

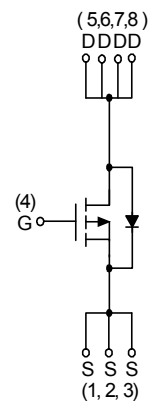
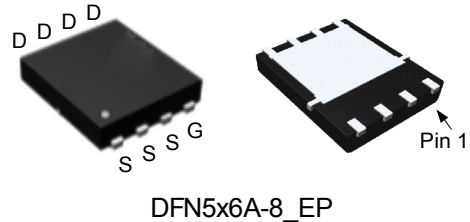
Features

- -60V/-26A,
 $R_{DS(ON)} = 32m\Omega(\text{typ.}) @ V_{GS} = -10V$
 $R_{DS(ON)} = 40m\Omega(\text{typ.}) @ V_{GS} = -4.5V$
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)
- 100% UIS Tested

Applications

- DC/DC Converter.
- Power Management.
- Load Switch.

Pin Description



Absolute Maximum Ratings (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		-60	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		-13	A
I _{AS} ^a	Avalanche Current, Single pulse	L=0.5mH	-17	A
E _{AS} ^a	Avalanche Energy, Single pulse	L=0.5mH	72	mJ
I _{DP} ^b	Pulse Drain Current Tested	T _C =25°C	-80 ^c	A
I _D	Continuous Drain Current	T _C =25°C	-26	
		T _C =100°C	-16	
P _D	Maximum Power Dissipation	T _C =25°C	54	W
		T _C =100°C	21	
R _{θJC}	Thermal Resistance-Junction to Case		2.3	°C/W
I _D	Continuous Drain Current	T _A =25°C	-5.3	A
		T _A =70°C	-4.2	
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°C).

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

Note c : Wire limited.

Note d : R_{θJA} steady state t=999s. R_{θJA} is measured with the device mounted on 1in², FR-4 board with 2oz. Copper.

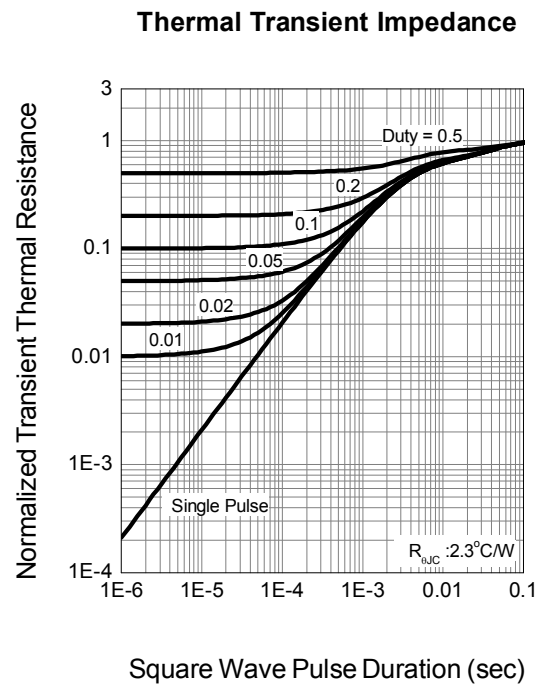
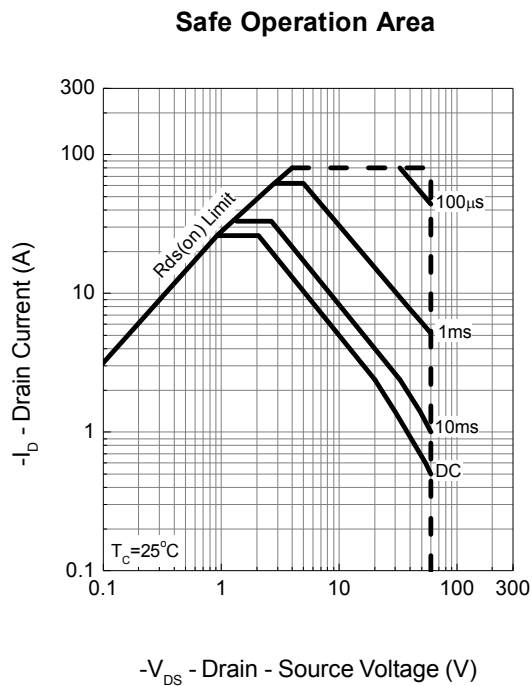
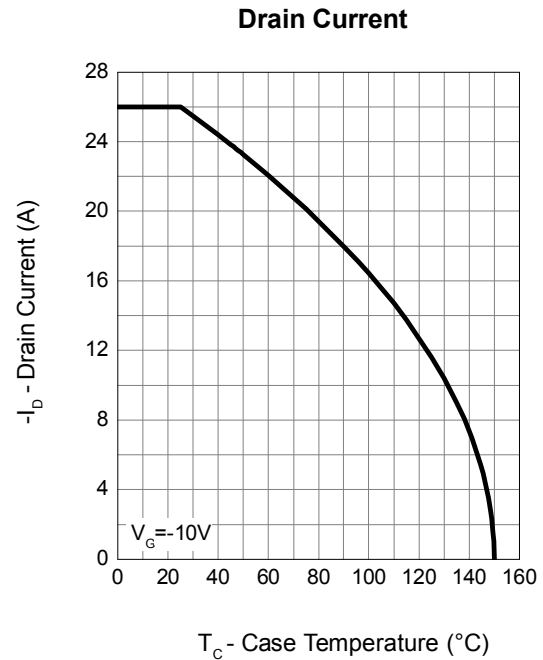
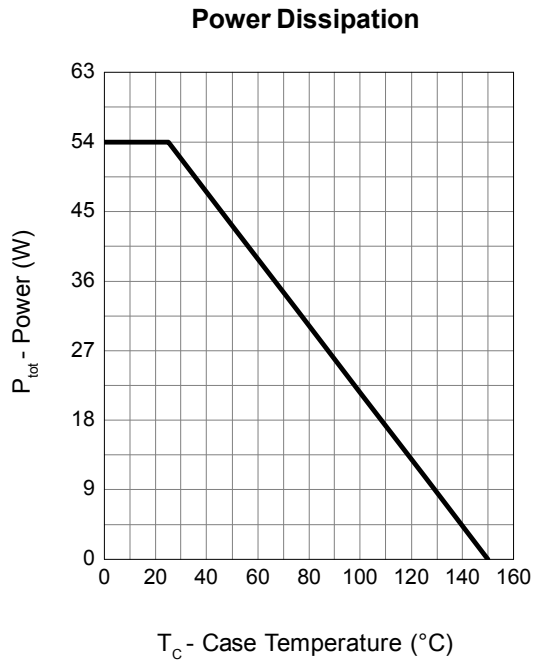
Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-48V, V _{GS} =0V T _J =85°C	-	-	1 -30	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1.3	-1.8	-2.3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^e	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-20A V _{GS} =-4.5V, I _{DS} =-20A	-	32 40	40 54	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} =-20A, dI _{SD} /dt=100A/μs	-	23	-	ns
Q _{rr}	Reverse Recovery Charge		-	22	-	nC
Dynamic Characteristics ^f						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	8	16	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-30V, Frequency=1.0MHz	-	1416	1840	pF
C _{oss}	Output Capacitance		-	142	-	
C _{rss}	Reverse Transfer Capacitance		-	85	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-30V, R _L =30Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	10	18	ns
t _r	Turn-on Rise Time		-	9	16	
t _{d(OFF)}	Turn-off Delay Time		-	88	158	
t _f	Turn-off Fall Time		-	42	76	
Gate Charge Characteristics ^f						
Q _g	Total Gate Charge	V _{DS} =-30V, V _{GS} =-10V, I _{DS} =-20A	-	32	45	nC
Q _{gs}	Gate-Source Charge		-	3.6	-	
Q _{gd}	Gate-Drain Charge		-	8.3	-	

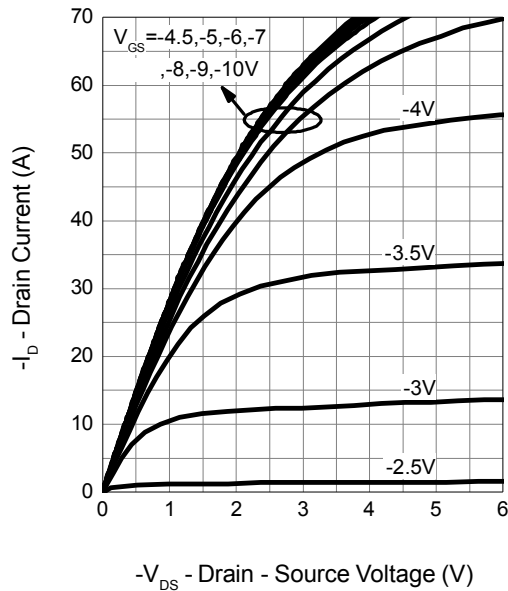
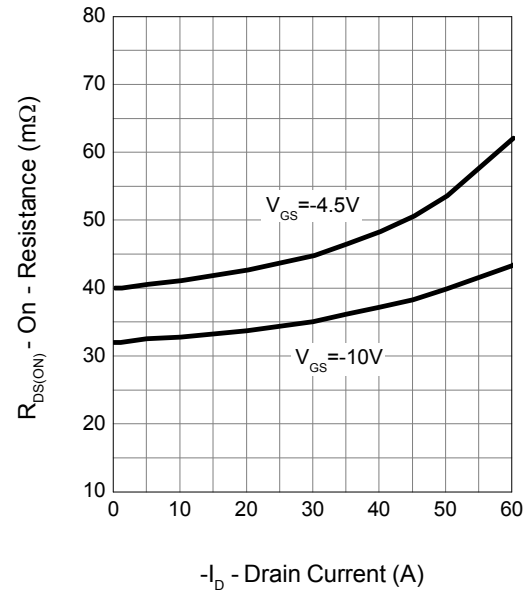
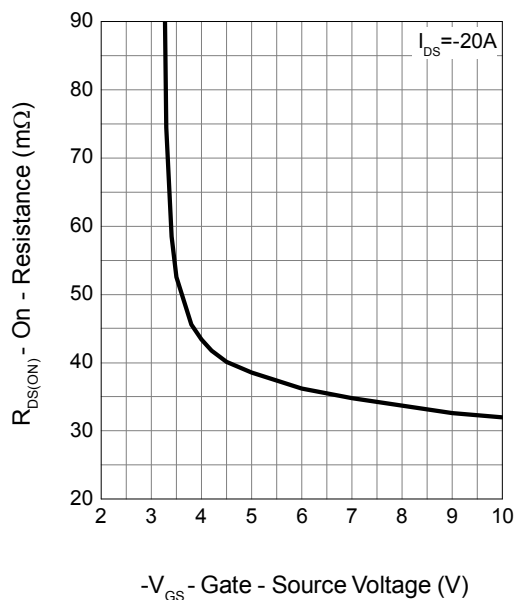
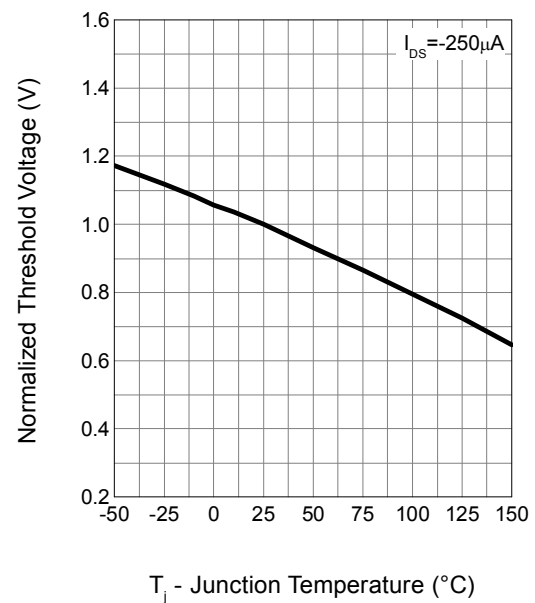
Note e : Pulse test; pulse width≤300μs, duty cycle≤2%.

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

Typical Operating Characteristics

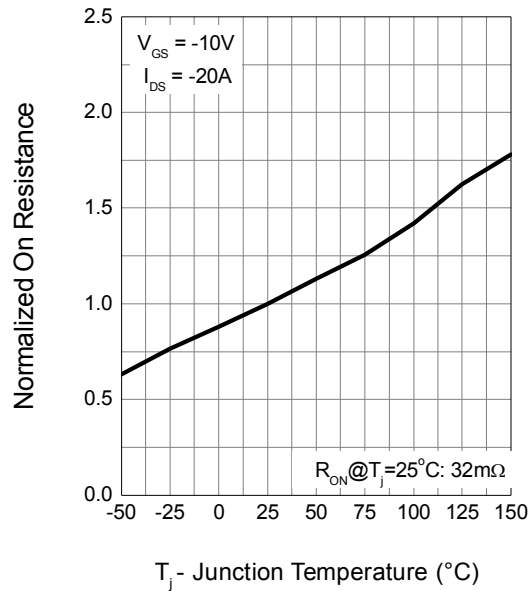


Typical Operating Characteristics (Cont.)

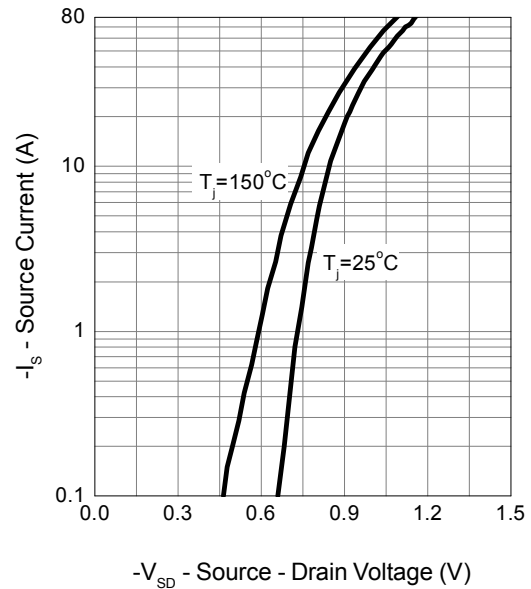
Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


Typical Operating Characteristics (Cont.)

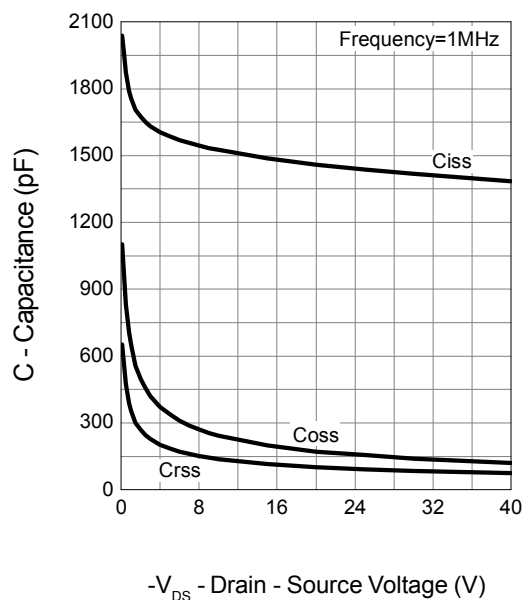
Drain-Source On Resistance



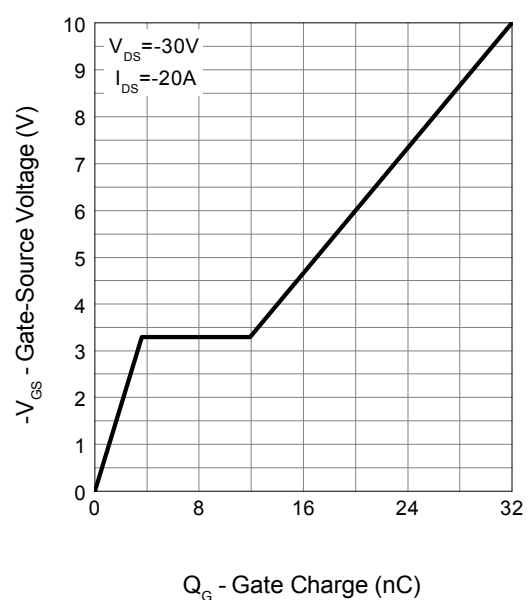
Source-Drain Diode Forward



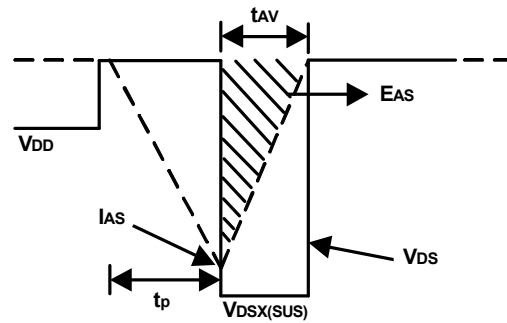
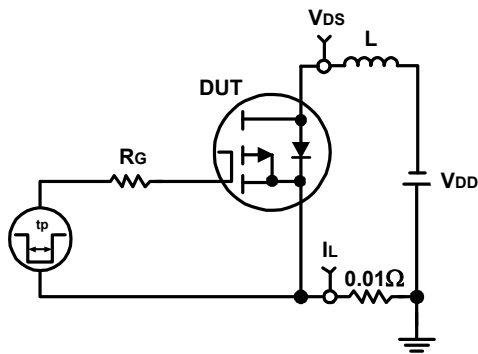
Capacitance



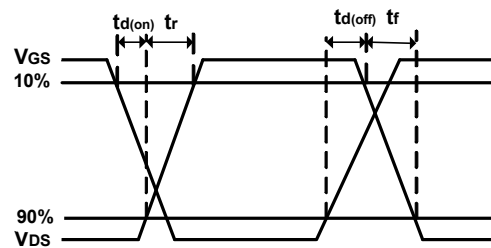
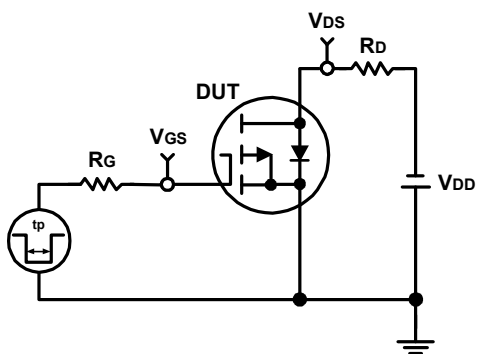
Gate Charge



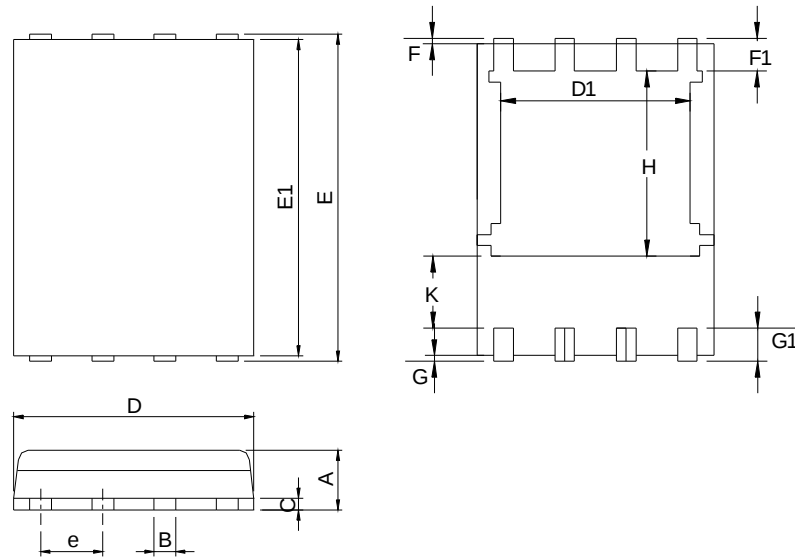
Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms



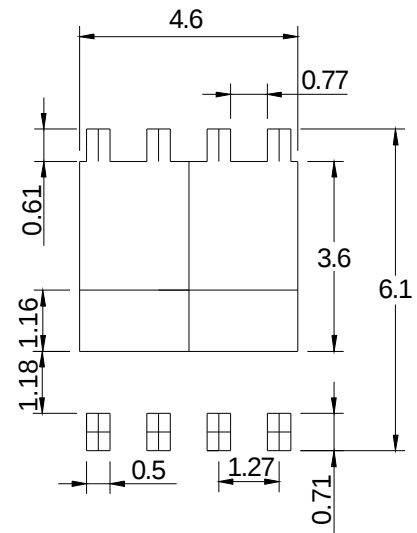
Package Information

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