

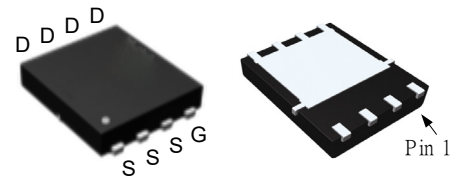
Features

- -100V/-30A,
 $R_{DS(ON)} = 75m\Omega(\text{typ.}) @ V_{GS} = -10V$
 $R_{DS(ON)} = 80m\Omega(\text{typ.}) @ V_{GS} = -4.5V$
- Reliable and Rugged
- Lead Free and Green Devices Available
 (RoHS Compliant)
- 100% UIS Tested

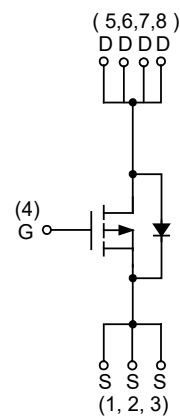
Applications

- Power Management for Industrial DC / DC Converters.

Pin Description



DFN5x6A-8_EP



P-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		-100	V
V _{GSS}	Gate-Source Voltage		±20	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current		-30	A
I _{AS} ^a	Avalanche Current, Single pulse	L=0.5mH	-32	A
E _{AS} ^a	Avalanche Energy, Single pulse	L=0.5mH	256	mJ
I _{DP} ^b	Pulse Drain Current Tested	T _C =25°C	-74 °	A
I _D	Continuous Drain Current	T _C =25°C	-30	
		T _C =100°C	-12	
P _D	Maximum Power Dissipation	T _C =25°C	62.5	W
		T _C =100°C	25	
R _{θJC}	Thermal Resistance-Junction to Case		2	°C/W
I _D	Continuous Drain Current	T _A =25°C	-3.5	A
		T _A =70°C	-2.8	
P _D	Maximum Power Dissipation	T _A =25°C	2.2	W
		T _A =70°C	1.4	
R _{θJA} ^d	Thermal Resistance-Junction to Ambient	Steady State	55	°C/W

Note a : UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature $T_J=25^\circ\text{C}$).

Note b : Pulse width limited by max. junction temperature.

Note c : Wire limited.

Note d : $R_{\theta JA}$ steady state $t=999\text{s}$. $R_{\theta JA}$ is measured with the device mounted on 1in^2 , FR-4 board with 2oz. Copper.

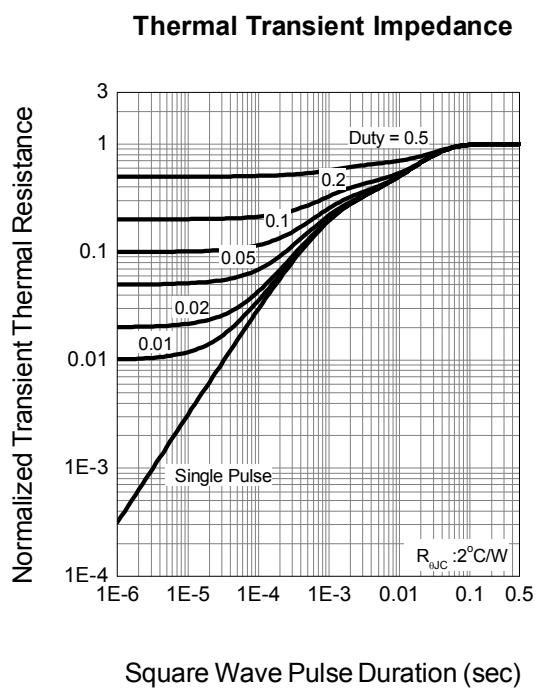
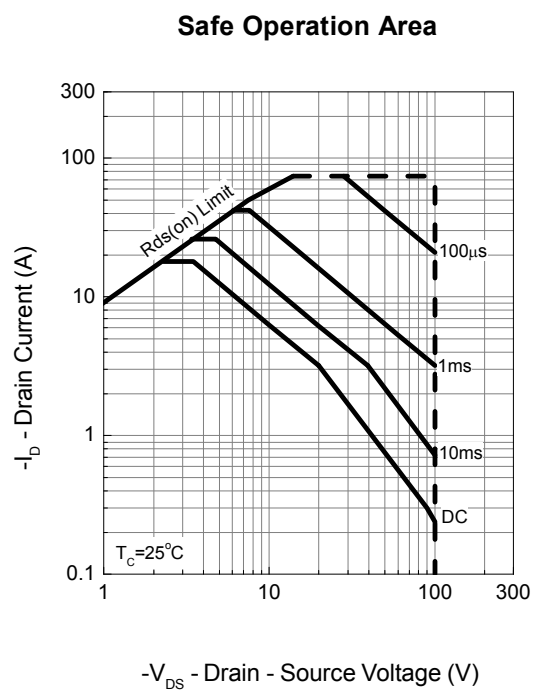
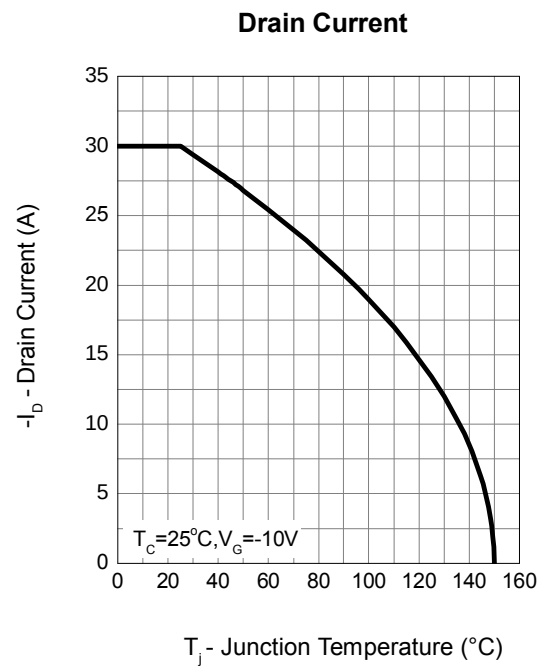
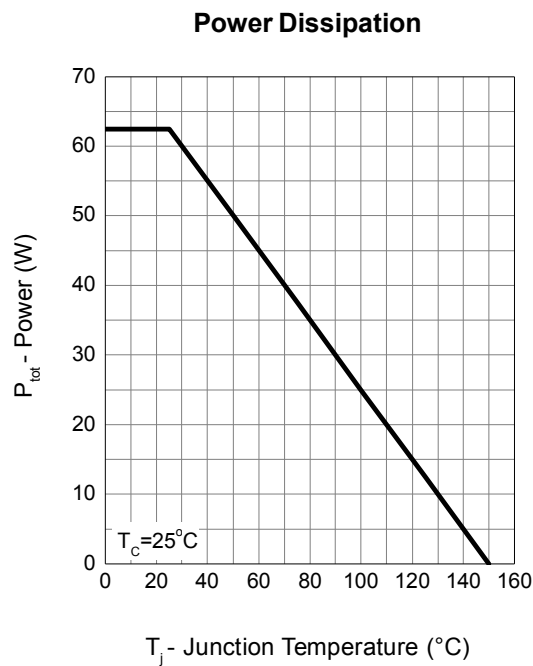
Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-80V, V _{GS} =0V T _J =85°C	-	-	-1 -30	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1	-2	-3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±20	μA
R _{DS(ON)} ^e	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-9A V _{GS} =-4.5V, I _{DS} =-6A	-	75 80	95 105	mΩ mΩ
Diode Characteristics						
V _{SD} ^e	Diode Forward Voltage	I _{SD} =-1A, V _{GS} =0V	-	-0.7	-1	V
t _{rr}	Reverse Recovery Time	I _{SD} =-9A, dI _{SD} /dt=100A/μs	-	38	-	ns
Q _{rr}	Reverse Recovery Charge		-	65	-	nC
Dynamic Characteristics ^f						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	5	10	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-30V, Frequency=1.0MHz	-	1780	2314	pF
C _{oss}	Output Capacitance		-	120	-	
C _{rss}	Reverse Transfer Capacitance		-	110	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-30V, R _L =30Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	11	20	ns
t _r	Turn-on Rise Time		-	9	16	
t _{d(OFF)}	Turn-off Delay Time		-	50	90	
t _f	Turn-off Fall Time		-	22	40	
Gate Charge Characteristics ^f						
Q _g	Total Gate Charge	V _{DS} =-50V, V _{GS} =-10V, I _{DS} =-9A	-	39	55	nC
Q _{gs}	Gate-Source Charge		-	6.3	-	
Q _{gd}	Gate-Drain Charge		-	7.9	-	

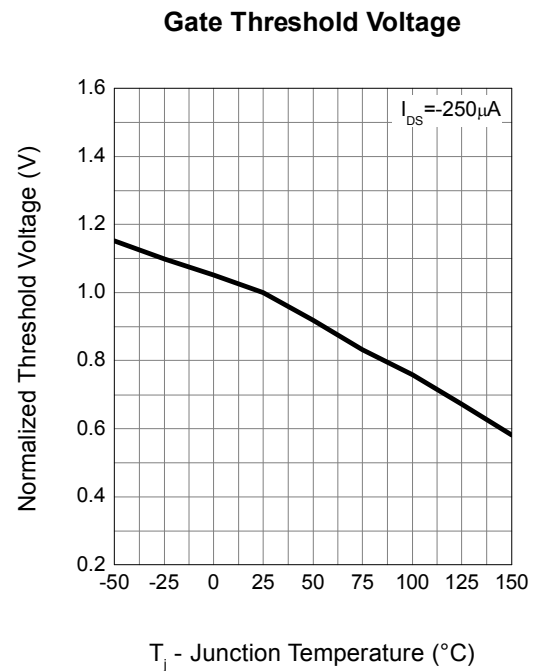
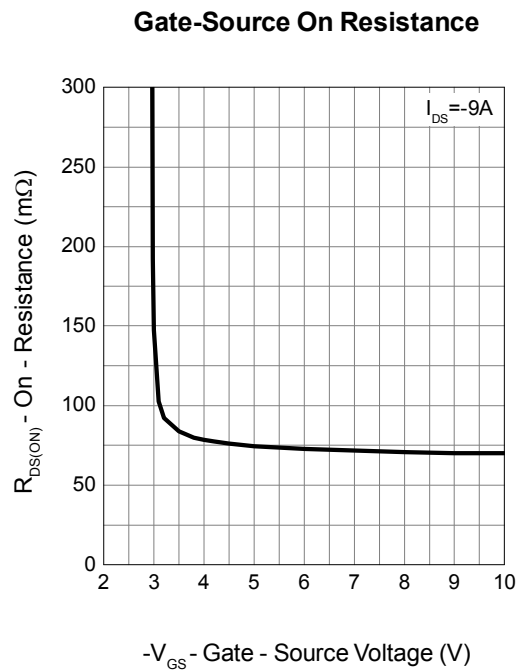
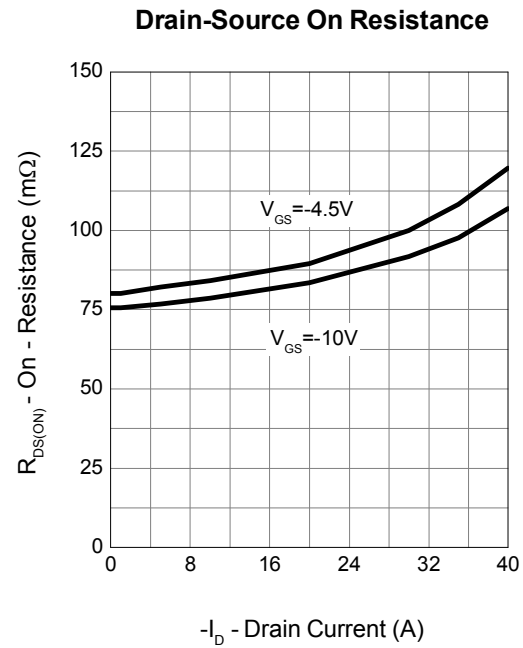
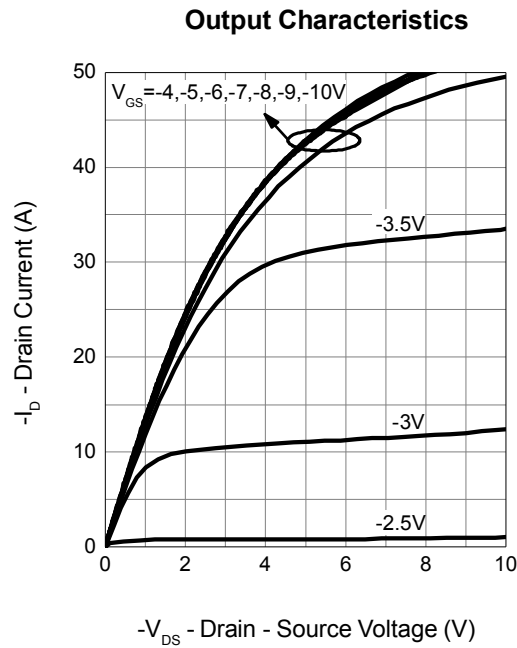
Note e : Pulse test; pulse width≤300μs, duty cycle≤2%.

Note f : Guaranteed by design, not subject to production testing.

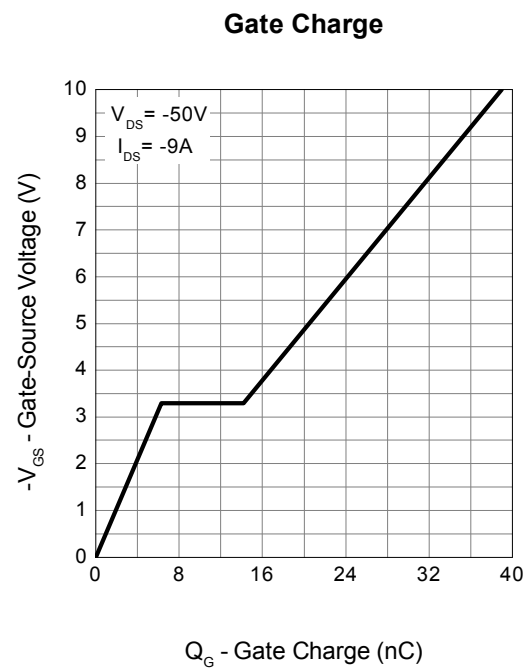
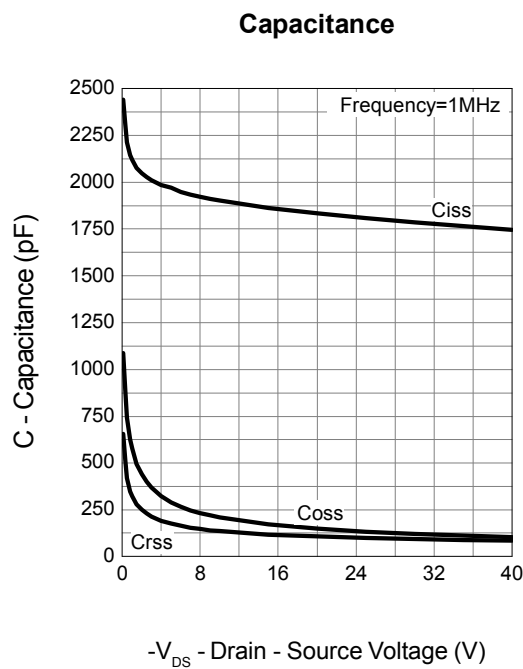
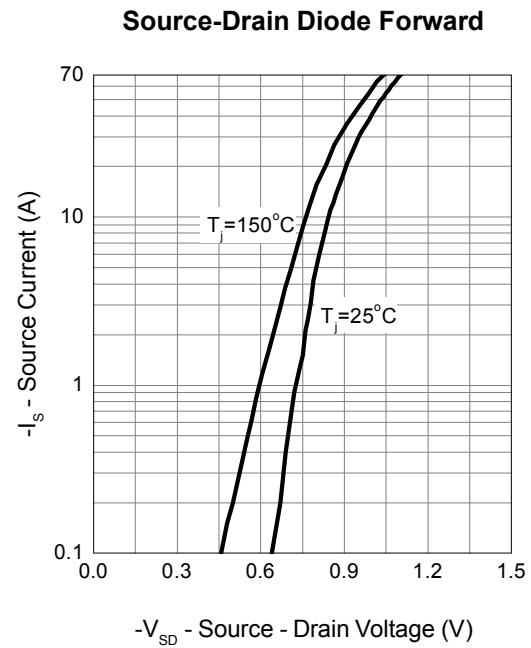
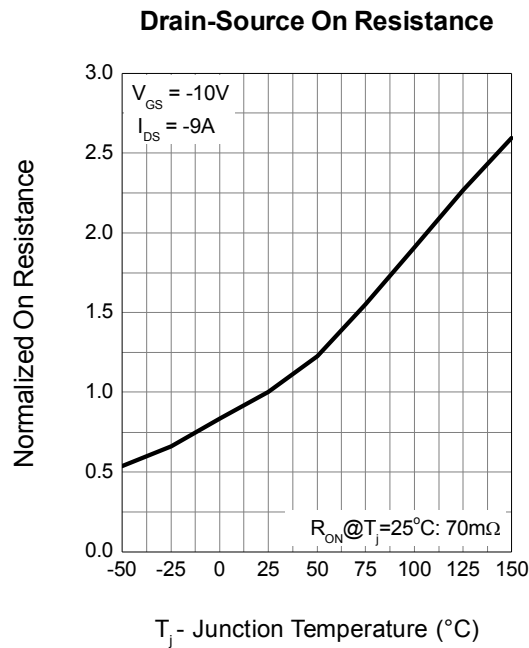
Typical Operating Characteristics



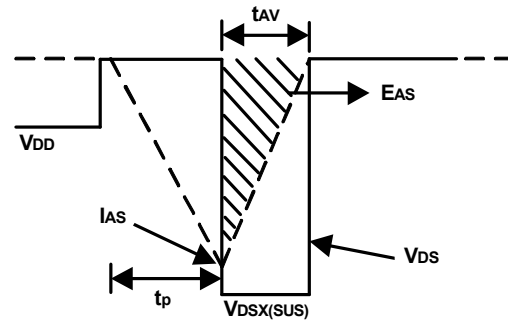
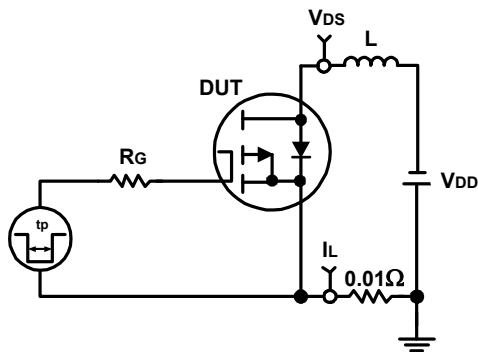
Typical Operating Characteristics (Cont.)



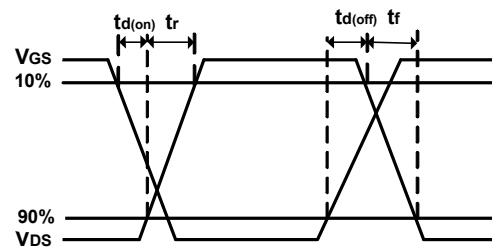
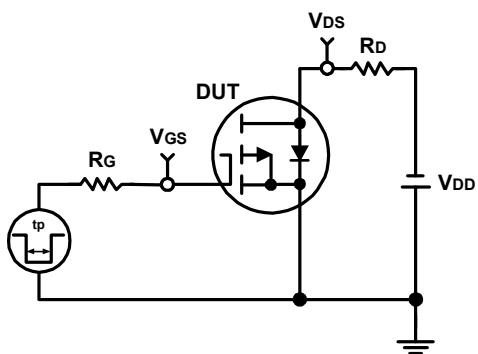
Typical Operating Characteristics (Cont.)



Avalanche Test Circuit and Waveforms

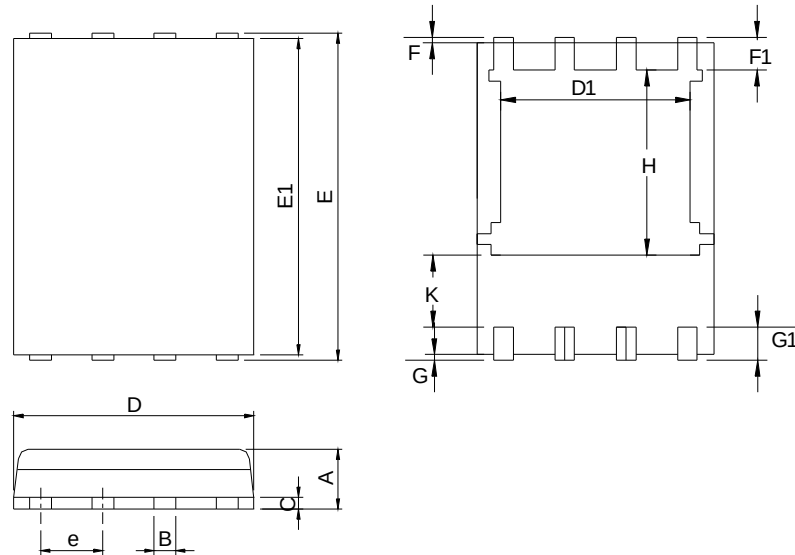


Switching Time Test Circuit and Waveforms



Package Information

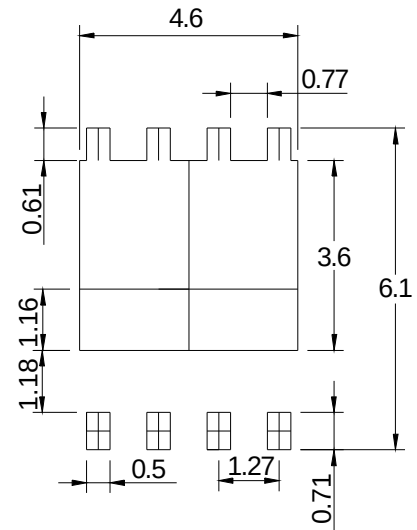
DFN5x6-8



DIMENSIONS	DFN5x6-8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.90	1.20	0.035	0.047
B	0.3	0.51	0.012	0.020
C	0.19	0.25	0.007	0.010
D	4.80	5.30	0.189	0.209
D1	4.00	4.40	0.157	0.173
E	5.90	6.20	0.232	0.244
E1	5.50	5.80	0.217	0.228
e	1.27 BSC		0.050 BSC	
F	0.05	0.30	0.002	0.012
F1	0.35	0.75	0.014	0.030
G	0.05	0.30	0.002	0.012
G1	0.35	0.75	0.014	0.030
H	3.34	3.9	0.131	0.154
K	0.762	-	0.03	-

Note : 1.Dimension D, D1,D2 and E1 do not include mold flash or protrusions.
Mold flash or protrusions shall not exceed 10 mil.

RECOMMENDED LAND PATTERN



UNIT: mm