JXP8205MRG

20V Dual N-Channel Enhancement Mode MOSFET

DESCRIPTION

The JXP8205MRG uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and high density cell Design for ultra low on-resistance. This device is suitable for use as a load switch or in PWM applications.

GENERAL FEATURES

- ✧ V_{DS} =20V，I_D =4A
  $R_{DS(ON)}$(Typ.)=28mΩ @V_{GS}=2.5V
  $R_{DS(ON)}$(Typ.)=22mΩ @V_{GS}=4.5V
- ✧ High power and current handing capability
- ✧ Lead free product is acquired
- ✧ Surface mount package

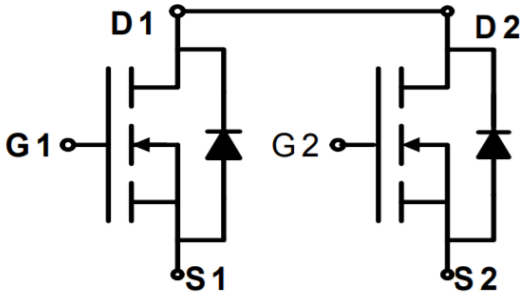
APPLICATION

- ✧ PWM applications
- ✧ Load switch

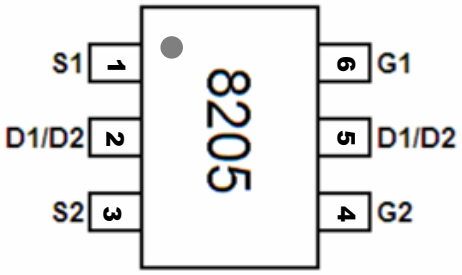
PACKAGE

- ✧ SOT23-6L

SCHEMATIC DIAGRAM



PIN ASSIGNMENT



SOT23-6L
(Topview)

ORDERING INFORMATION

Part Number	Storage Temperature	Package	Marking	Devices Per Reel
JXP8205MRG	-55°C to +150°C	SOT23-6L	8205	3000

ABSOLUTE MAXIMUM RATINGS

(T_A=25℃ unless otherwise noted)

parameter		symbol	limit	unit
Drain-source voltage		V_{DS}	20	V
Gate-source voltage		V_{GS}	±12	V
Continuous drain current (T_J = 150 °C) [a]	T_A=25°C	I_D	4.0	A
	T_A=70°C		3.0	
Pulsed drain current [b]		I_{DM}	20	
Continuous source current (diode conduction) [a]		I_S	1.2	
Power dissipation [a]	T_A=25°C	P_D	1.4	W
	T_A=70°C		0.9	
Operating junction and storage temperature range		T_J, T_{stg}	-55—150	℃

THERMAL CHARACTERISTICS

Parameter		Symbol	Typ	Max	Unit
Maximum junction-to-ambient [a]	≤ 10 s	$R_{\theta JA}$	70	90	℃/W
	Steady-State		100	125	
Maximum junction-to-foot	Steady-State	$R_{\theta JC}$	63	80	

Notes

a. Surface mounted on 1" x 1" FR4 board

b. Pulse width limited by maximum junction temperature

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	20	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=20V, V_{GS}=0V	-	-	1	μA
Gate-body leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±12V	-	-	±100	nA
ON Characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.45	0.65	1.2	V
Drain-source on-state resistance [a]	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=4.0A	-	22	26	mΩ
		V_{GS}=2.5V, I_D=3.0A		28	35	
Forward transconductance [a]	gfs	V_{DS}=5V, I_D=4A	-	10	-	S
Dynamic Characteristics [b]						
Input capacitance	C_{ISS}	V_{DS}=10V ,V_{GS}=0V f=1.0MHz	-	600	-	pF
Output capacitance	C_{OSS}		-	330	-	
Reverse transfer capacitance	C_{RSS}		-	140	-	
Switching Characteristics						
Turn-on delay time	$t_{D(ON)}$	V_{DD}=10V R_L=3 ohm V_{GEN}=4.5V R_{GEN}=6ohm	-	18	-	ns
Rise time	tr		-	5	-	
Turn-off delay time	$t_{D(OFF)}$		-	43	-	
Fall time	tf		-	20	-	
Total gate charge	Qg	V_{DS}=10V I_D=4A V_{GS}=4.5V	-	11	-	nC
Gate-source charge	Qgs		-	2.3	-	
Gate-drain charge	Qgd		-	2.5	-	
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode forward voltage	V_{SD}	V_{GS}=0V,Is=2A	-	0.76	1.16	V

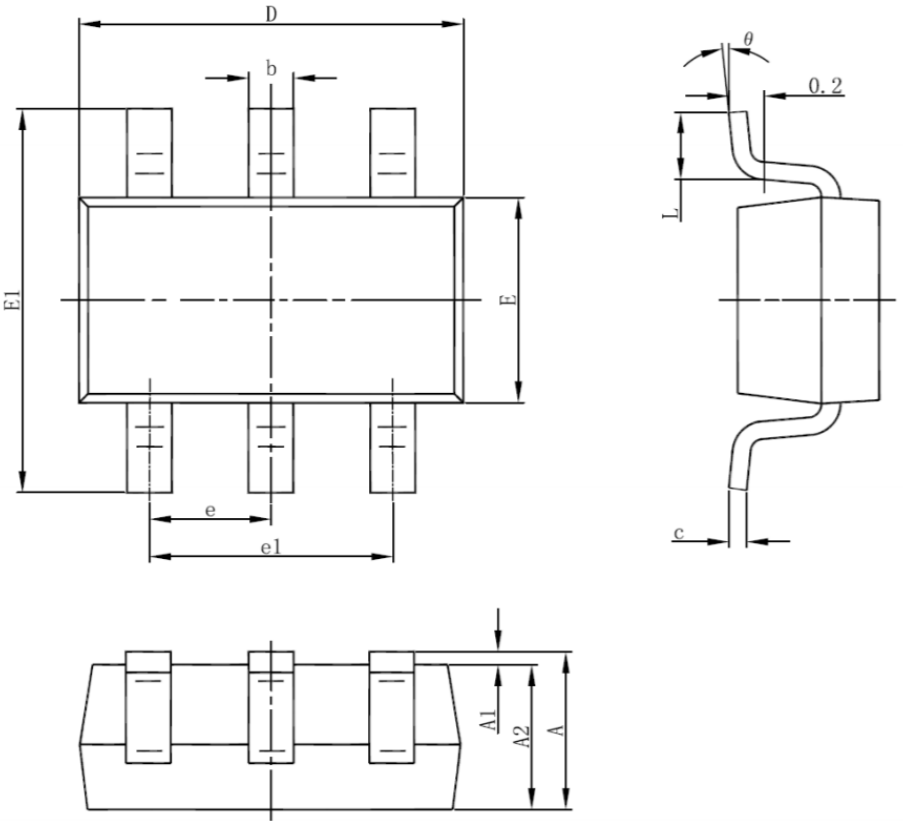
Notes

a. Pulse test: Pulse width ≤ 300 μs, duty cycle ≤ 2 %

b. Guaranteed by design, not subject to production testing

PACKAGE INFORMATION

- **SOT23-6L**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°