

20V Common-Drain Dual N-Channel MOSFET

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Green Device Available
- ESD Protected 2KV Embedded

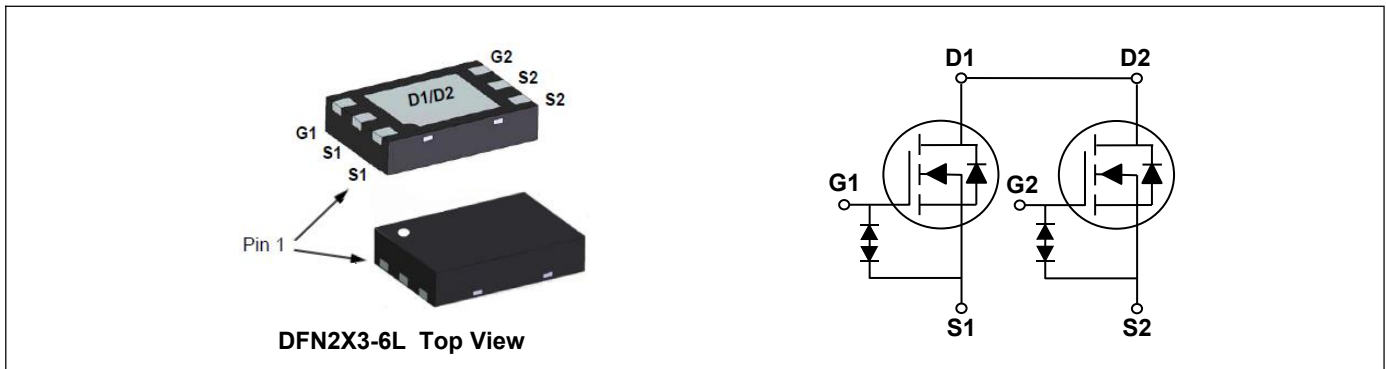
Product Summary



V_{DS}	20	V
I_D	10	A
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	11	m Ω
$R_{DS(ON)}$ (at $V_{GS}=2.5V$)	14	m Ω

Applications

- Handheld Instruments
- Battery Switch



Absolute Maximum Ratings ($T_A=25^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ¹	I_D	10	A
Pulsed Drain Current ²	I_{DM}	30	A
Total Power Dissipation	P_D	1.25	W
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$
Operating Junction Temperature Range	T_J	-55 to 150	$^{\circ}C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	---	100	$^{\circ}C/W$

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Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20	---	---	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=7A$	---	10	11	$m\Omega$
		$V_{GS}=2.5V, I_D=4A$	---	12	14	$m\Omega$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	0.5	---	1.0	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=16V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	---	---	± 100	nA
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=7A$	---	15	---	nC
Gate-Source Charge	Q_{gs}		---	3	---	
Gate-Drain Charge	Q_{gd}		---	4	---	
Turn-On Delay Time	$T_{d(on)}$	$V_{DS}=10V, V_{GS}=4.5V, R_G=4.5\Omega, I_D=7A$	---	0.1	---	ns
Rise Time	T_r		---	0.3	---	
Turn-Off Delay Time	$T_{d(off)}$		---	3.4	---	
Fall Time	T_f		---	2.8	---	
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V, f=1\text{MHz}$	---	940	---	pF
Output Capacitance	C_{oss}		---	130	---	
Reverse Transfer Capacitance	C_{rss}		---	120	---	

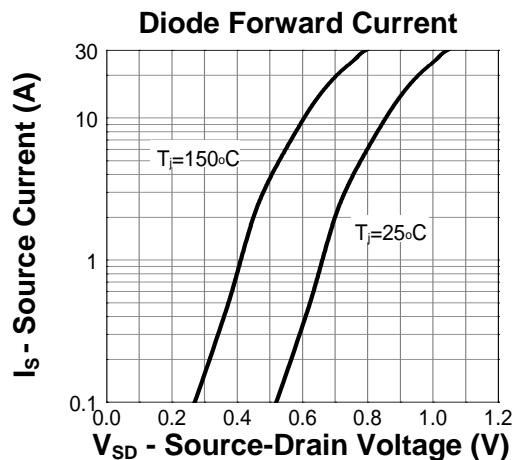
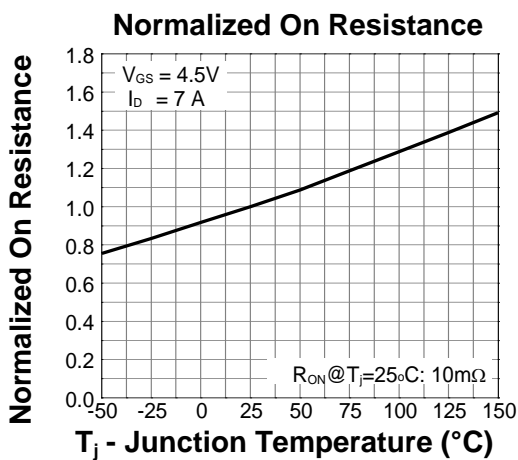
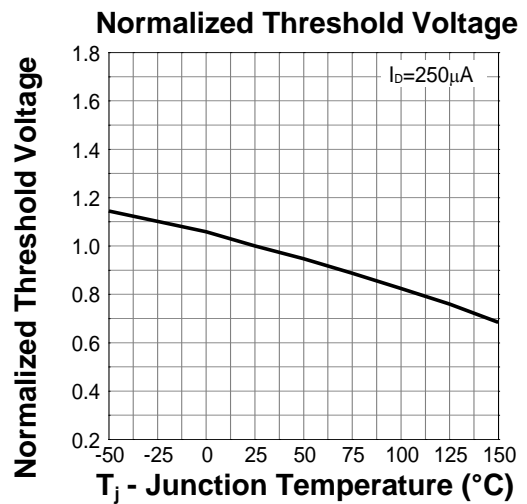
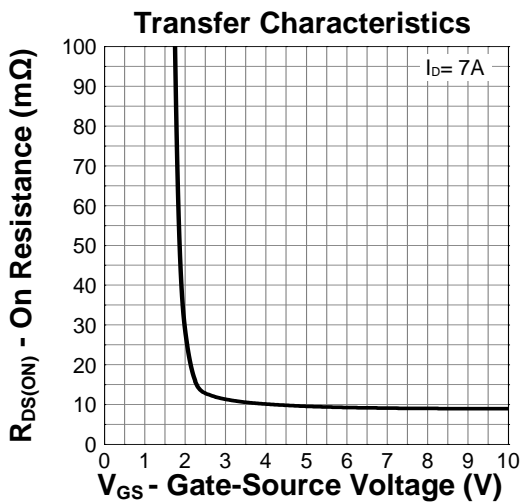
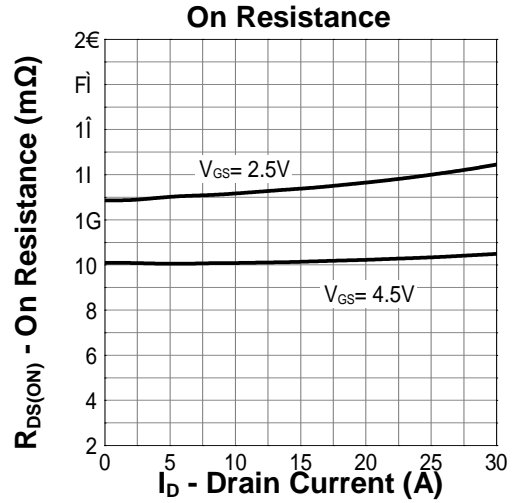
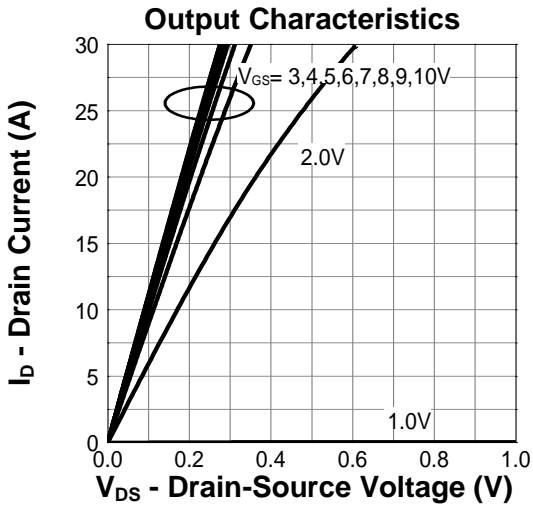
Drain-Source Diode Characteristics

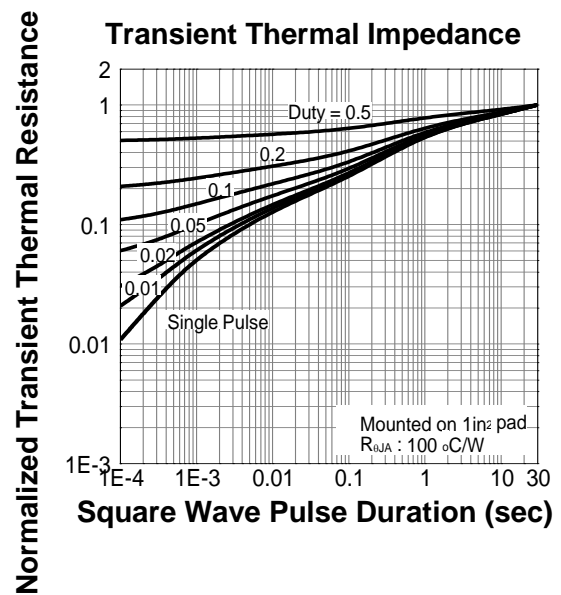
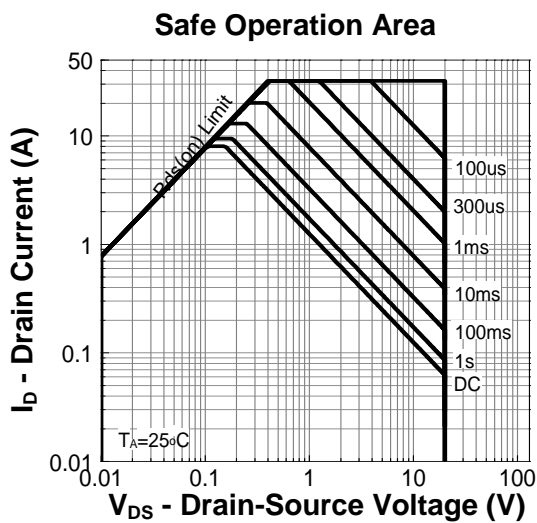
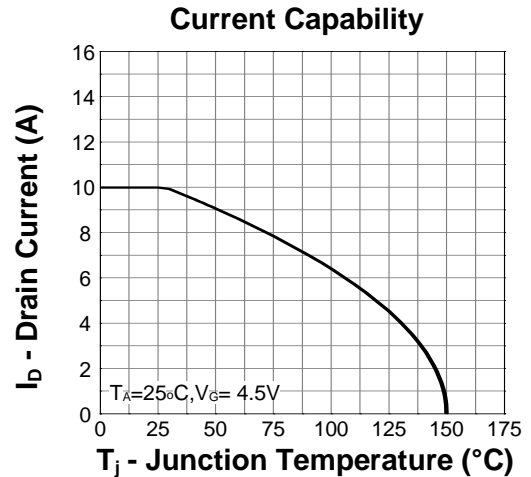
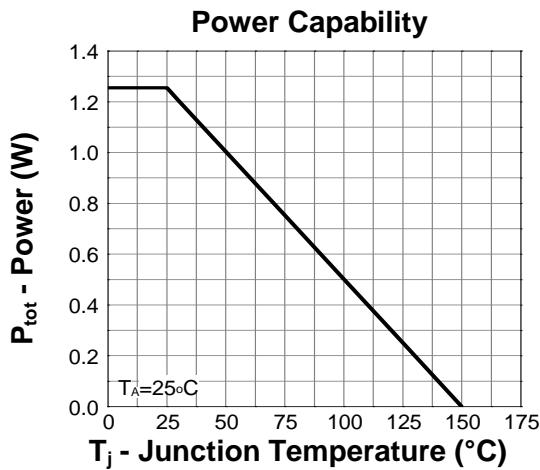
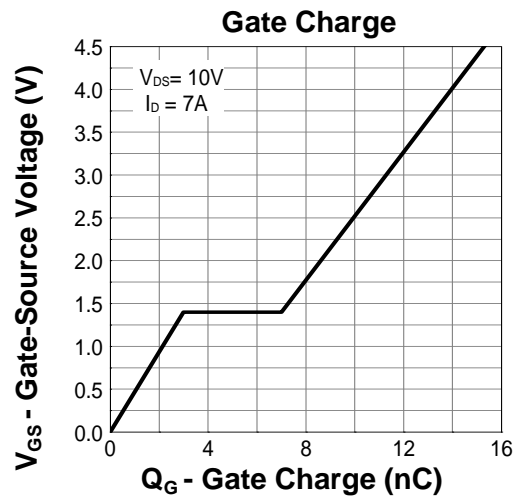
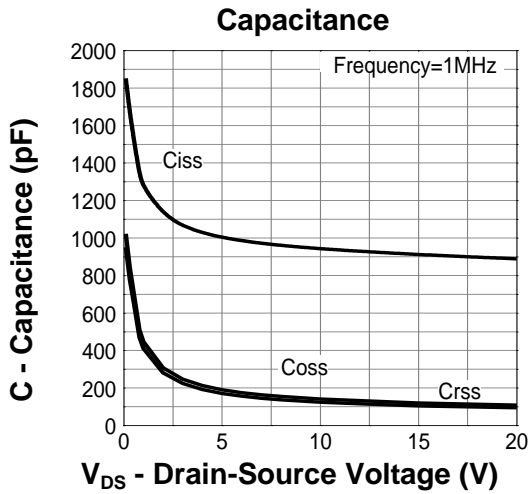
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=7A, T_J=25^\circ\text{C}$	---	0.8	1.2	V

Note:

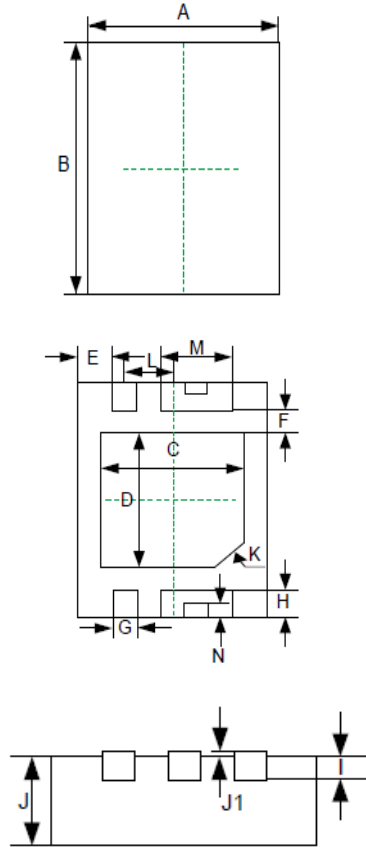
- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

Typical Characteristics

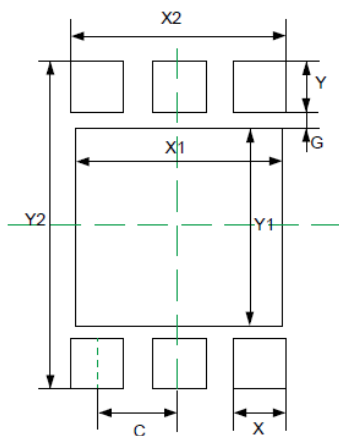




DFN2X3-6L Package Outline Dimensions



Dim	Millimeters	
	MIN	MAX
A	1.95	2.05
B	2.95	3.05
C	1.45	1.55
D	1.65	1.75
E	0.33	0.43
F	0.25	0.35
G	0.20	0.30
H	0.35	0.45
I	0.2BSC	
J	0.527	0.577
J1	0-0.05	
K	0.3X45° BSC	
L	0.5 BSC	
M	0.70	0.80
N	0.10	0.20



Dim	Millimeters
C	0.650
G	0.150
X	0.400
X1	1.600
X2	1.700
Y	0.530
Y1	1.940
Y2	3.300