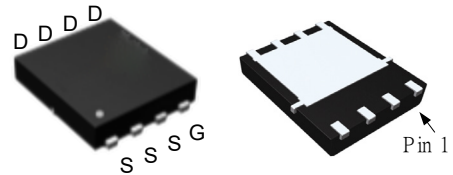


Features

- 60V/90A,
 $R_{DS(ON)} = 5m\Omega$ (Typ.) @ $V_{GS} = 10V$
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

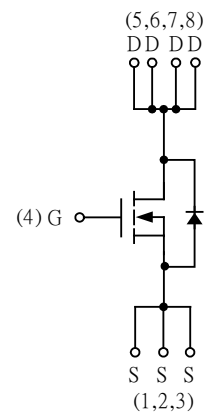
Pin Description



DFN5x6A-8_EP

Applications

- Power Management in Desktop Computer or DC/DC Converters.
- Power Load Switch.
- Notebook Battery Management.



N-Channel MOSFET

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T _A =25 °C Unless Otherwise Noted)				
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	
I _S	Diode Continuous Forward Current	T _C =25°C	90	A
I _{DP}	300µs Pulse Drain Current Tested	T _C =25°C	270	
I _D	Continuous Drain Current	T _C =25°C	90	
		T _C =100°C	68	
P _D	Maximum Power Dissipation	T _C =25°C	185	W
		T _C =100°C	125	
R _{θJC}	Thermal Resistance-Junction to Case		1.5	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient		50	
E _{AS}	Avalanche Energy, Single Pulsed	L=1mH	244	mJ

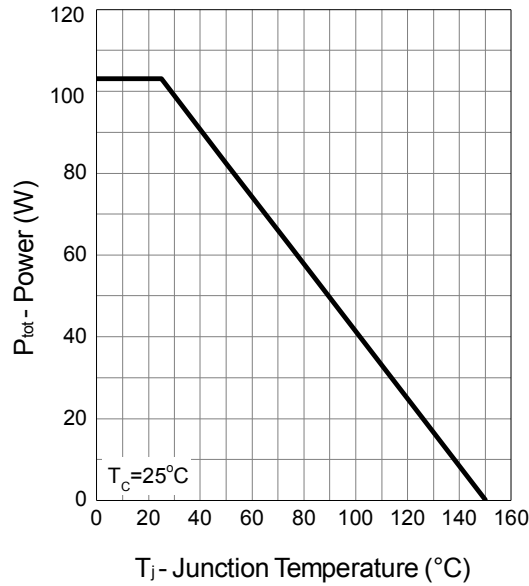
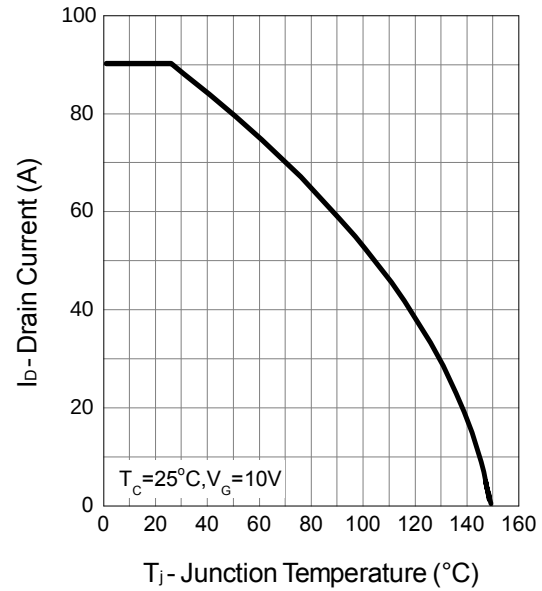
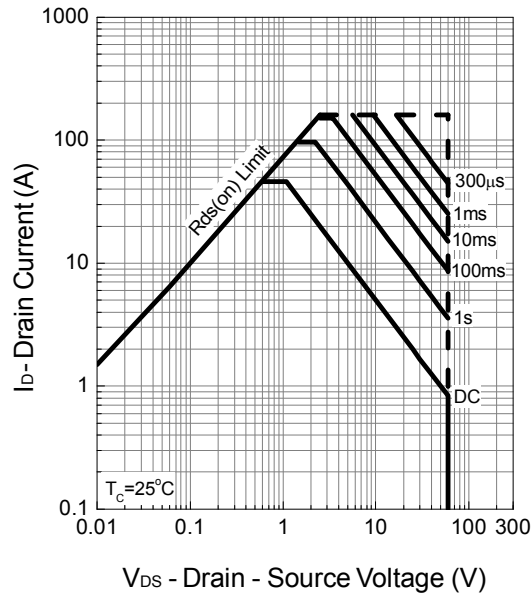
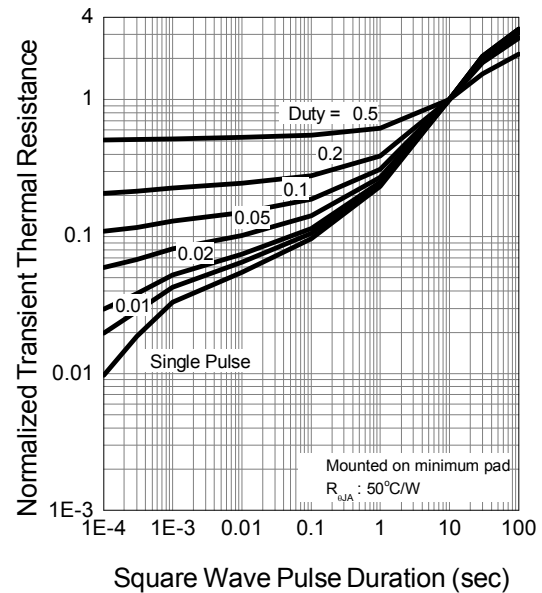
Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

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	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	2	3	4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^a	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =20A	-	5	8	mΩ
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} =20A, V _{GS} =0V	-	0.85	1.3	V
t _{rr}	Reverse Recovery Time	I _{SD} =20A,	-	45	-	ns
Q _{rr}	Reverse Recovery Charge	dI _{SD} /dt= 100A/μs	-	60	-	nC
Dynamic Characteristics ^b						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	2	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =30V, Frequency=1.0MHz	-	4000	-	pF
C _{oss}	Output Capacitance		-	245	-	
C _{rss}	Reverse Transfer Capacitance		-	200	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =30V, R _L =30Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	20	30	ns
t _r	Turn-on Rise Time		-	18	33	
t _{d(OFF)}	Turn-off Delay Time		-	50	90	
t _f	Turn-off Fall Time		-	25	45	
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =10V, I _{DS} =20A	-	45	63	nC
Q _{gs}	Gate-Source Charge		-	15	-	
Q _{gd}	Gate-Drain Charge		-	15	-	

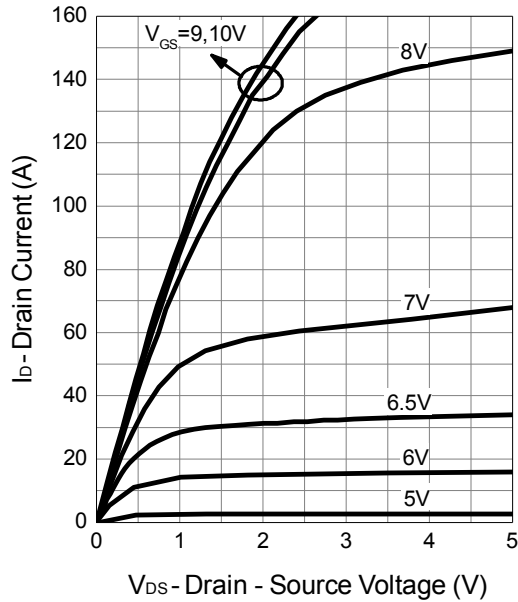
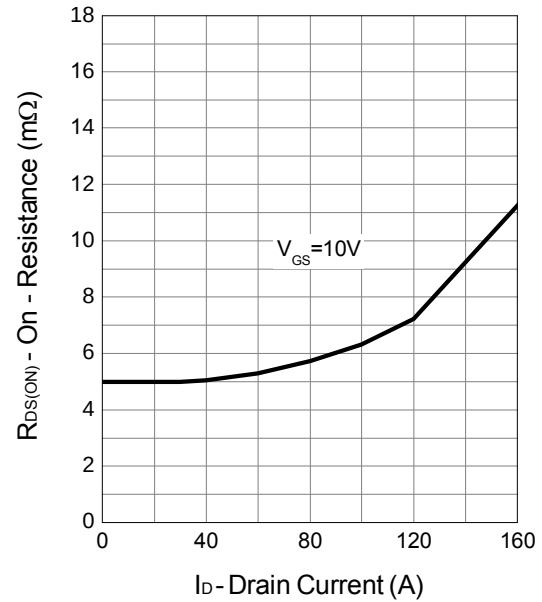
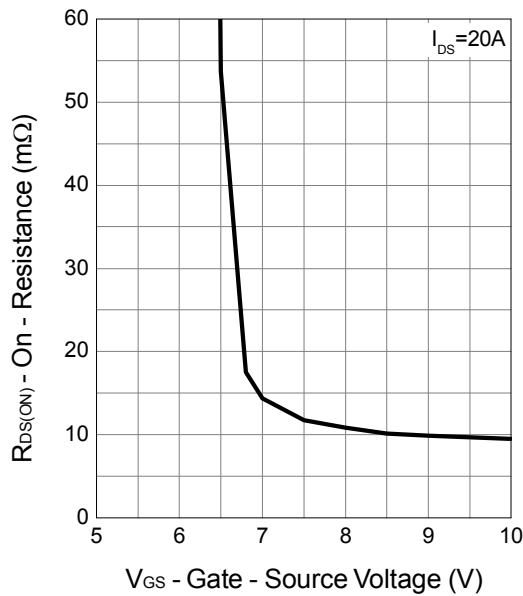
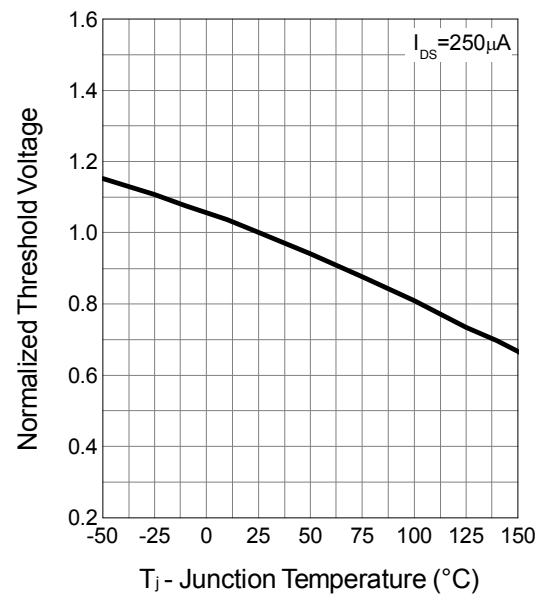
Note a : Pulse test ; pulse width≤300μs, duty cycle≤2%.

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

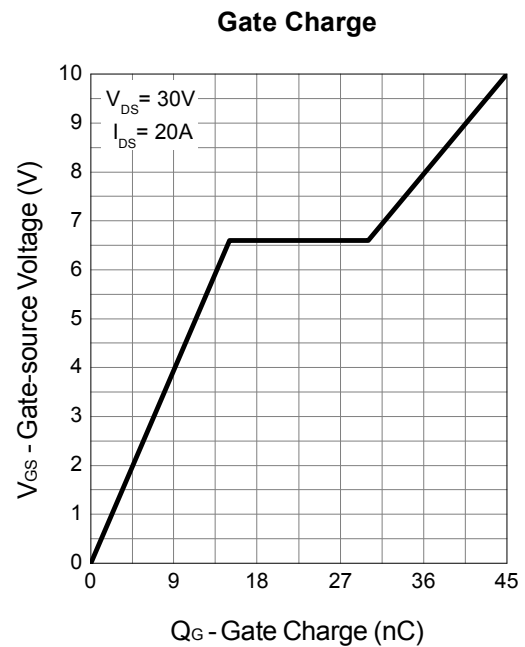
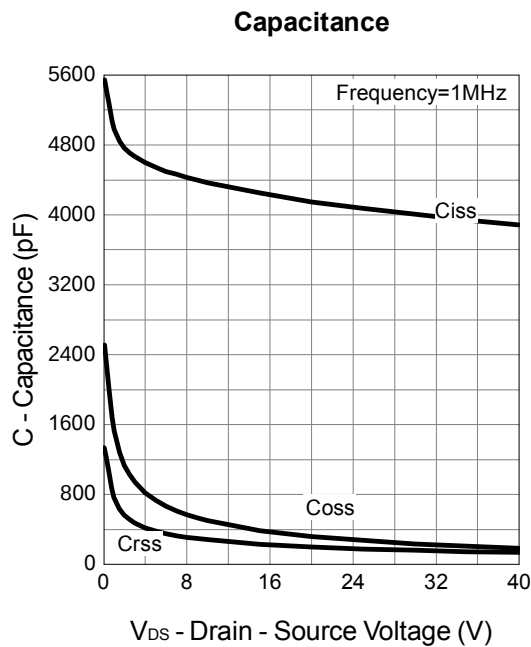
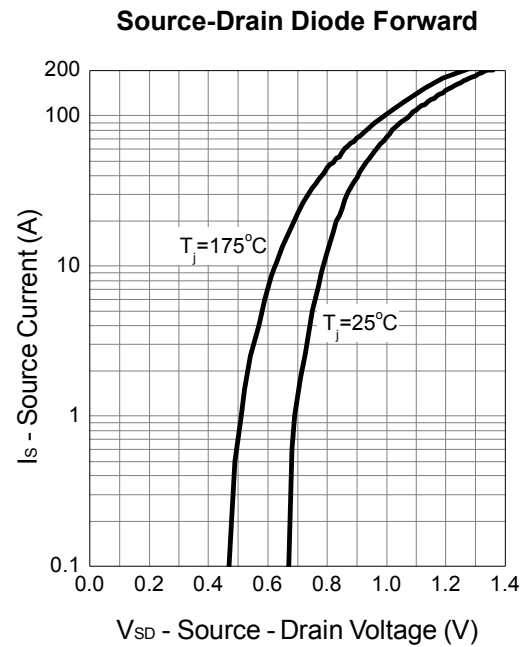
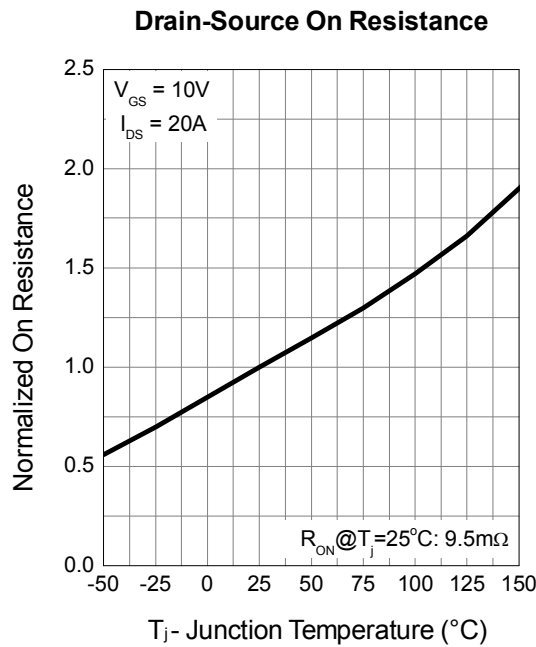
Typical Operating Characteristics

Power Dissipation

Drain Current

Safe Operation Area

Thermal Transient Impedance


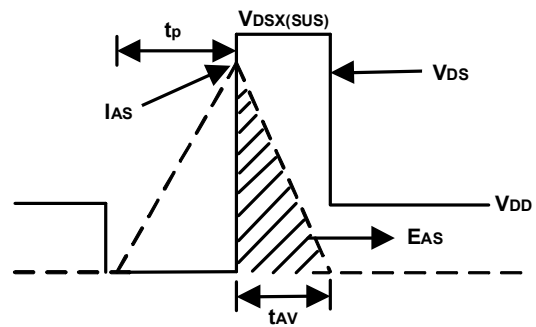
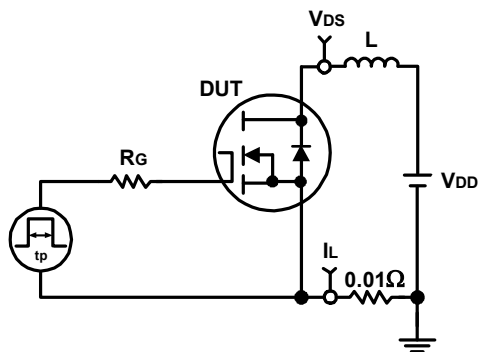
Typical Operating Characteristics (Cont.)

Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


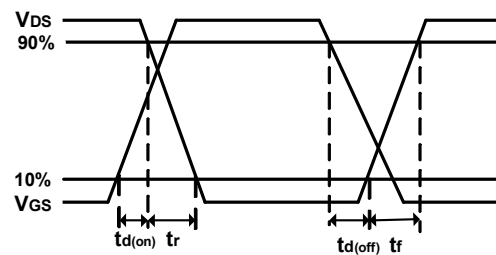
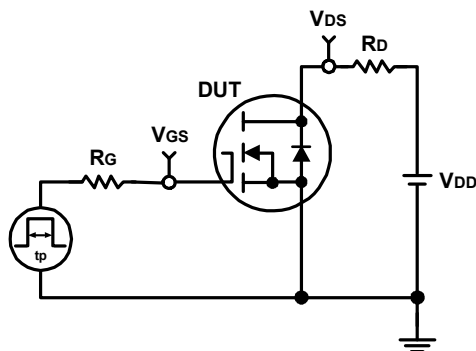
Typical Operating Characteristics (Cont.)



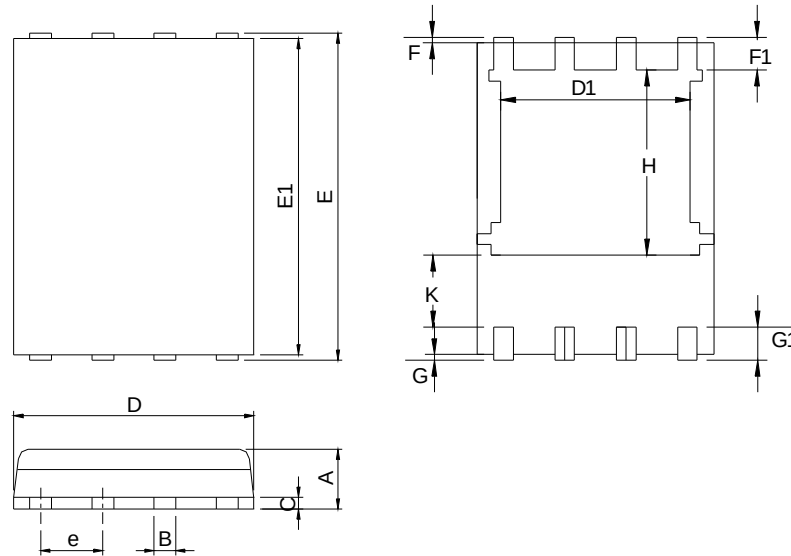
Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms

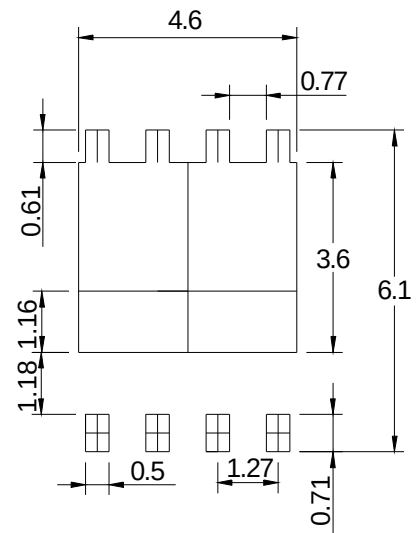


Package Information

DFN5x6-8


SYMBOL	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	-

RECOMMENDED LAND PATTERN



UNIT: mm

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