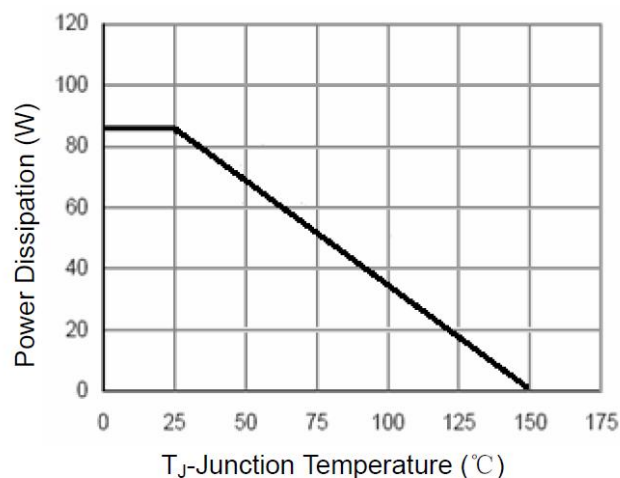
Drain-Source On-Resistance



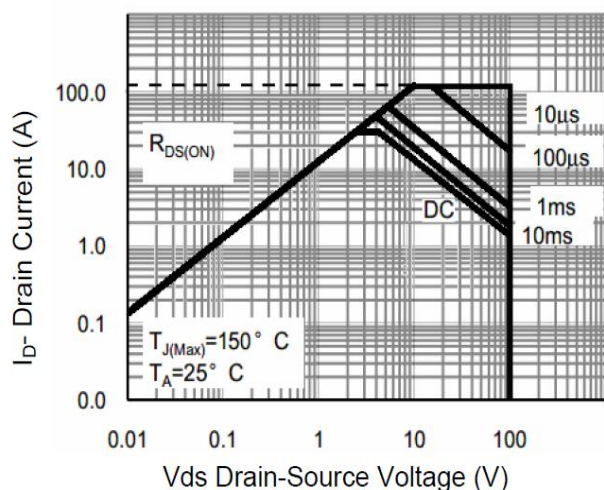
Source-Drain Diode Forward



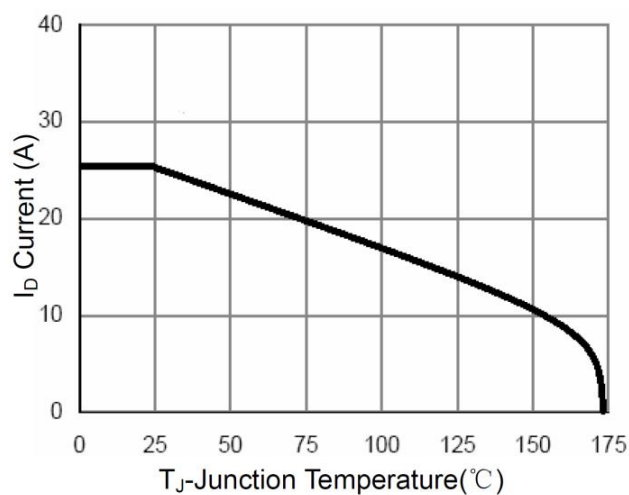
Capacitance vs V_{ds}



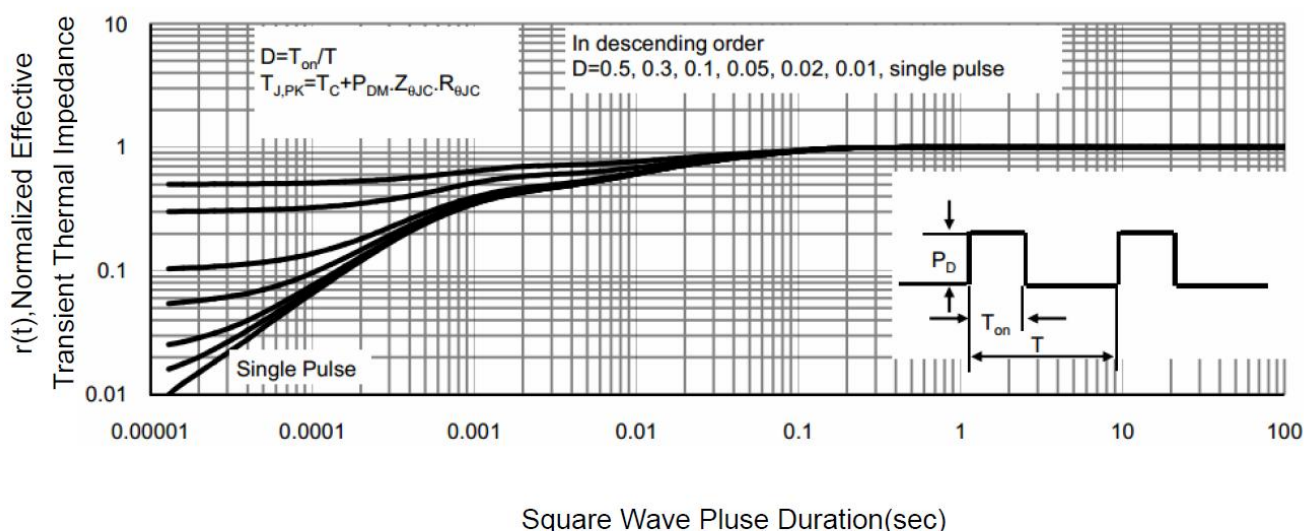
Power De-rating



Safe Operation Area



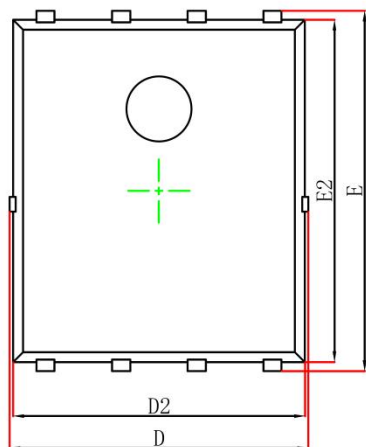
ID Current- Junction Temperature



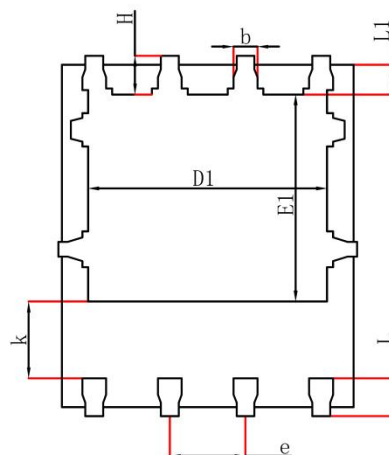
Normalized Maximum Transient Thermal Impedance



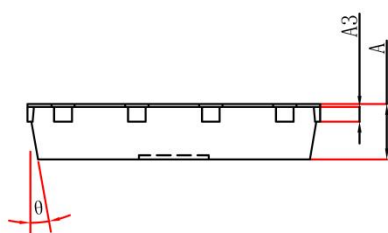
PDFN5X6-8L Package Information



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°