

General Description

WSD4280DN22 combines a P-Channel enhancement mode power MOSFET which is produced with high cell density and DMOS trench technology and a low forward voltage schottky diode. the tiny and thin outline saves PCB consumption.

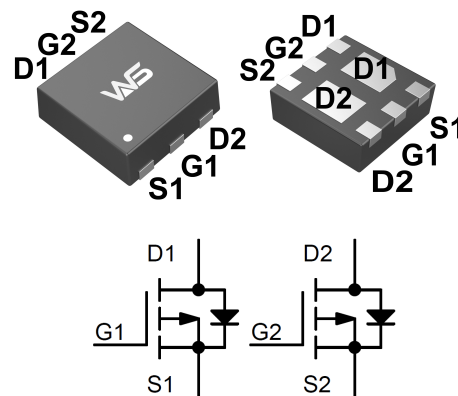
Applications

- Bidirectional blocking switch;
- DC-DC conversion applications;
- Li-battery charging;

Product Summary

V _{DSS}	R _{DS(on)(typ.)}	I _D
-15V	47mΩ@-4.5V	-4.6A
	61mΩ@-2.5V	
	90mΩ@-1.8V	

DFN2x2C-6_EP2_S Pin Configuration



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

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-15	V
V _{GS}	Gate-Source Voltage	±8	V
I _D @T _c =25°C	Continuous Drain Current, V _{GS} = -4.5V ¹	-4.6	A
I _{DM}	300μS Pulsed Drain Current, (V _{GS} = -4.5V)	-15	A
P _D	Power Dissipation Derating above T _A = 25°C (Note 2)	1.9	W
T _{STG} , T _J	Storage Temperature Range	-55 to 150	°C
R _{θJA}	Thermal Resistance Junction-ambient ¹	65	°C/W
R _{θJC}	Thermal Resistance Junction-Case ¹	50	°C/W

Note1: Devices mounted on FR4 PCB with minima soldering pad;

Note2: For a single chip.

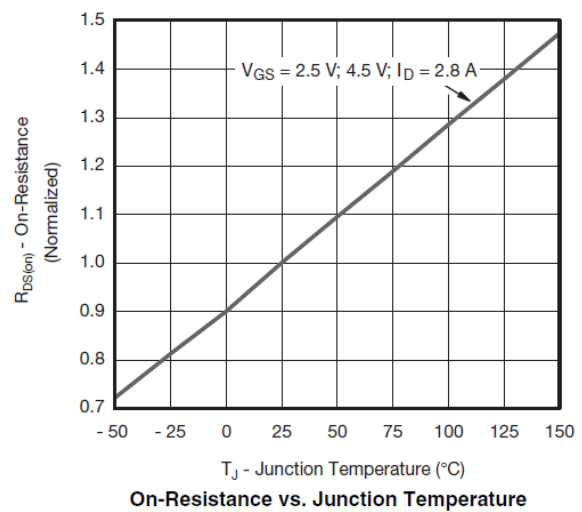
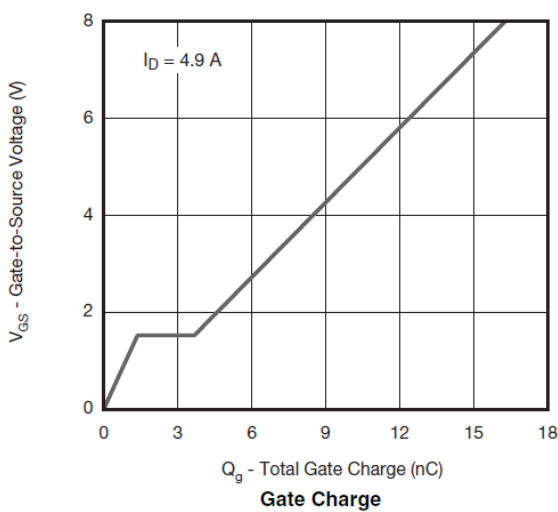
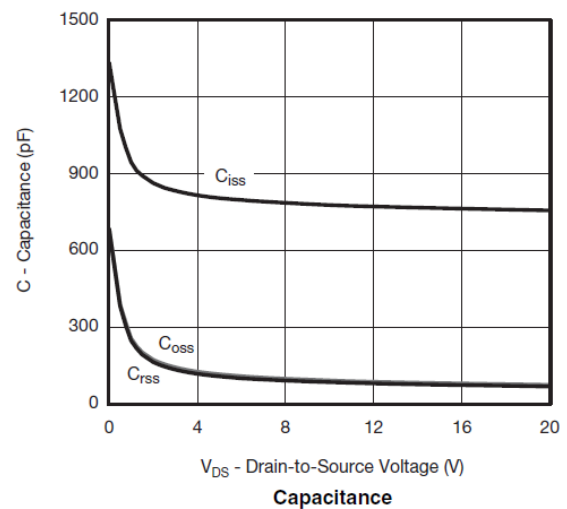
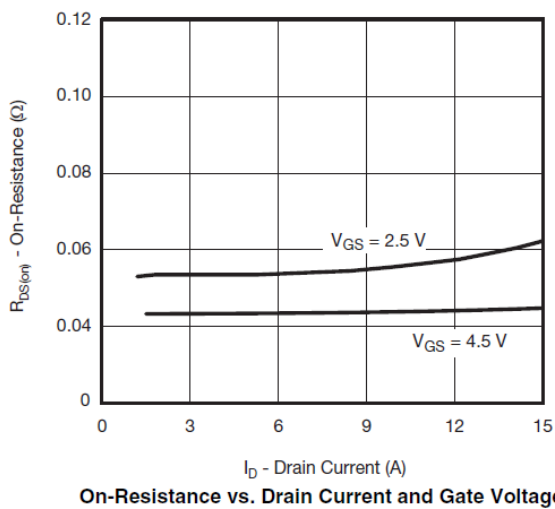
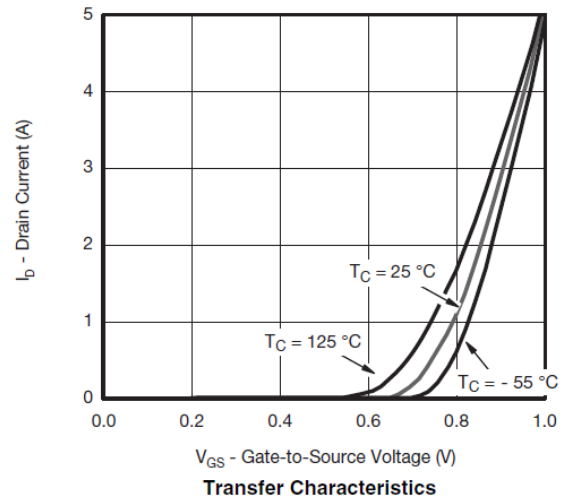
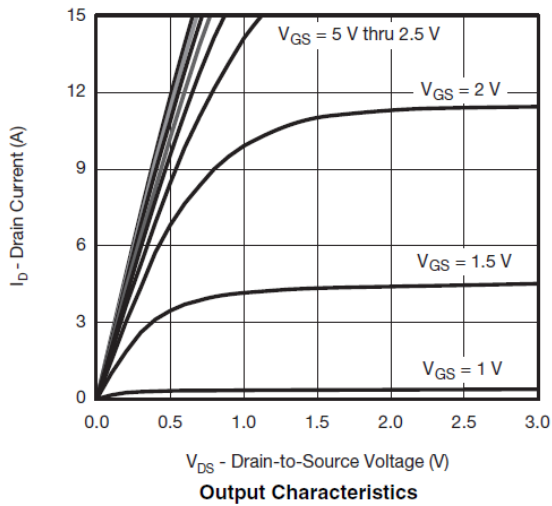
Electrical Characteristics (T_J=25 °C, unless otherwise noted)

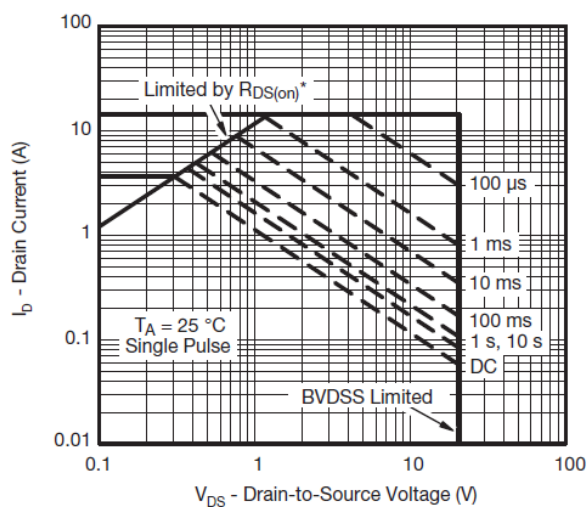
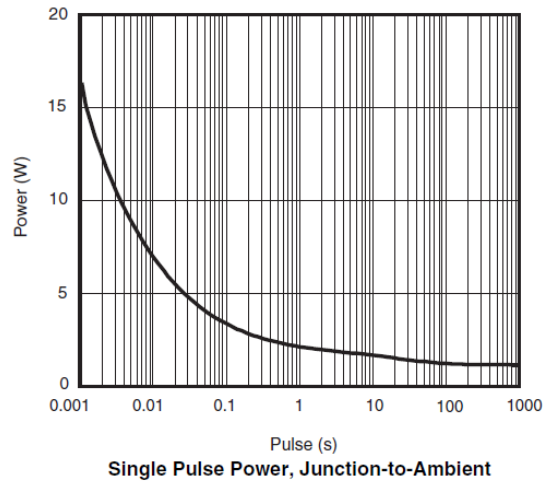
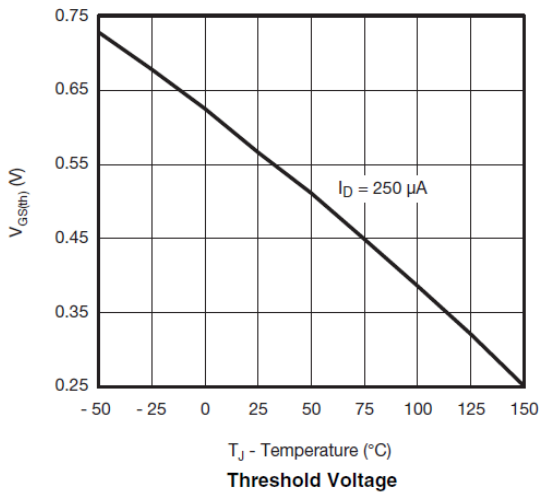
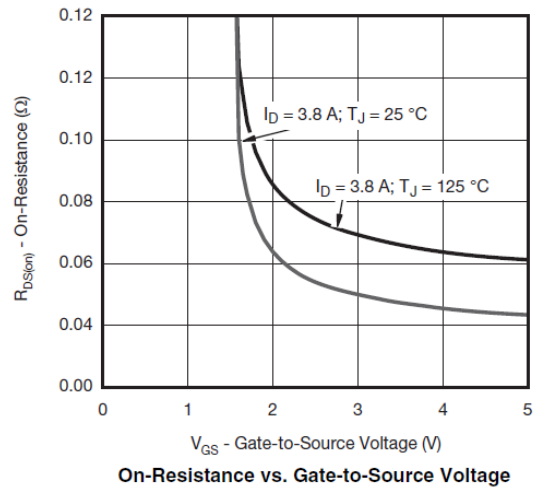
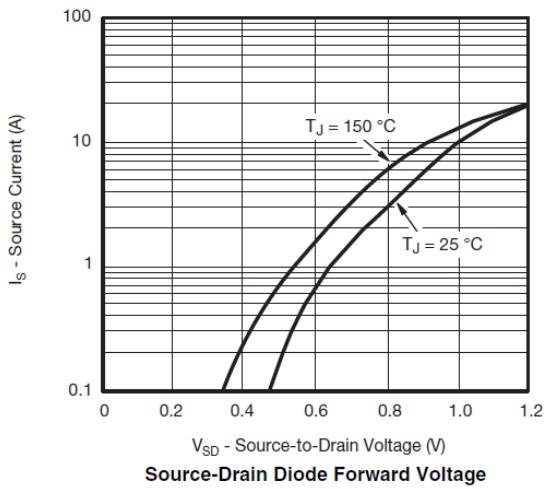
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-15	---	---	V
ΔBV _{DSS} /ΔT _J	BVDSS Temperature Coefficient	Reference to 25°C, I _D =-1mA	---	-0.01	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-4.5V, I _D =-1A	---	47	61	mΩ
		V _{GS} =-2.5V, I _D =-1A	---	61	80	
		V _{GS} =-1.8V, I _D =-1A	---	90	150	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-0.4	-0.62	-1.2	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	3.13	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-10V, V _{GS} =0V, T _J =25°C	---	---	-1	uA
		V _{DS} =-10V, V _{GS} =0V, T _J =55°C	---	---	-5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±12V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-1A	---	10	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	2	---	Ω
Q _g	Total Gate Charge (-4.5V)	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-4.6A	---	9.5	---	nC
Q _{gs}	Gate-Source Charge		---	1.4	---	
Q _{gd}	Gate-Drain Charge		---	2.3	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-10V, V _{GS} =-4.5V, R _G =1Ω I _D =-3.9A,	---	15	---	ns
T _r	Rise Time		---	16	---	
T _{d(off)}	Turn-Off Delay Time		---	30	---	
T _f	Fall Time		---	10	---	
C _{iss}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	---	781	---	pF
C _{oss}	Output Capacitance		---	98	---	
C _{rss}	Reverse Transfer Capacitance		---	96	---	

Note :

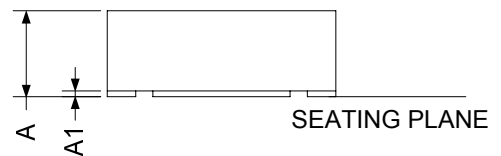
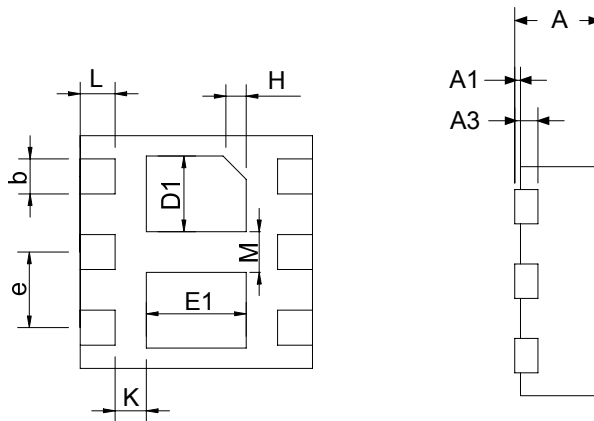
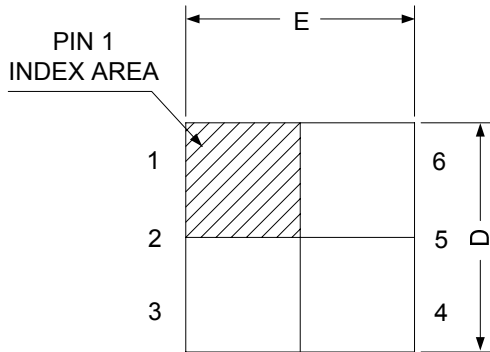
- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper, t_≤10sec.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The power dissipation is limited by 150°C junction temperature
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Performance Characteristics of P-Channel MOSFET

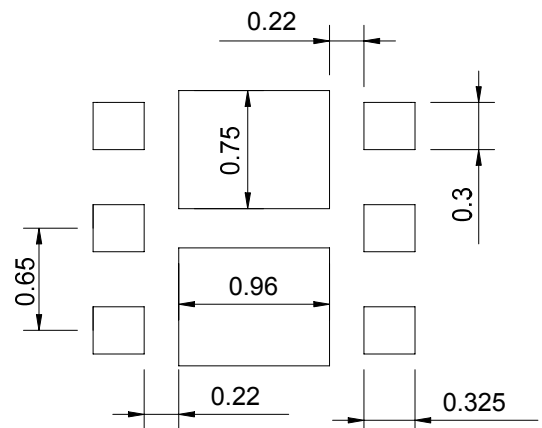




* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified

Package Information DFN2x2C-6_EP2_S


SYMBOL	DFN2x2C-6_EP2_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	0.200 REF		0.008 REF	
b	0.25	0.35	0.010	0.014
D	1.90	2.10	0.075	0.083
D1	0.55	0.75	0.022	0.030
E	1.90	2.10	0.075	0.083
E1	0.76	0.96	0.030	0.038
e	0.65 BSC		0.026 BSC	
H	0.20 BSC		0.008 BSC	
K	0.17	0.37	0.007	0.015
L	0.25	0.35	0.010	0.014
M	0.25	0.45	0.010	0.018

RECOMMENDED LAND PATTERN


UNIT: mm



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