

20V Dual N-Channel MOSFET

Description

The PM8205 uses advanced Trench technology and designs to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for use in PWM, load switching and general purpose applications.

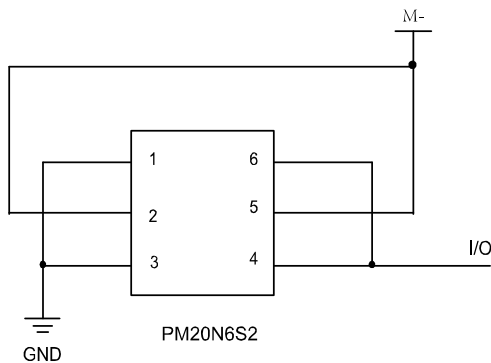
Features

- 20V MOSFET Technology
- Very low on-resistance
- Super fast switching speed
- Cost-effective

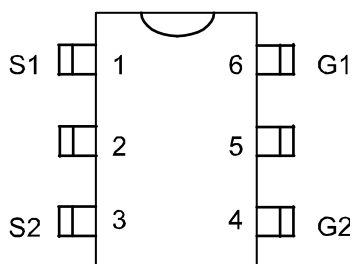
Applications

- Charge protection for lithium batteries (only used for lithium battery protector)
- D internal connection, not external use.

The circuit is not applicable as follows:



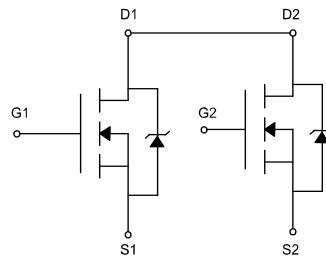
- D end elicited circuit, which can not be used
- Parallel G1/G2 do single MOS can not be used



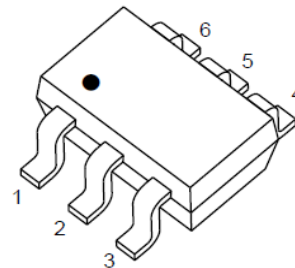
Top View

- D1/D2 Pin2 and Pin5 do not connect

Dimensions and Pin Configuration

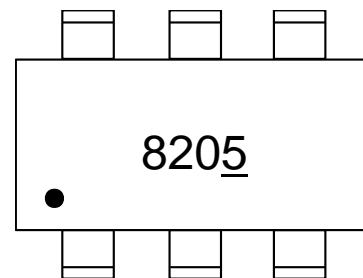


Circuit diagram



SOT-23-6

Marking Information



8205 = Device Marking Code

MOSFET Product Summary

V_{DSS}	$R_{DS(ON)}$ @ $V_{GS} = 4.5V$	$R_{DS(ON)}$ @ $V_{GS} = 2.5V$	I_D
20V	20m Ω	28.5m Ω	6A

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

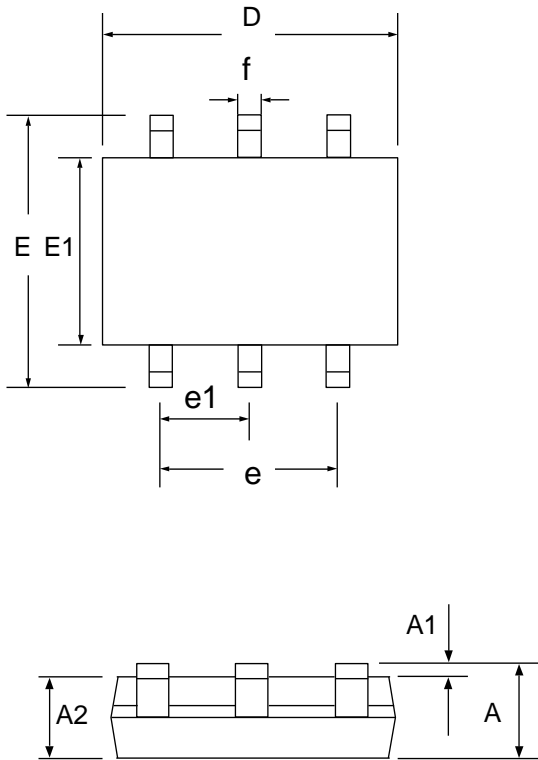
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±8	V
Continuous Drain Current (V _{GS} =4.5V, @T _a =25°C)	I _D	6	A
Continuous Drain Current (V _{GS} =4.5V, @T _a =70°C)	I _D	4.8	A
Pulsed Drain Current	I _{DM}	20	A
Power Dissipation (t≤10s, @T _a =25°C)	P _D	1.5	W
Thermal Resistance from Junction to Ambient(t≤10s)	R _{θJA}	83	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20	20.3	25	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =16V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±8V, V _{DS} = 0V			±1	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.65	1.0	V
Drain-source on-resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D = 6.0A		40	50	mΩ
		V _{GS} =3.8V, I _D = 3.0A		43	55	
		V _{GS} =2.5V, I _D = 3.0A		57	70	
Forward transconductance	g _{FS}	V _{DS} =5V, I _D =4.5A		10		S
Diode forward voltage	V _{SD}	I _S =1.0A, V _{GS} =0V, T _j =25°C		0.72	1.2	V
Dynamic characteristics						
Total gate charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =6A		8		nC
Gate-source charge	Q _{gs}			2.1		
Gate-drain charge	Q _{gd}			2.5		

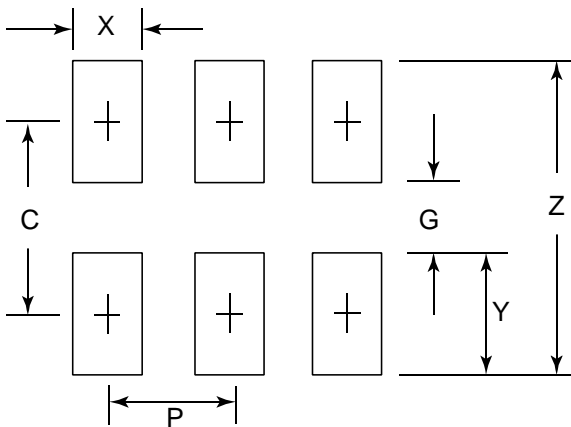
Input Capacitance	C_{iss}	$V_{DS}=8V, V_{GS}=0V, f=1MHz$		480		pF
Output Capacitance	C_{oss}			290		
Reverse Transfer Capacitance	C_{rss}			120		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{DD}=10V,$ $V_{GS}=4.5V,$ $I_D=1A$ $R_G=6\Omega$		8		ns
Turn-on rise time	t_r			12		
Turn-off delay time	$t_{d(off)}$			34		
Turn-off fall time	t_f			32		

SOT 23-6 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
D	2.80	2.90	3.10	0.110	0.114	0.122
E	2.80 BSC			0.110 BSC		
E1	1.50	1.60	1.75	0.060	0.063	0.069
e	1.90 BSC			0.075 BSC		
e1	0.95 BSC			0.037 BSC		
f	0.30		0.50	0.012		0.020

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141