

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	3.5mΩ@10V	100A

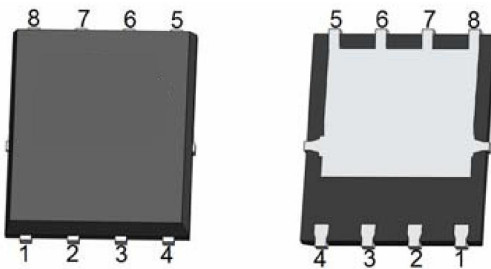
Feature

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- Advanced Split Gate Trench Technology

Application

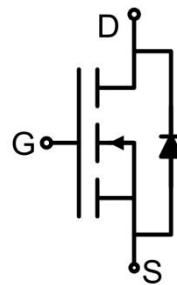
- DC/DC converter
- Power Management

Package

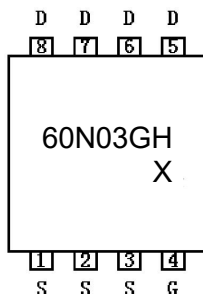


PDFN5X6-8L

Circuit diagram



Marking



Absolute maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current($T_c=25^{\circ}\text{C}$)	I_D	100	A
Pulsed Drain Current ²⁾	I_{DM}	400	A
Power Dissipation ⁴⁾ ($T_c=25^{\circ}\text{C}$)	P_D	125	W
Thermal Resistance,Junction-to-Case ¹⁾	$R_{\theta JC}$	1.0	$^{\circ}\text{C}/\text{W}$
Single pulse avalanche energy ³⁾	E_{AS}	681	mJ
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

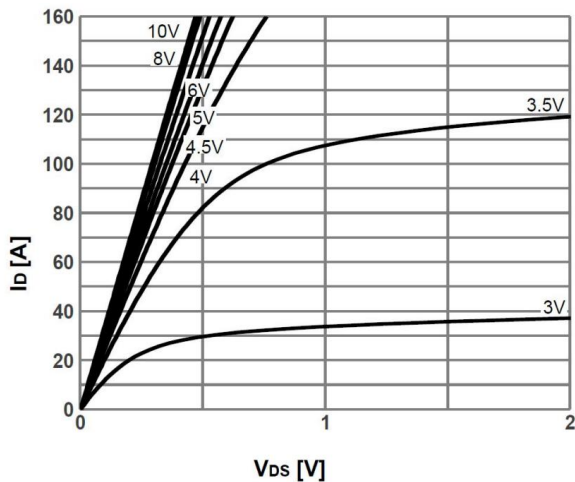
Electrical characteristics ($T_a=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0	2.5	4.0	V
Drain-source on-resistance ²⁾	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		2.8	3.5	m Ω
Dynamic characteristics ⁵⁾						
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$		4250		pF
Output Capacitance	C_{oss}			975		
Reverse Transfer Capacitance	C_{rss}			41		
Total Gate Charge	Q_g	$V_{DS} = 30V, V_{GS} = 10V, I_D = 20A$		68		nC
Gate-Source Charge	Q_{gs}			19		
Gate-Drain Charge	Q_{gd}			14		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, V_{GS} = 10V, I_D = 20A, R_G = 4.7\Omega$		6		nS
Turn-on rise time	t_r			12		
Turn-off delay time	$t_{d(off)}$			24		
Turn-off fall time	t_f			5		
Source-Drain Diode characteristics						
Diode Forward voltage ²⁾	V_{SD}	$V_{GS} = 0V, I_S = 1A, T_J = 25^\circ C$			1.2	V

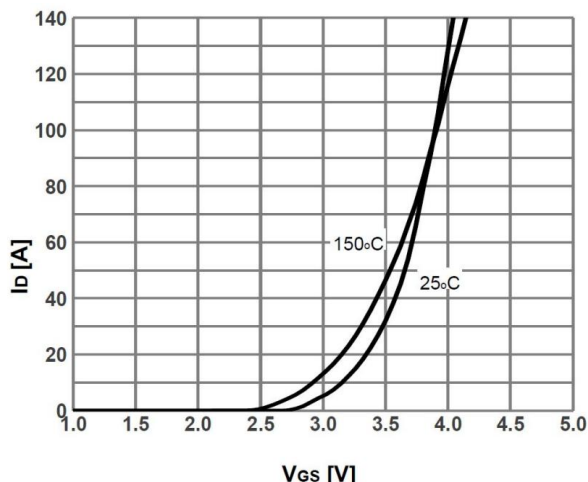
Notes:

- 1) The data tested by surface mounted on a 1 inch2 FR-4 board with 20Z copper.
- 2) The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 3) The EAS data shows Max. rating . The test condition is $V_{DD}=30V, V_{GS}=10V, L=0.5mH, R_G=25\Omega$
- 4) The power dissipation is limited by 150°C junction temperature
- 5) Guaranteed by design, not subject to production.

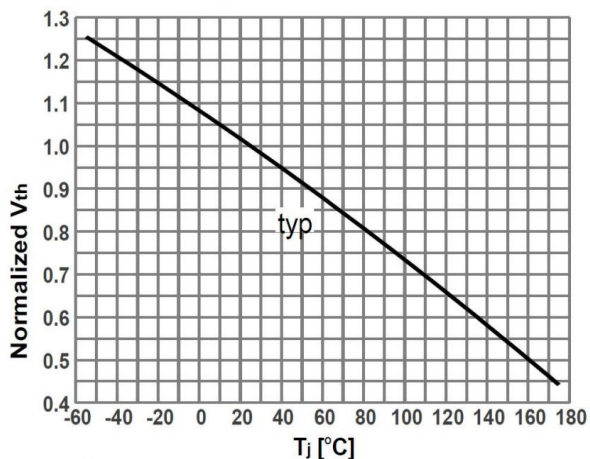
Typical Characteristics



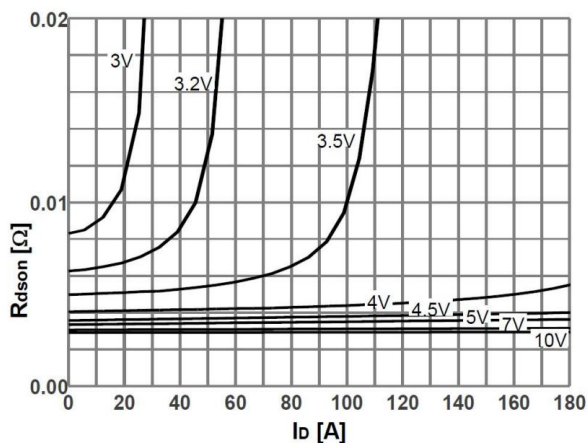
output characteristics



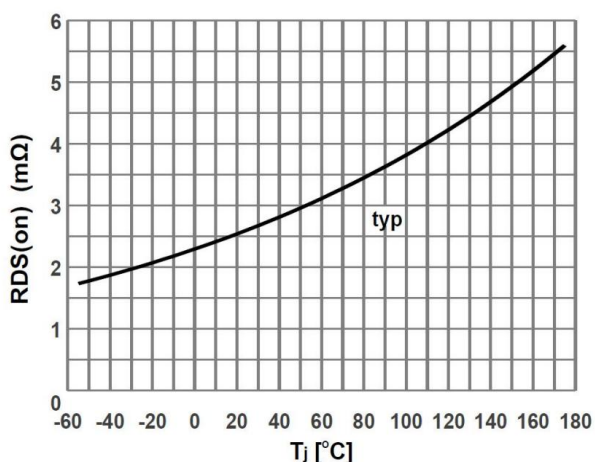
transfer characteristics



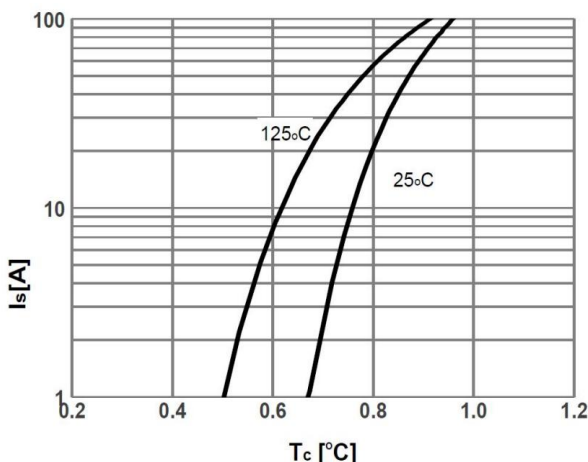
Gate threshold voltage vs. Junction temperature



On-state resistance vs. Drain current

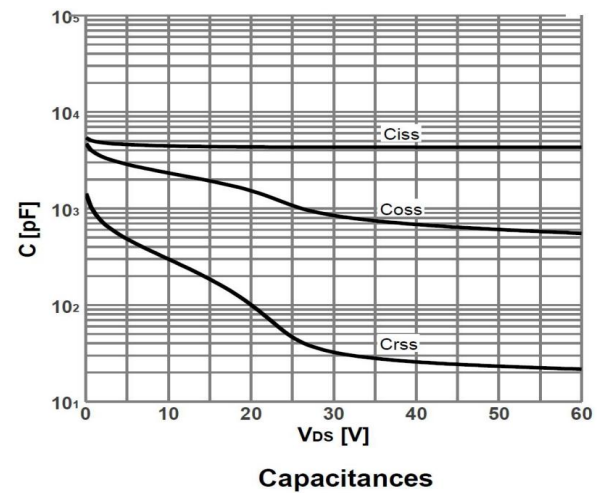
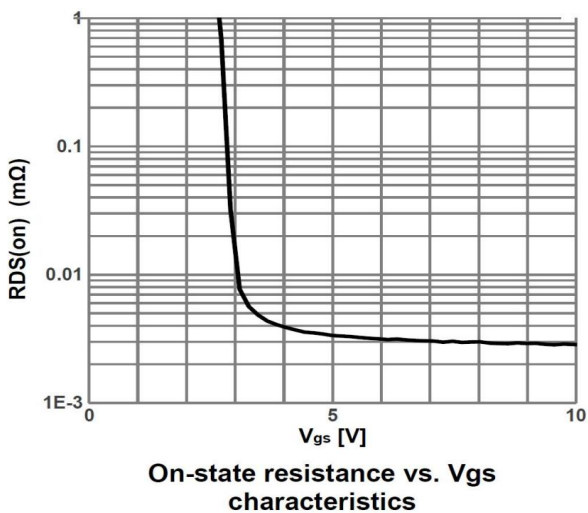
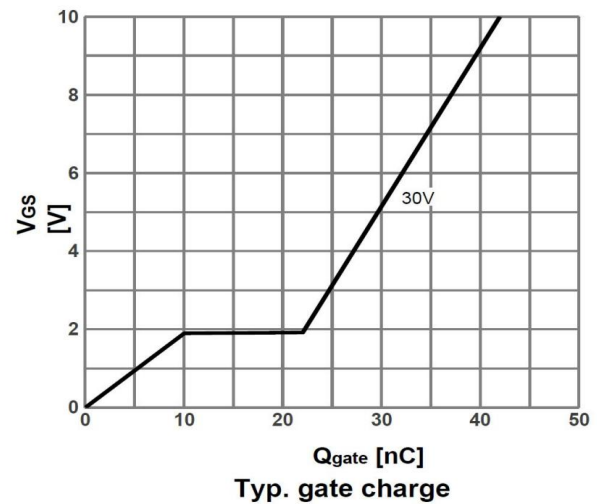
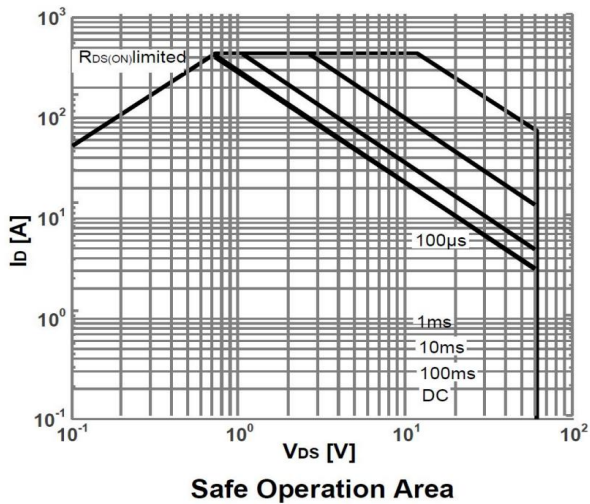
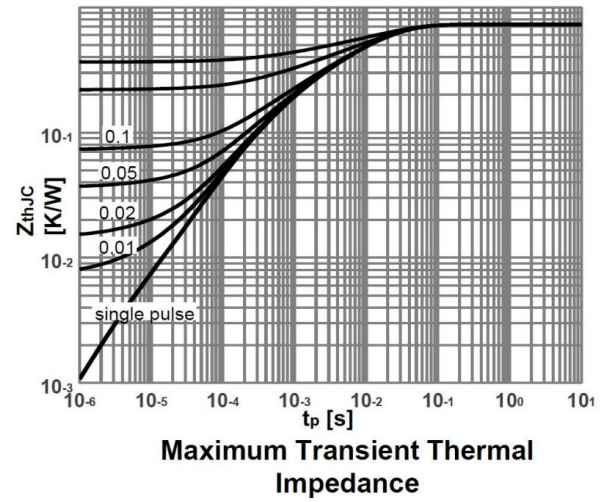
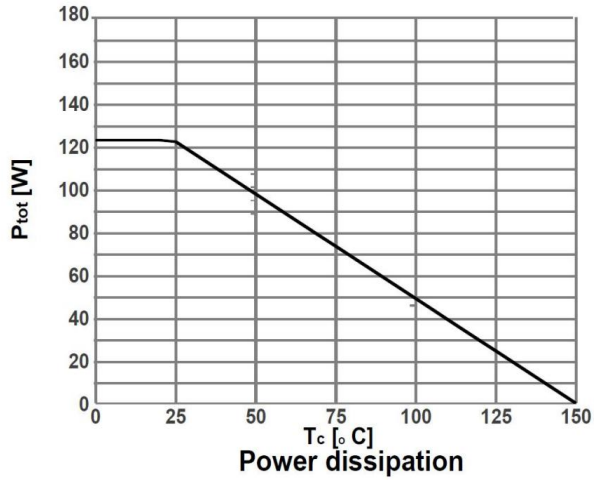


On-state resistance vs. Junction temperature

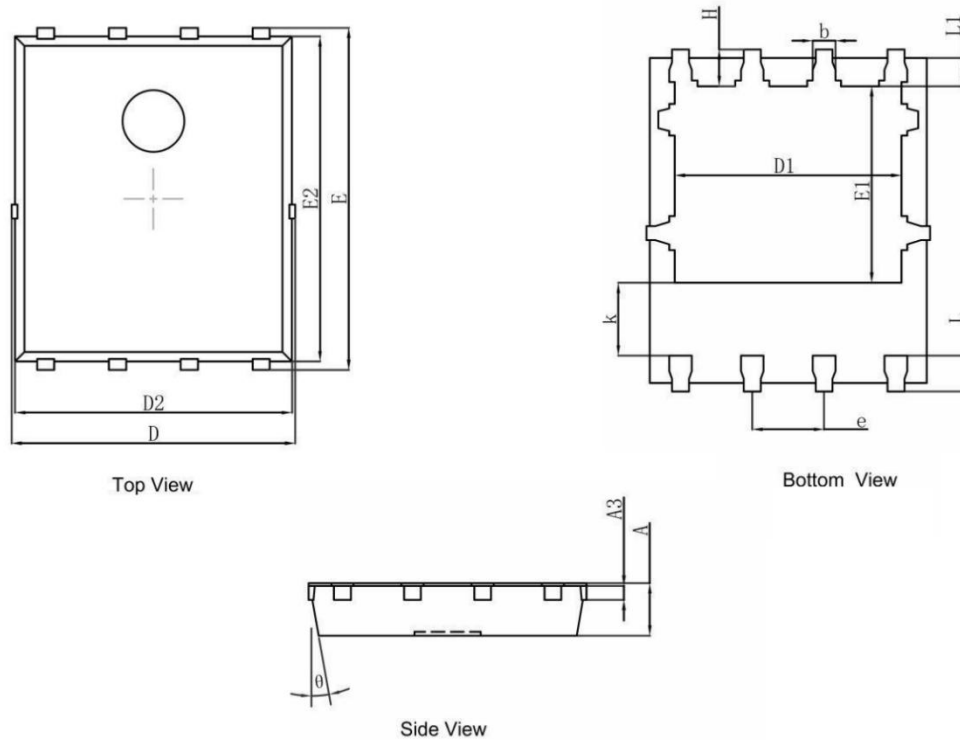


Forward characteristics of reverse diode

Typical Characteristics



PDFN5X6-8L Package Information



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°