

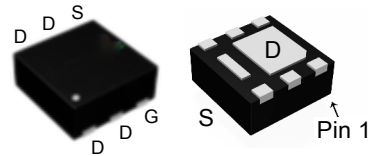
Features

- -20V/-6A,
 $R_{DS(ON)} = 28m\Omega(\text{typ.}) @ V_{GS} = -4.5V$
 $R_{DS(ON)} = 38m\Omega(\text{typ.}) @ V_{GS} = -2.5V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

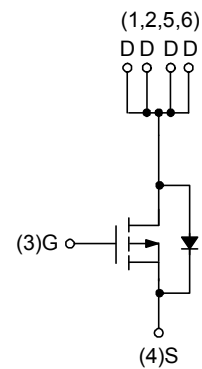
Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

Pin Description



DFN2x2A-6_EP



P-Channel MOSFET

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

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		-20	V
V_{GSS}	Gate-Source Voltage		± 10	
I_D^a	Continuous Drain Current ($V_{GS} = -4.5\text{V}$)	$T_A = 25^\circ\text{C}$	-6	A
		$T_A = 70^\circ\text{C}$	-2.4	
I_{DM}^a	300 μs Pulsed Drain Current ($V_{GS} = -4.5\text{V}$)		-18	
I_S^a	Diode Continuous Forward Current		-6	
T_J	Maximum Junction Temperature		150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range		-55 to 150	
P_D^a	Maximum Power Dissipation	$T_A = 25^\circ\text{C}$	2.5	W
		$T_A = 70^\circ\text{C}$	1.6	
$R_{\theta JA}^a$	Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$	50	$^\circ\text{C/W}$
		Steady State	80	

Note a : Surface Mounted on 1in² pad area, $t \leq 10\text{sec}$.

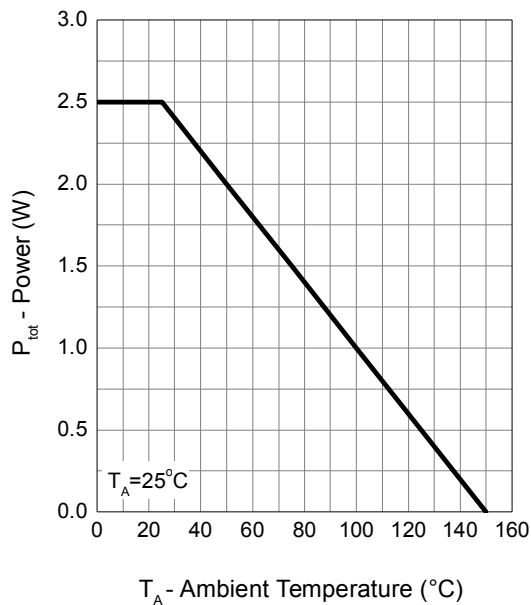
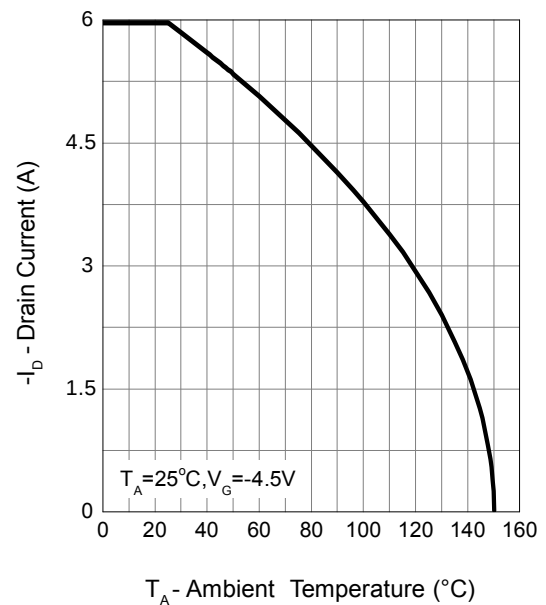
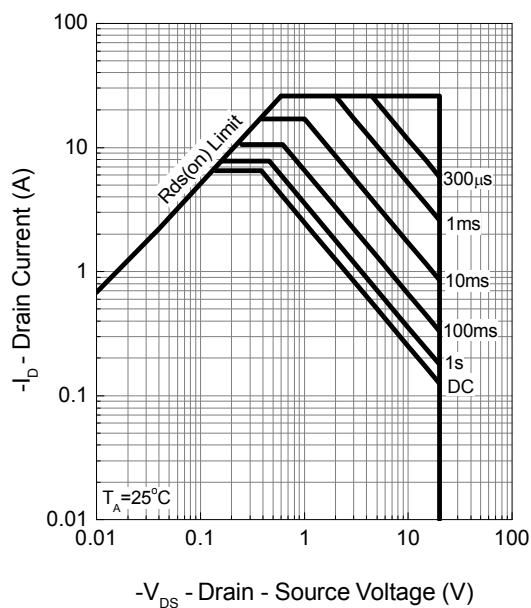
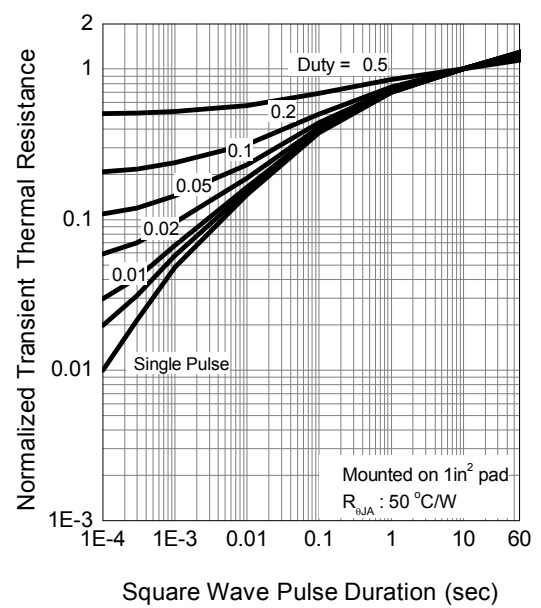
Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-20	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-16V, V _{GS} =0V T _J =85°C	-	-	-1 -30	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-0.5	-0.75	-1	V
I _{GSS}	Gate Leakage Current	V _{GS} =±10V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^b	Drain-Source On-state Resistance	V _{GS} =-4.5V, I _{DS} =-6A V _{GS} =-2.5V, I _{DS} =-4A V _{GS} =-1.8V, I _{DS} =-2A	- - -	28 38 46	32 45 56	mΩ
Diode Characteristics						
V _{SD} ^b	Diode Forward Voltage	I _{SD} =-1A, V _{GS} =0V	-	-0.7	-1	V
t _{rr} ^c	Reverse Recovery Time	I _{SD} =-6.5A, di _{SD} /dt=100A/μs	-	16	-	ns
Q _{rr} ^c	Reverse Recovery Charge		-	8	-	nC
Dynamic Characteristics ^c						
R _g	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	2.4	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-10V, Frequency=1.0MHz	-	815	-	pF
C _{oss}	Output Capacitance		-	145	-	
C _{rss}	Reverse Transfer Capacitance		-	110	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-10V, R _L =10Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	8	-	ns
t _r	Turn-on Rise Time		-	13	-	
t _{d(OFF)}	Turn-off Delay Time		-	34	-	
t _f	Turn-off Fall Time		-	15	-	
Gate Charge Characteristics ^c						
Q _g	Total Gate Charge	V _{DS} =-10V, V _{GS} =-4.5V, I _{DS} =-6.5A	-	8	-	nC
Q _{gs}	Gate-Source Charge		-	1.6	-	
Q _{gd}	Gate-Drain Charge		-	1.9	-	

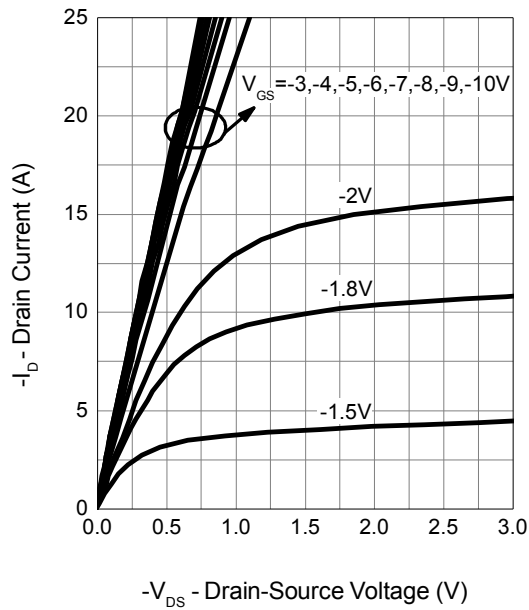
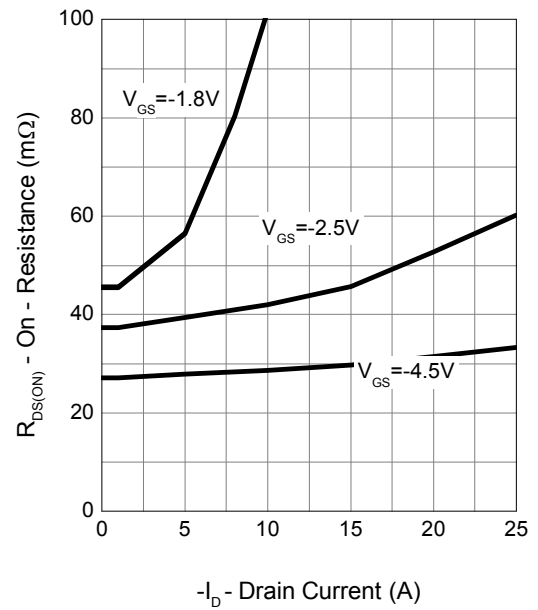
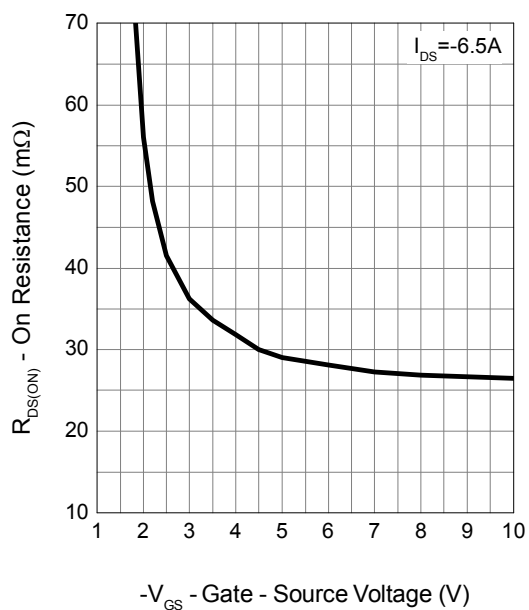
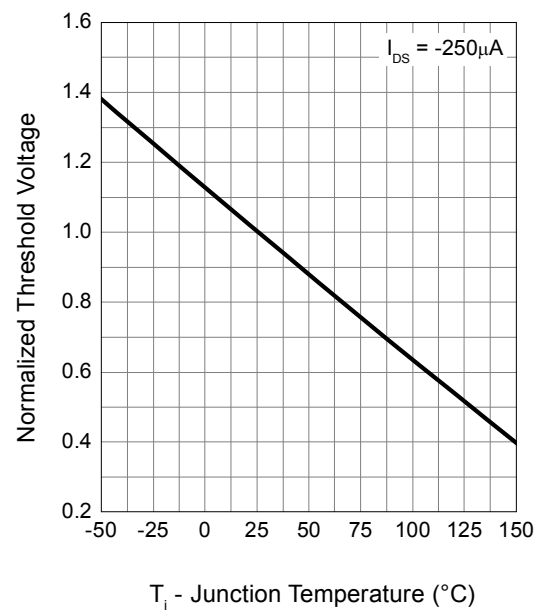
Note b : Pulse test ; pulse width≤300μs, duty cycle≤2%.

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

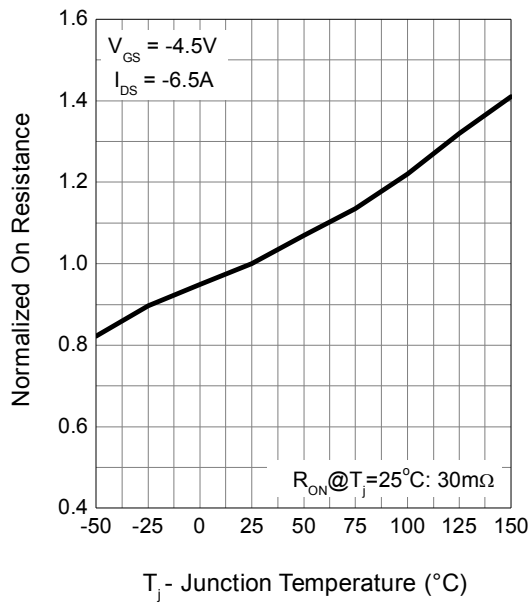
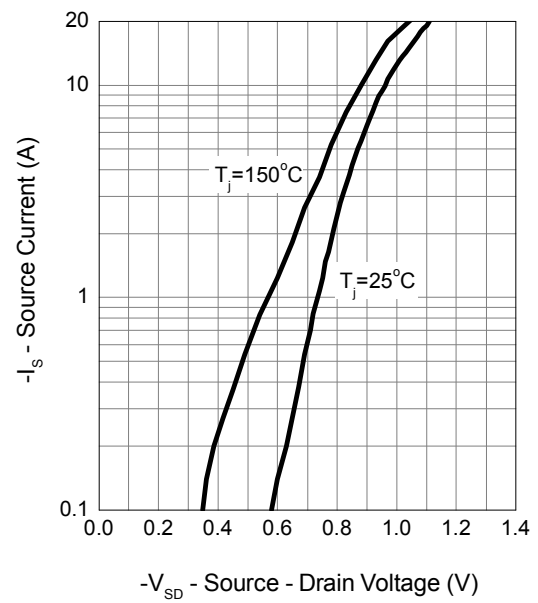
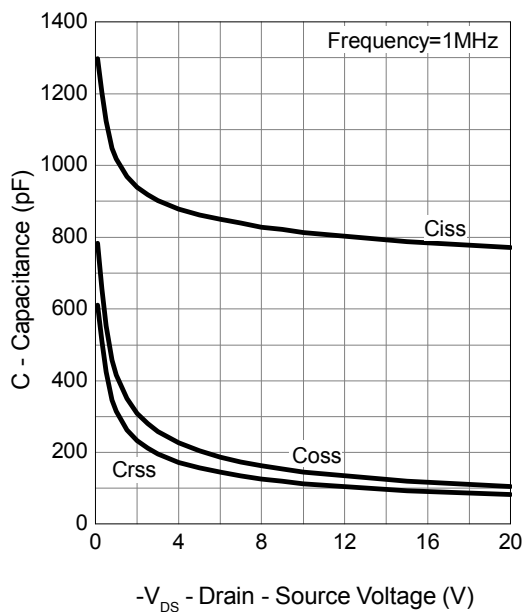
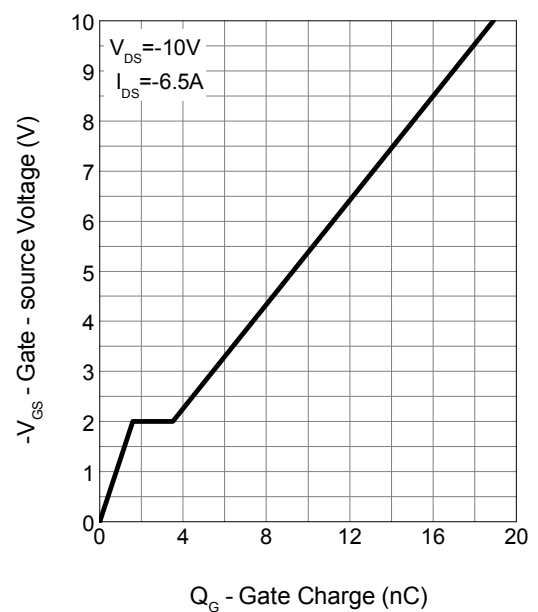
Typical Operating Characteristics

Power Dissipation

Drain Current

Safe Operation Area

Thermal Transient Impedance


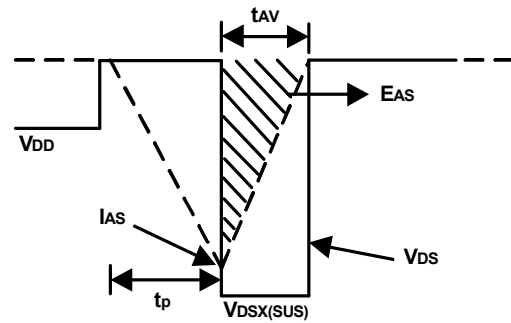
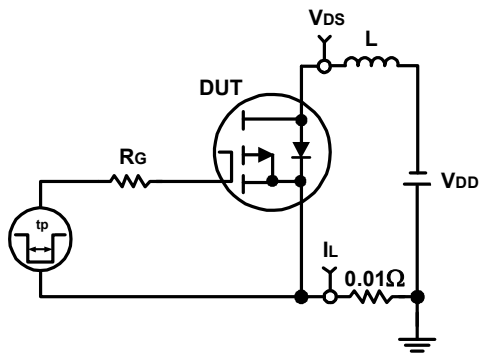
Typical Operating Characteristics (Cont.)

Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


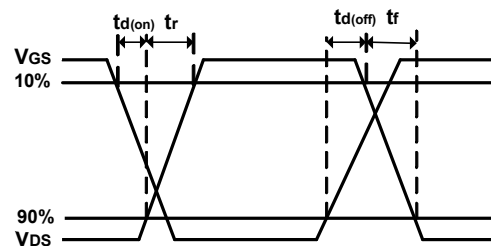
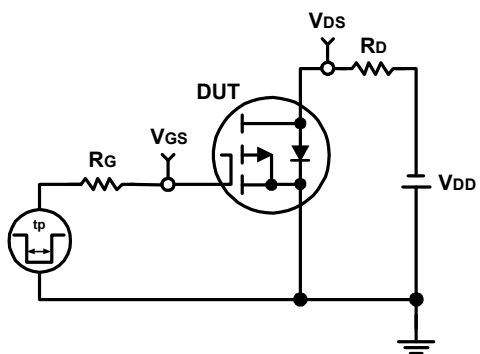
Typical Operating Characteristics (Cont.)

Drain-Source On Resistance

Source-Drain Diode Forward

Capacitance

Gate Charge


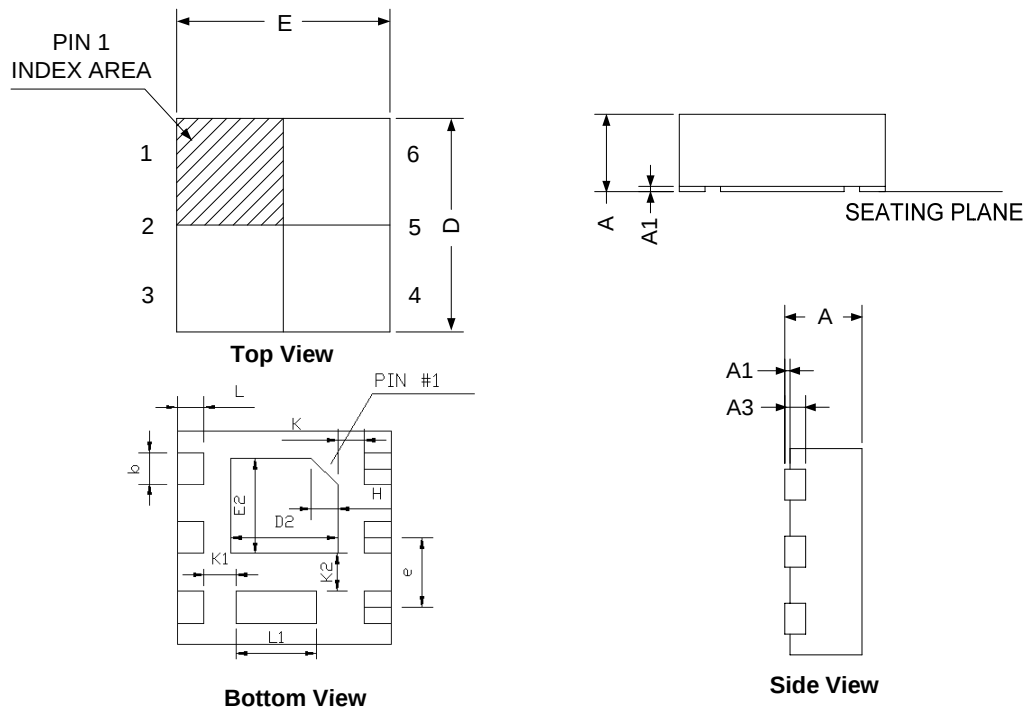
Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms

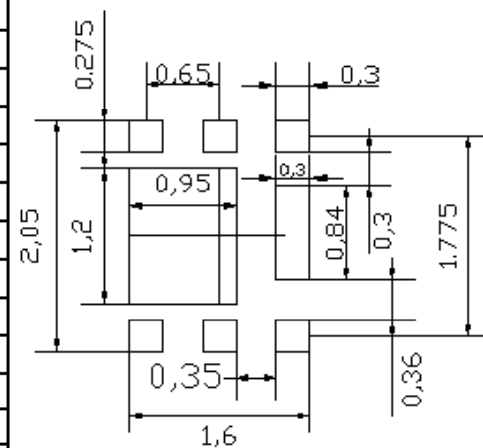


Package Information



SYMBOLS	DFN2x2A-6_EP1_S			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.70	0.80	0.028	0.031
A1	0.00	0.05	0.000	0.002
A3	0.2 REF		0.008 REF	
b	0.25	0.35	0.010	0.014
D	1.90	2.10	0.075	0.083
D2	0.90	1.10	0.035	0.043
E	1.90	2.10	0.075	0.083
E2	0.80	1.00	0.031	0.039
e	0.55	0.75	0.022	0.030
H	0.25 REF		0.01 REF	
K	0.15		0.006	
K1	0.20		0.008	
K2	0.25		0.010	
L	0.20	0.30	0.008	0.012
L1	0.65	0.85	0.026	0.033

RECOMMENDED LAND PATTERN



UNIT: mm