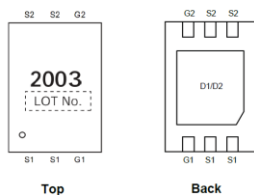
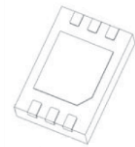
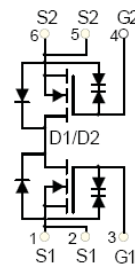


Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
18V	6.2m Ω @4.5V	12A
	6.4m Ω @4.0V	
	6.8m Ω @3.8V	
	7.2m Ω @3.1V	
	8.2m Ω @2.5V	

DESCRIPTION

The GPCD2003 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch, facilitated by its common-drain configuration.

MARKING:

DFN2×3-6L

Schematic diagram

ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	18	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	12	A
Pulsed Drain Current	I_{DM}	50	A
Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	

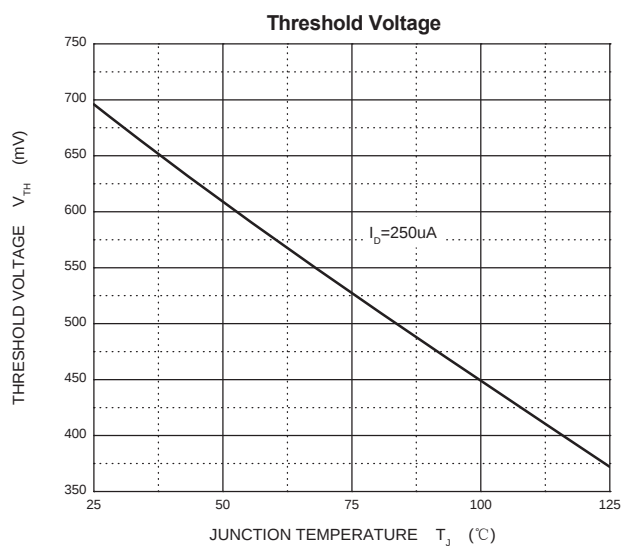
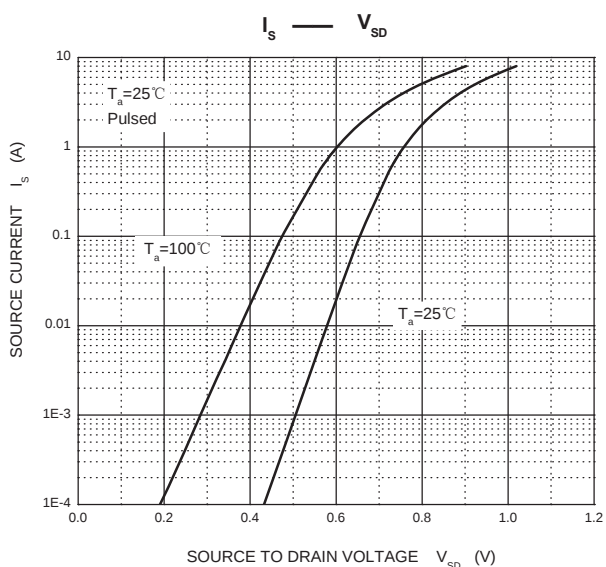
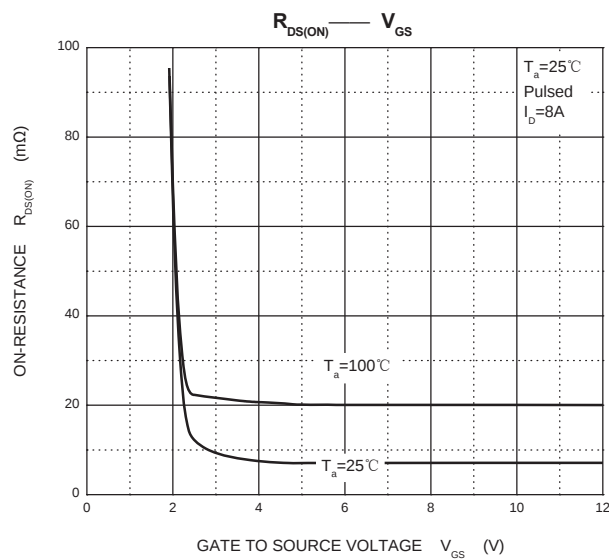
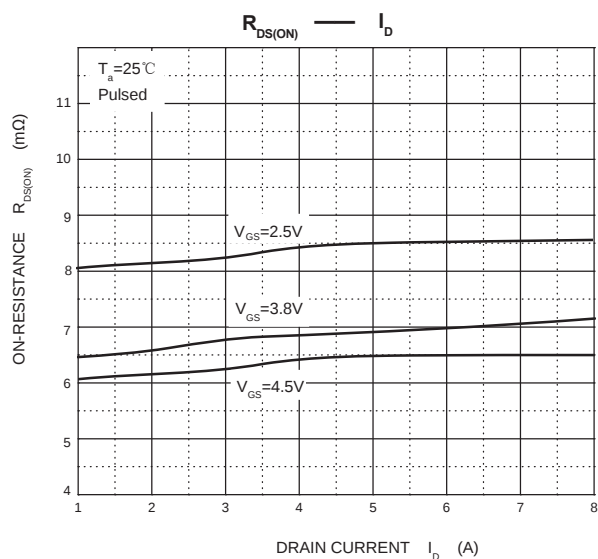
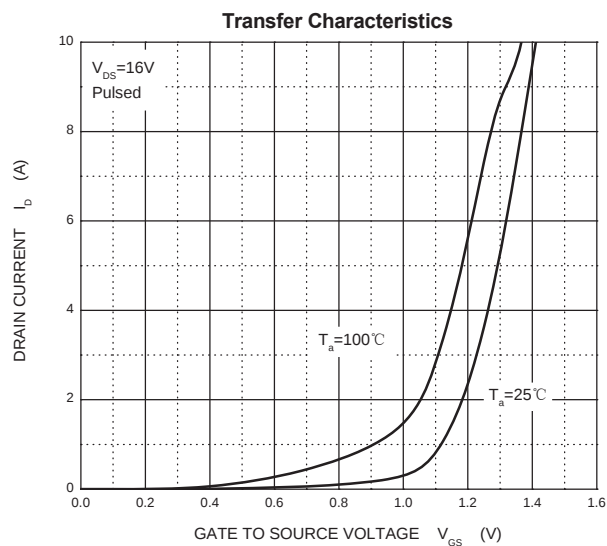
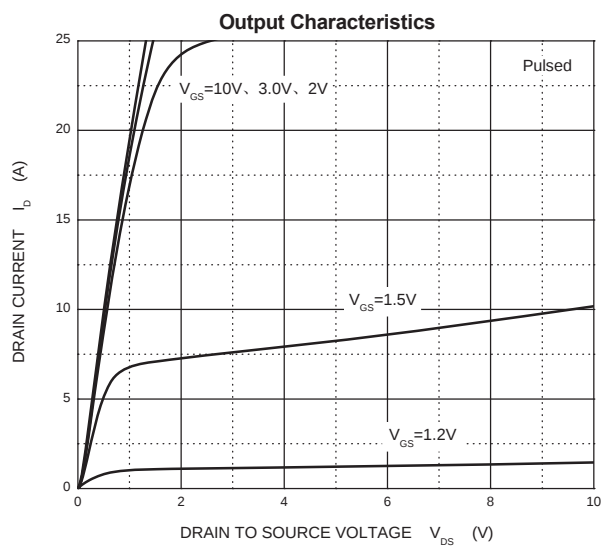
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	18			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =16V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±4.5V, V _{DS} = 0V			±1	μA
		V _{GS} =±8V, V _{DS} = 0V			±10	μA
Gate threshold voltage ¹	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.0	V
Drain-source on-resistance ¹	R _{DS(on)}	V _{GS} =4.5V, I _D =3A	4.5	6.2	7.2	mΩ
		V _{GS} =4.0V, I _D =3A	4.8	6.4	7.5	
		V _{GS} =3.8V, I _D =3A	5.0	6.8	8.2	
		V _{GS} =3.1V, I _D =3A	5.5	7.2	9.2	
		V _{GS} =2.5V, I _D =3A	6.2	8.2	10.5	
Forward tranconductance ¹	g _{FS}	V _{DS} =5V, I _D =7A	9	36		S
Diode forward voltage ¹	V _{SD}	I _S =1A, V _{GS} = 0V			1	V
DYNAMIC PARAMETERS ²						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f =1MHz		1950		pF
Output Capacitance	C _{oss}			250		
Reverse Transfer Capacitance	C _{rss}			210		
Total gate charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =7A		17		nC
Gate-source charge	Q _{gs}			2.0		
Gate-drain charge	Q _{gd}			5.1		
SWITCHING PARAMETERS ²						
Turn-on delay time	t _{d(on)}	V _{GS} =5V,V _{DD} =10V,R _L =1.35Ω,R _{GEN} =3Ω		2.2		ns
Turn-on rise time	t _r			5.9		
Turn-off delay time	t _{d(off)}			40		
Turn-off fall time	t _f			90		
Drain-Source Diode Characteristics						
Diode Forward Current	I _S				6.0	A

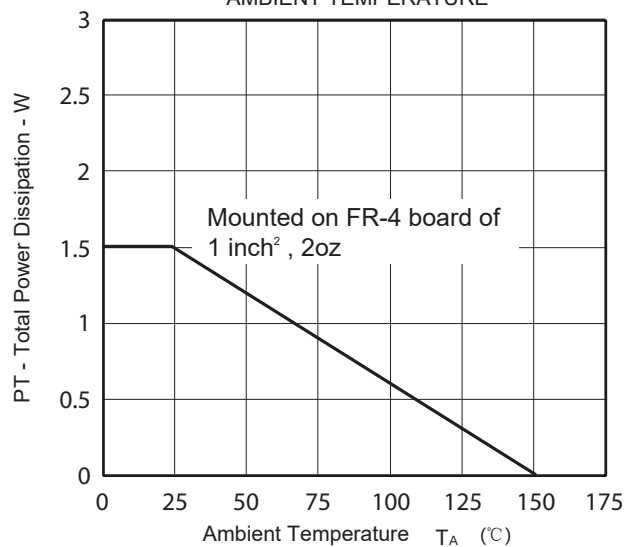
Notes :

1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 0.5%.
2. Guaranteed by design, not subject to production testing.

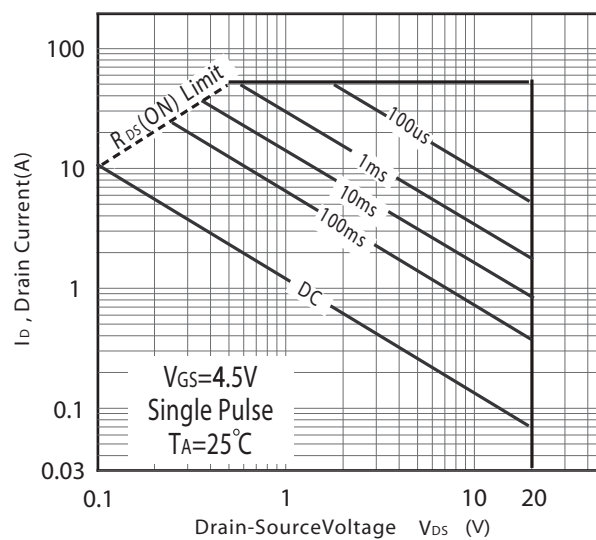
Typical Electrical and Thermal Characteristics



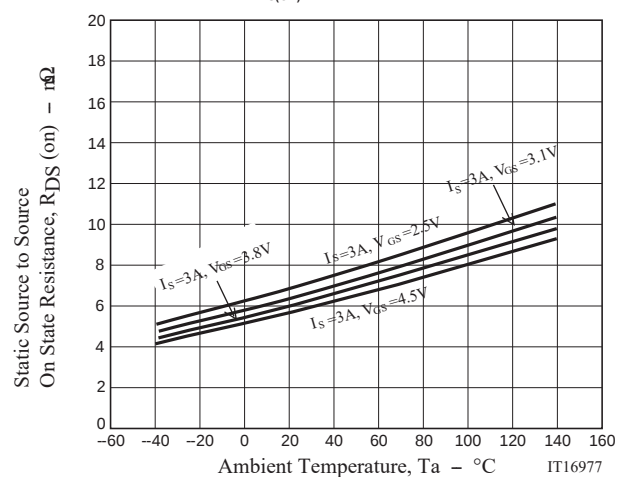
TOTAL POWER DISSIPATION vs.
AMBIENT TEMPERATURE

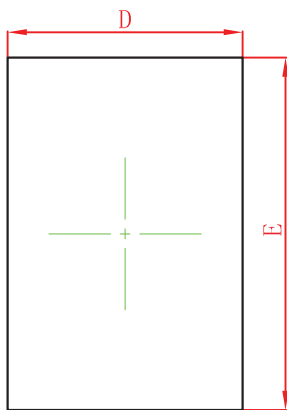


Maximum Safe Operating Area

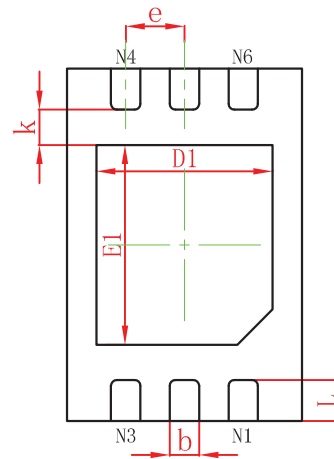


$R_{DS(ON)}$ — T_A

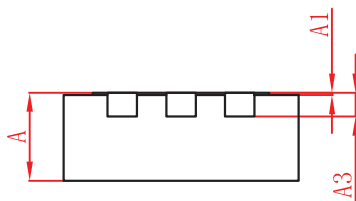


DFN2×3-6L Package Information


TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.950	2.050	0.077	0.081
E	2.950	3.050	0.116	0.120
D1	1.450	1.550	0.057	0.061
E1	1.650	1.750	0.065	0.069
k	0.200MIN.		0.008MIN.	
b	0.200	0.300	0.008	0.012
e	0.500TYP.		0.020TYP.	
L	0.300	0.400	0.012	0.016