



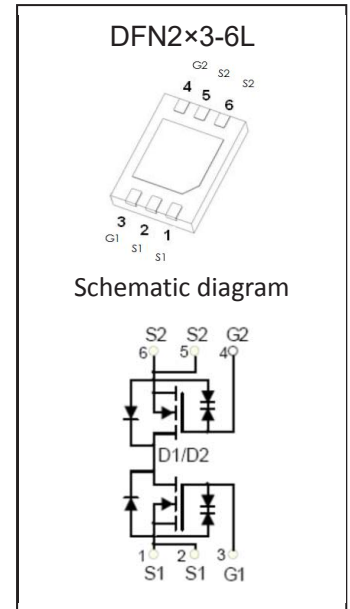
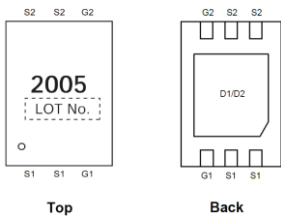
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	8.7mΩ@4.5V	8A
	9.0mΩ@4.0V	
	9.1mΩ@3.8V	
	9.8mΩ@3.1V	
	10.8mΩ@2.5V	

DESCRIPTION

The GPCD2005 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:



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	8	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	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	

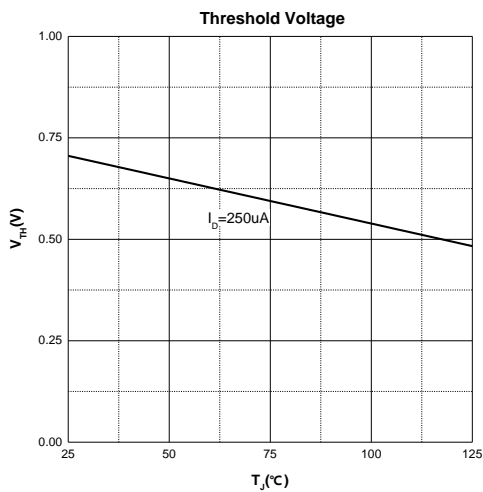
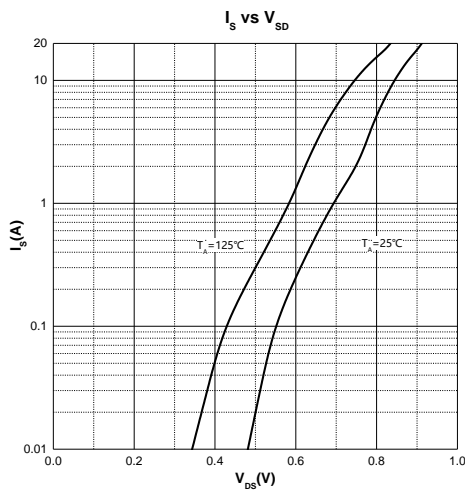
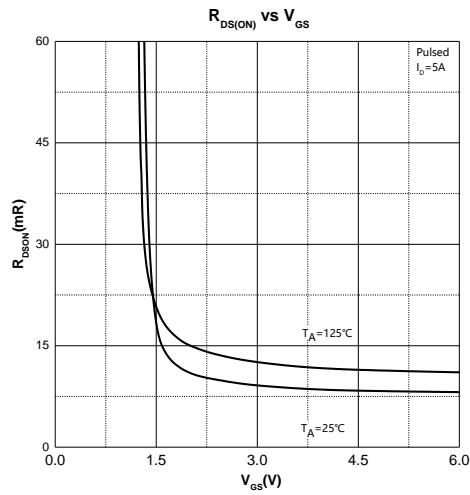
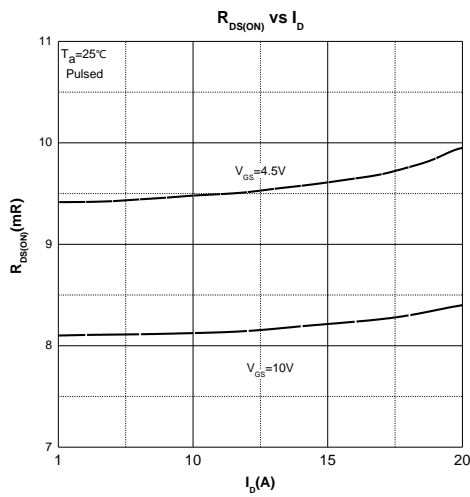
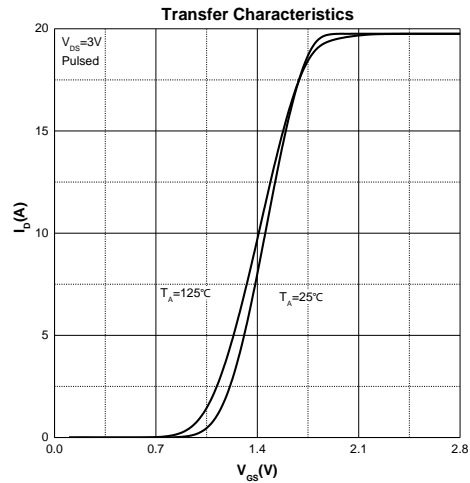
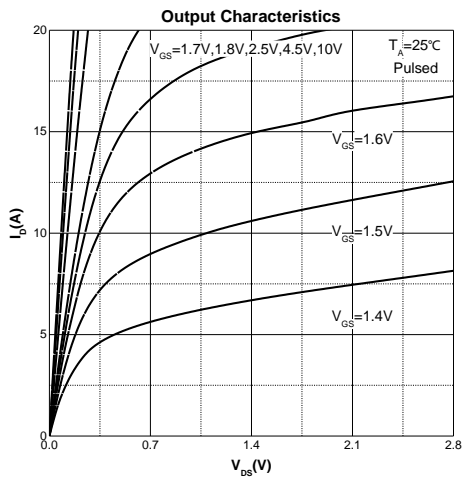
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20			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	7	9.2	12	mΩ
		V _{GS} = 4.0V, I _D = 3A	7.3	9.7	12.5	
		V _{GS} = 3.8V, I _D = 3A	7.5	9.9	13	
		V _{GS} = 3.1V, I _D = 3A	8	11	14	
		V _{GS} = 2.5V, I _D = 3A	9.5	13	15	
Forward transconductance 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 PARAMETERS²						
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		1800		pF
Output Capacitance	C _{oss}			230		
Reverse Transfer Capacitance	C _{rss}			200		
Total gate charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 7A		17		nC
Gate-source charge	Q _{gs}			1.5		
Gate-drain charge	Q _{gd}			4.7		
SWITCHING PARAMETERS²						
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			7.2		
Turn-off delay time	t _{d(off)}			49		
Turn-off fall time	t _f			108		
Drain-Source Diode Characteristics						
Diode Forward Current	I _S				6.0	A

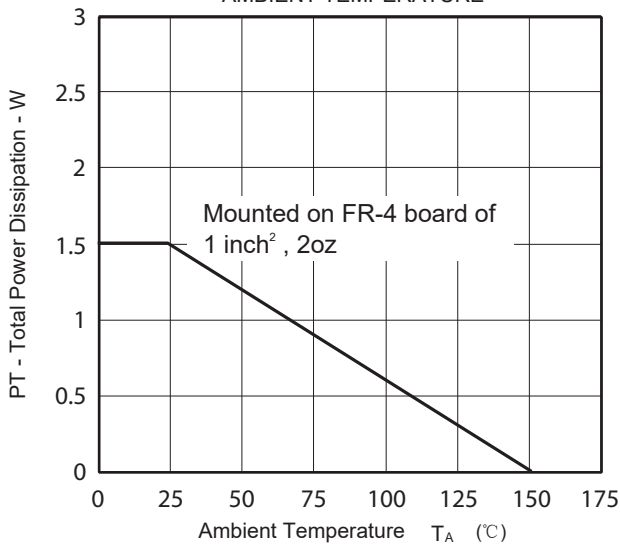
Notes :

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

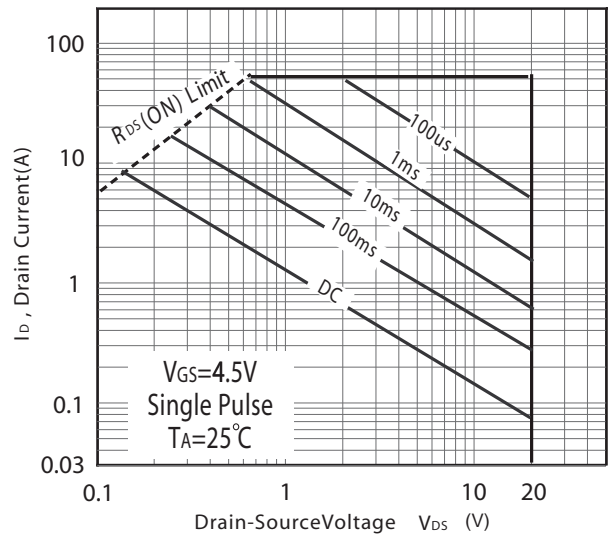
Typical Characteristics



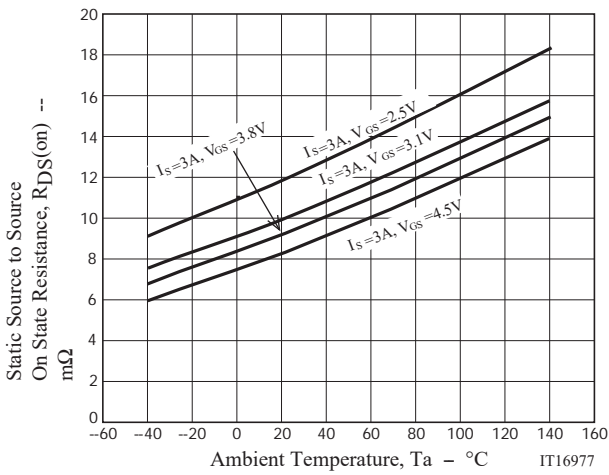
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



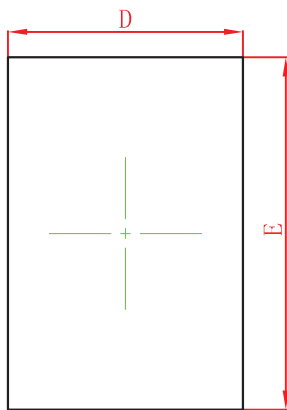
Maximum Safe Operating Area



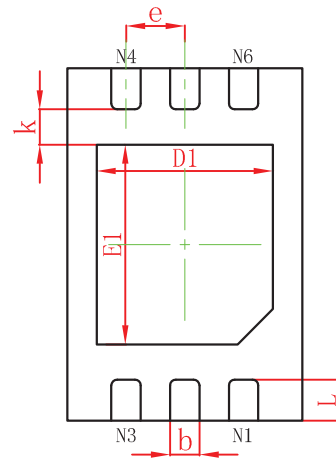
$R_{DS(ON)}$ vs. T_A



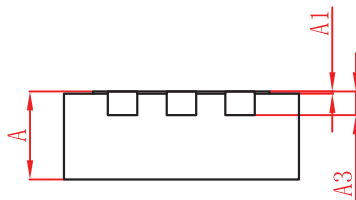
DFNWB2×3-6L-C Package Information



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