

Product Summary

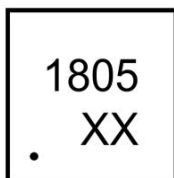
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
18V	4mΩ@4.5V	15A
	4.1mΩ@4V	
	4.2mΩ@3.8V	
	4.5mΩ@3.1V	
	5.2mΩ@2.5V	

Feature

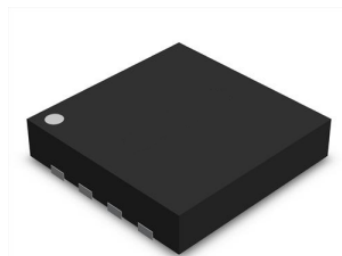
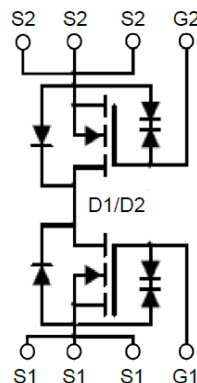
- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter

MARKING:


1805= Device Code
 XX = Date Code

DFN3×3-8L

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}	±10	V
Continuous Drain Current ^{1,4}	I_D	15	A
Pulsed Drain Current ²	I_{DM}	60	A
Power Dissipation ⁴	P_D	3	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	42	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

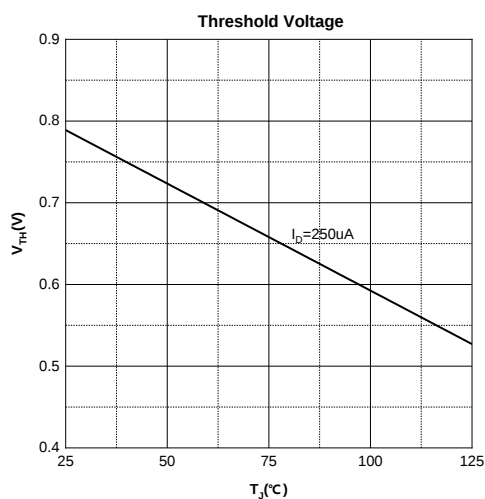
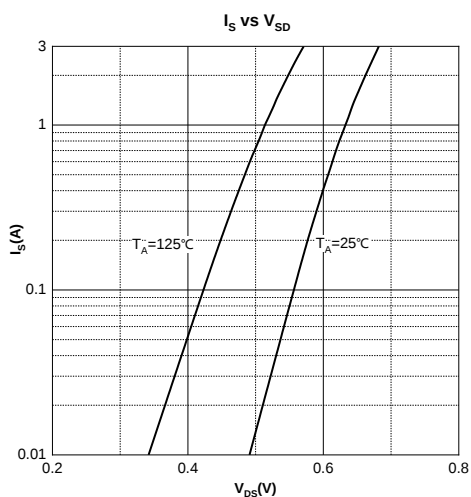
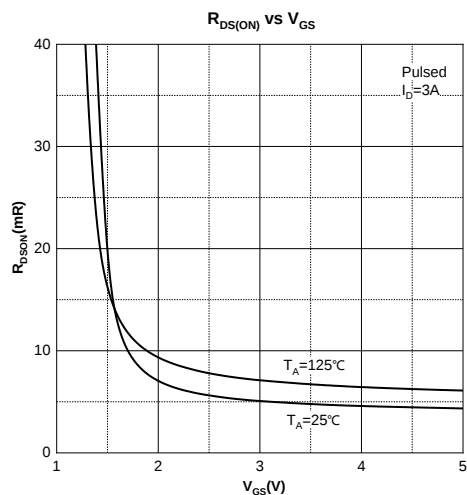
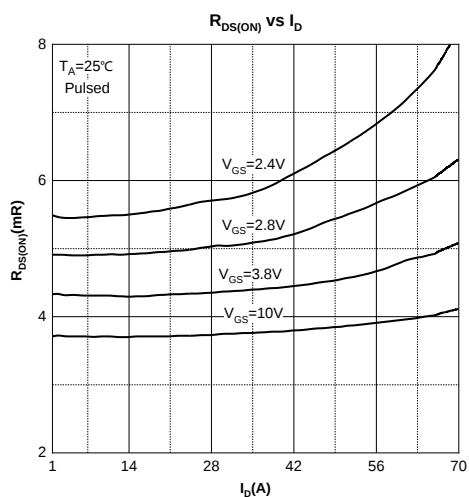
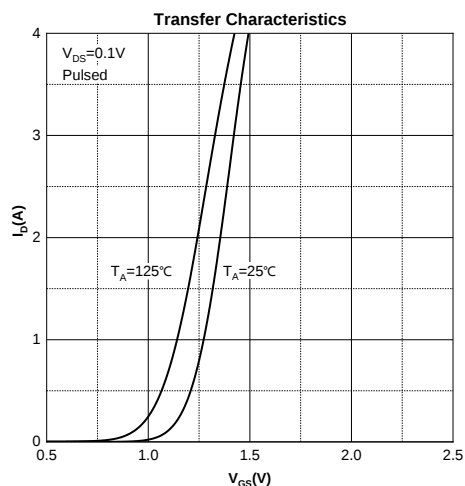
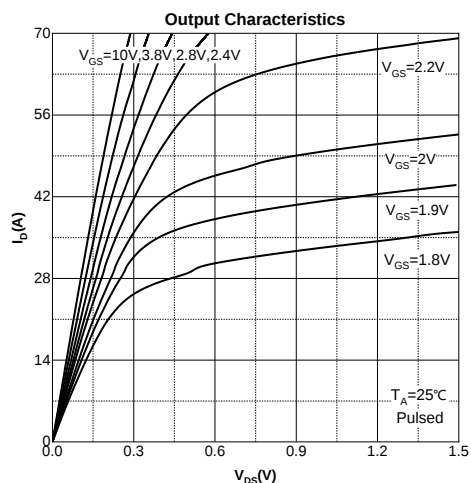
MOSFET ELECTRICAL CHARACTERISTICS($T_A = 25^\circ\text{C}$ unless otherwise noted)

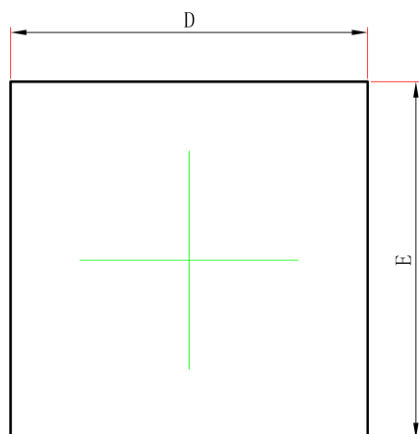
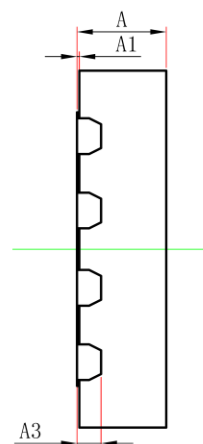
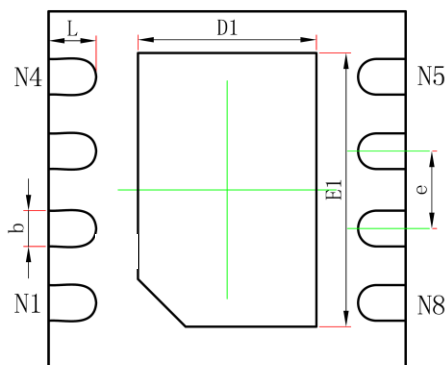
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	18			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 5	nA
On Characteristics ³						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.8	1	V
Drainsource onresistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$	3.6	4	5.3	m Ω
		$V_{GS} = 4V, I_D = 3A$	3.7	4.1	5.6	
		$V_{GS} = 3.8V, I_D = 3A$	3.8	4.2	5.8	
		$V_{GS} = 3.1V, I_D = 3A$	4.0	4.5	6.1	
		$V_{GS} = 2.5V, I_D = 3A$	4.3	5.2	7.7	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 0.1MHz$		2079		pF
Output Capacitance	C_{oss}			294		
Reverse Transfer Capacitance	C_{rss}			57		
Gate resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		2989		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3A$		27.2		nC
GateSource Charge	Q_{gs}			1.6		
GateDrain Charge	Q_{gd}			8.5		
Turnon delay time	$t_{d(on)}$	$V_{DD} = 10V, R_G = 3\Omega, V_{GS} = 5V,$ $R_L = 1.35\Omega$		4.5		ns
Turnon rise time	t_r			8.9		
Turnoff delay time	$t_{d(off)}$			84		
Turnoff fall time	t_f			24		
Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



DFN3×3-8L Package Information

TOP VIEW

SIDE VIEW

BOTTOM 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	2.900	3.100	0.114	0.122
E	2.900	3.100	0.114	0.122
D1	1.450	1.650	0.057	0.065
E1	2.250	2.550	0.089	0.100
b	0.250	0.350	0.010	0.014
e	0.650BSC		0.026BSC	
L	0.300	0.500	0.012	0.020