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TPM20PB3D6

20V Dual P-Channel Enhancement Mode MOSFET

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Features

- High-speed switching
- Low threshold voltage

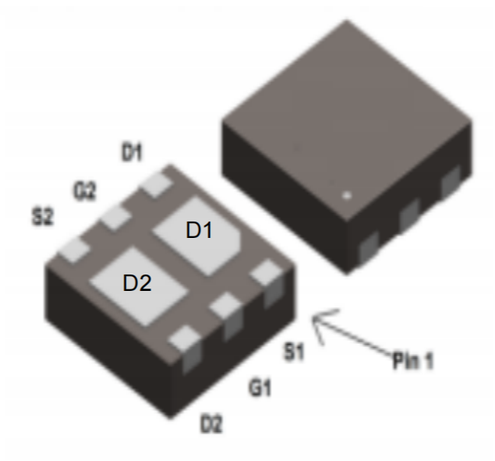
Application

- PWM applications
- Power management

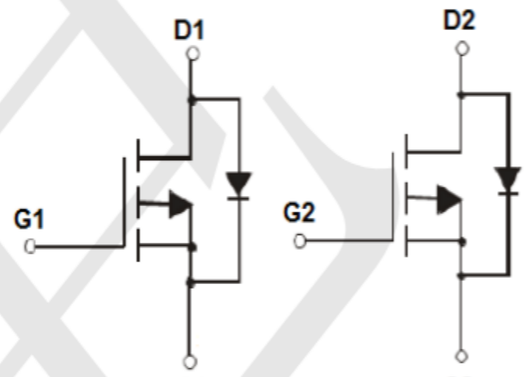
Ordering Information

- Package: DFN2x2-6LC
- Shipping Qty:3000/7inch Tape□Reel

Package and Pin Configuration



Circuit diagram



Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	-20	V
Gate-to-Source Voltage	V_{GSS}	±12	V
Continuous Drain Current *2	I_D	-3.0	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *1	P_D	2	W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = -250μA	-20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -20V, V_{GS} = 0V	-	-	-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±8V, V_{DS} = 0V	-	-	±100	nA
On Characteristics *2						
$R_{DS(ON)}$	Static Drain-Source On-resistance	V_{GS} = -4.5V,I_D = -2.8A	-	-	100	mΩ
		V_{GS} = -2.5V,I_D = -2A	-	-	135	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250μA	-0.5	-	-1.0	V
Dynamic Characteristics *3						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = -15V f = 1.0MHz	-	822	-	pF
C_{OSS}	Output Capacitance		-	58	-	
C_{RSS}	Reverse Transfer Capacitance		-	52	-	
Switching Characteristics *3						
$t_{d(ON)}$	Turn-on Delay Time	V_{GS} = -4.5V V_{DD} = -6V I_D = -1A R_G = 6Ω	-	20	-	ns
t_r	Turn-on Rise Time		-	40	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	30	-	
t_f	Turn-Off Fall Time		-	20	-	
Q_G	Total Gate-Charge	V_{DD} = -10V V_{GS} = -3V I_D = -1.7A	-	4	-	nC
Q_{GS}	Gate to Source Charge		-	1.2	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	1.8	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage *2	I_{SD} = -0.3A, V_{GS} = 0V, T_J = 25°C	-	-	-1.2	V

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

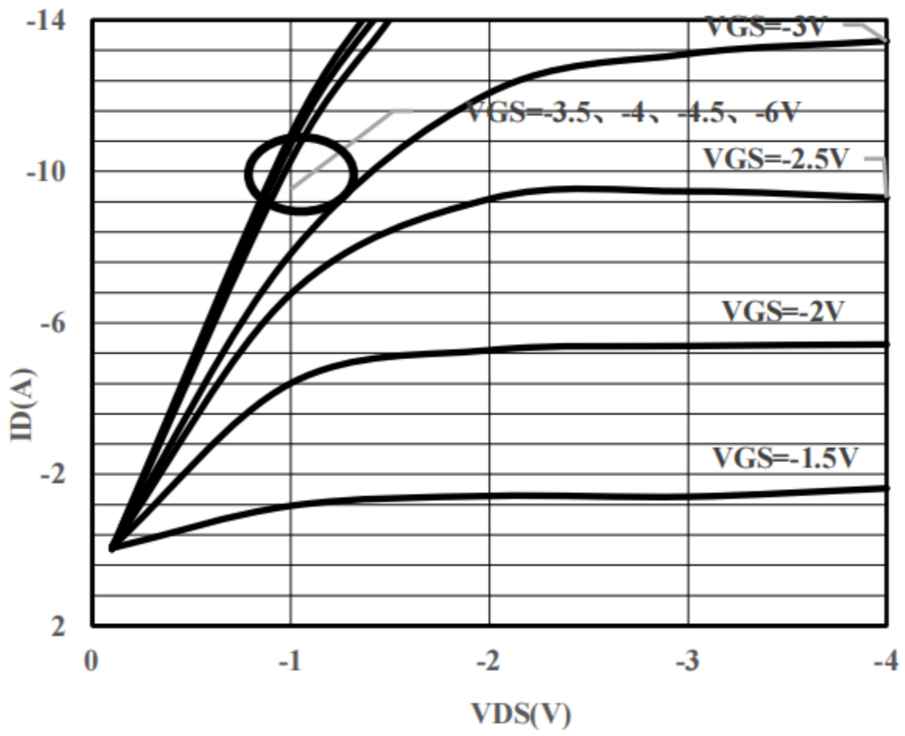


Fig 1 On-Region Characteristics

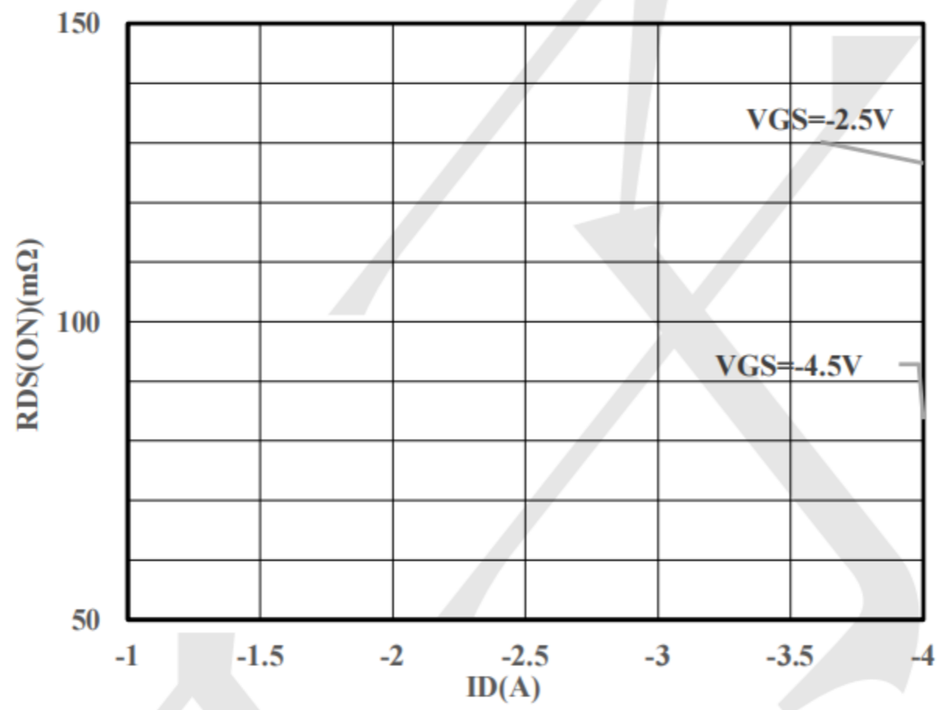


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

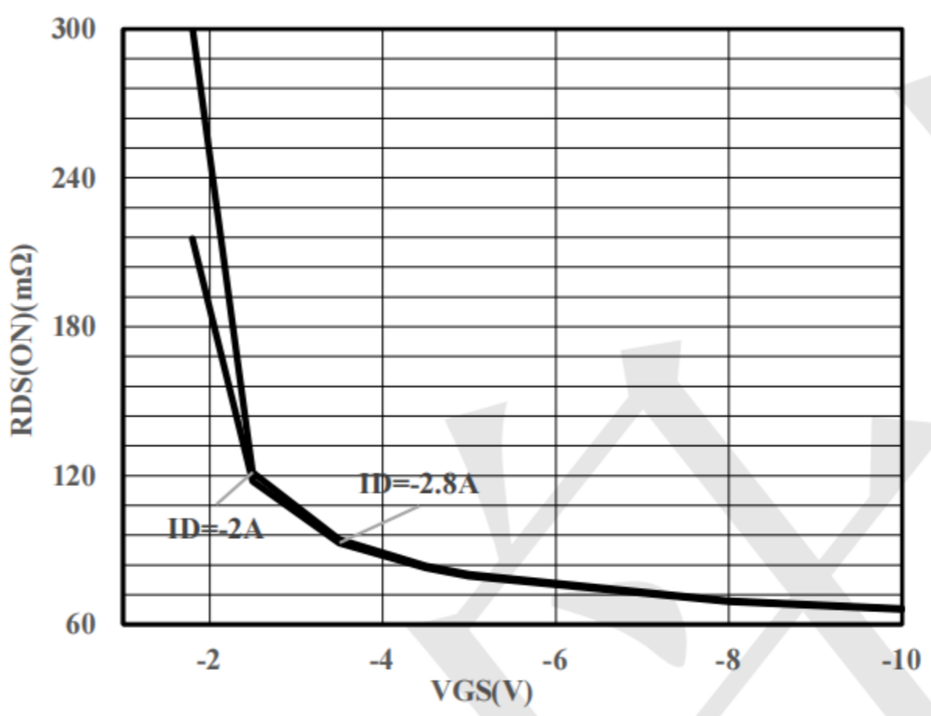


Fig 3 On-Resistance vs. Gate-Source Voltage

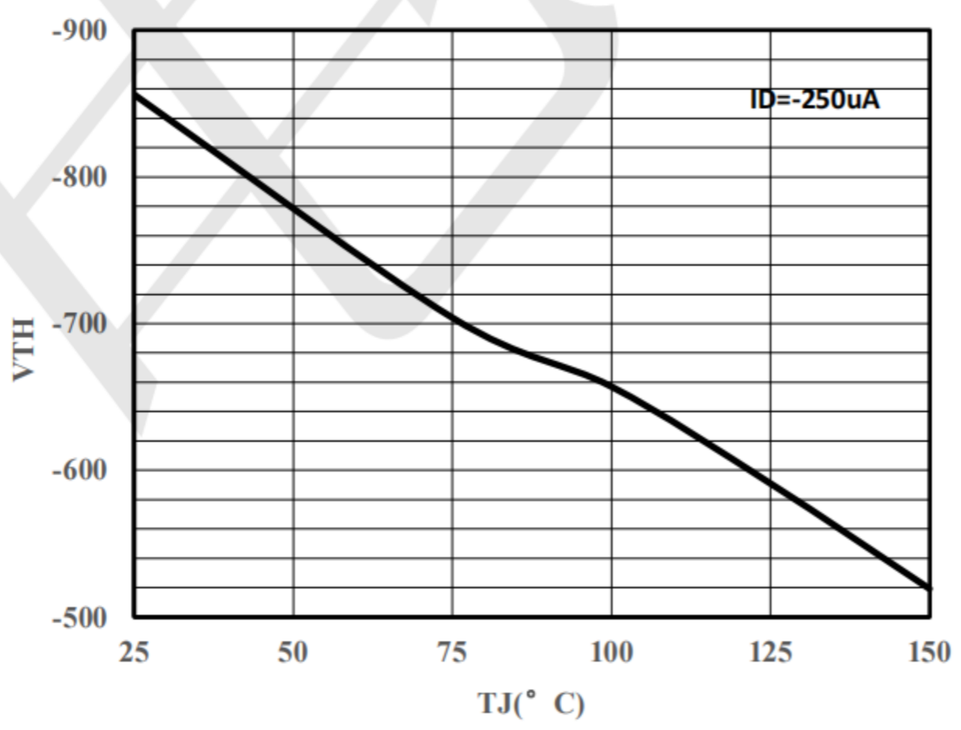


Fig 4 Gate Voltage vs. Junction Temperature

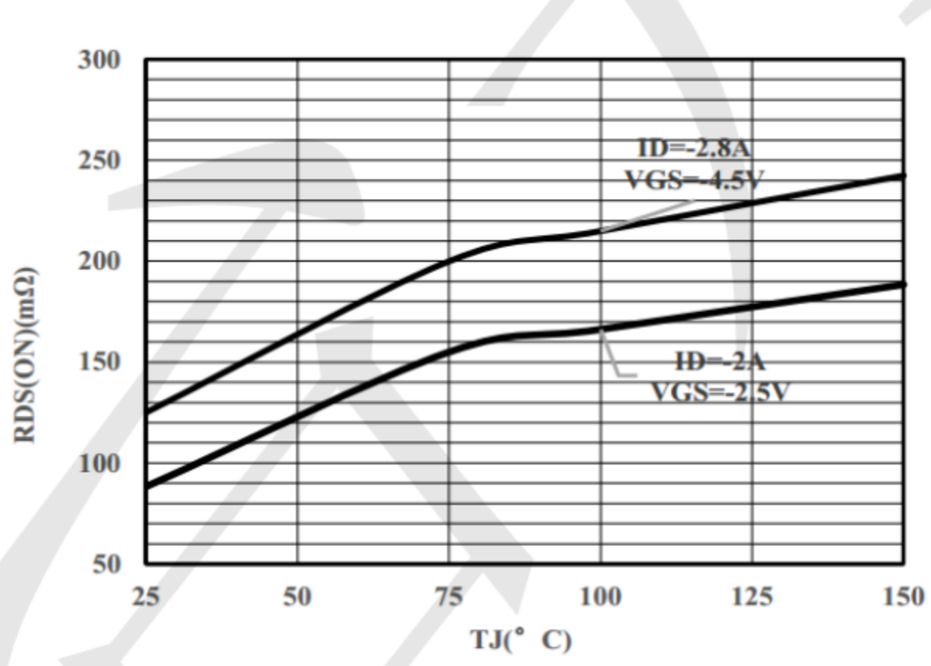


Fig 5 On-Resistance vs. Junction Temperature

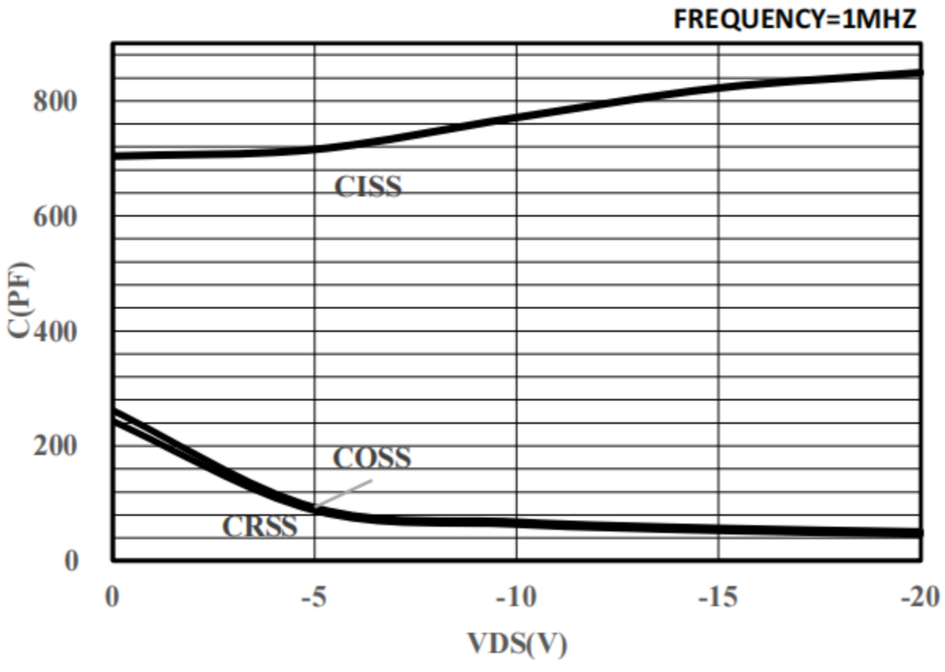


Fig 6 Capacitance Characteristics

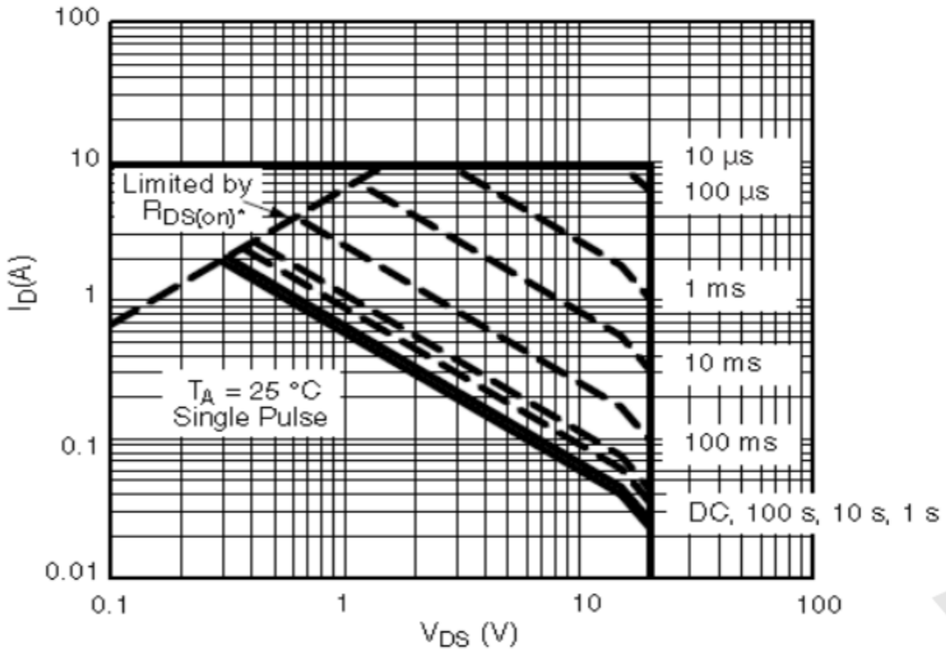


Fig 7 Maximum Safe Operating Area

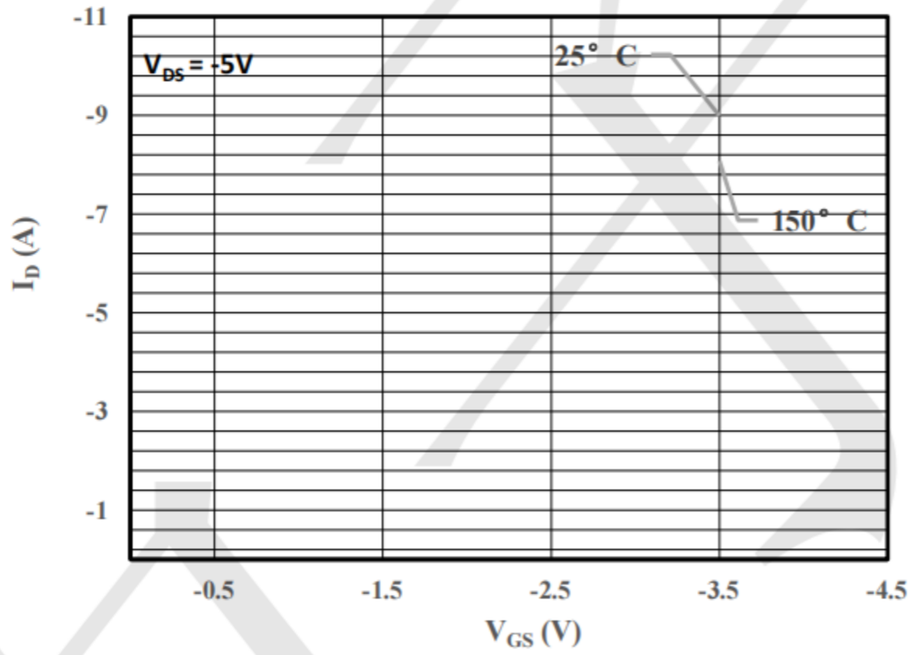
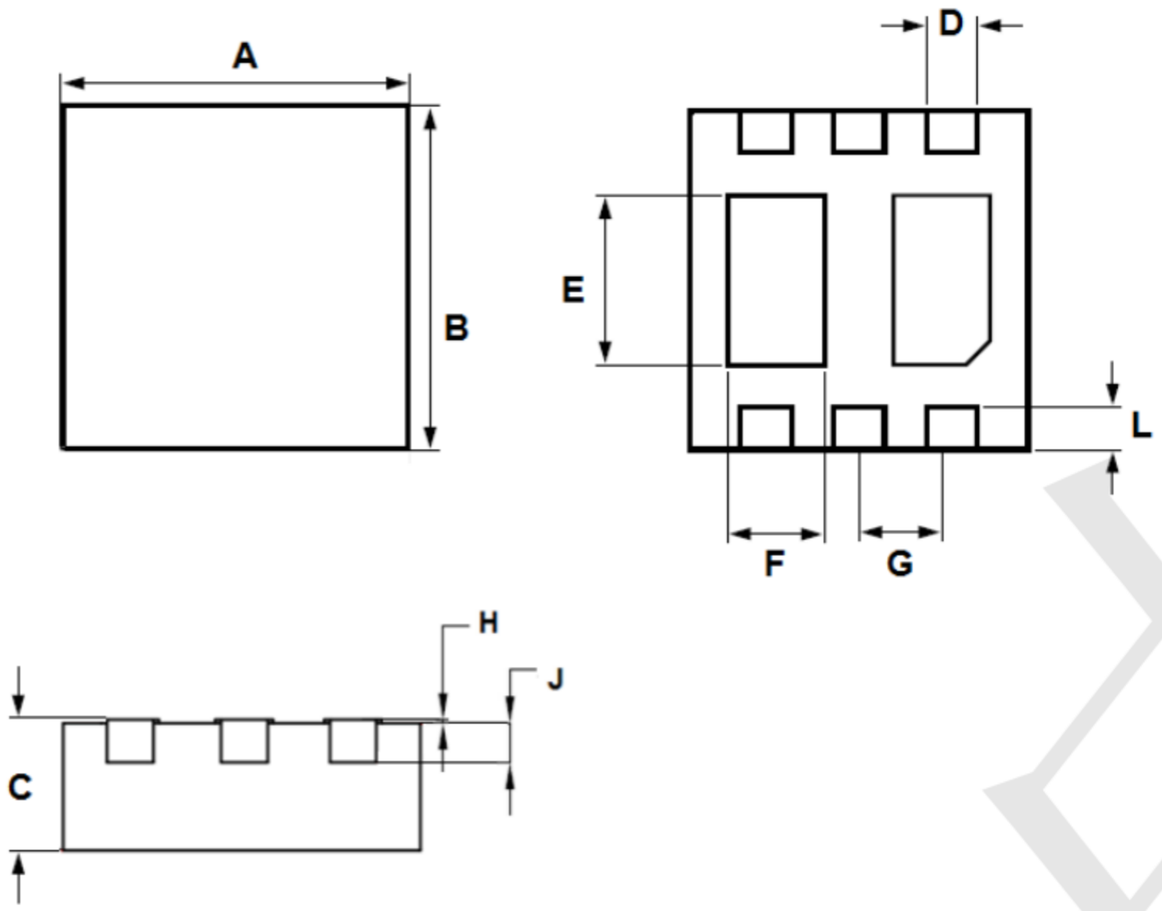


Fig 8 Transfer Characteristics

DFN2X2-6LC Package Outline Drawing



Dimension	Min.	Max.
A	1.900	2.100
B	1.900	2.100
C	0.500	0.600
D	0.250	0.350
E	0.800	1.000
F	0.600	0.800
G	0.550	0.750
H	0.000	0.050
J	0.103	0.303
L	0.174	0.326

Suggested Pad Layout

