

## N-Channel Enhancement Mode Power MOSFET

## Description

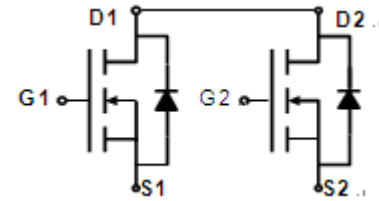
The YXD8205QE1 uses advanced trench technology to provide excellent  $R_{DS(ON)}$ , low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

## General Features

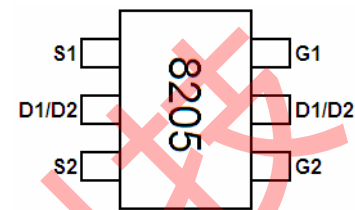
- $V_{DS} = 20V, I_D = 4A$
- $R_{DS(ON)} < 32m\Omega @ V_{GS}=2.5V$
- $R_{DS(ON)} < 24m\Omega @ V_{GS}=4.5V$
- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

## Application

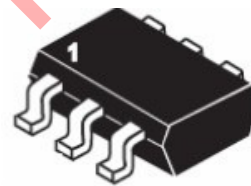
- Battery protection
- Load switch
- Power management



Schematic diagram



Marking and pin Assignment



SOT23-6L top view

Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise noted)

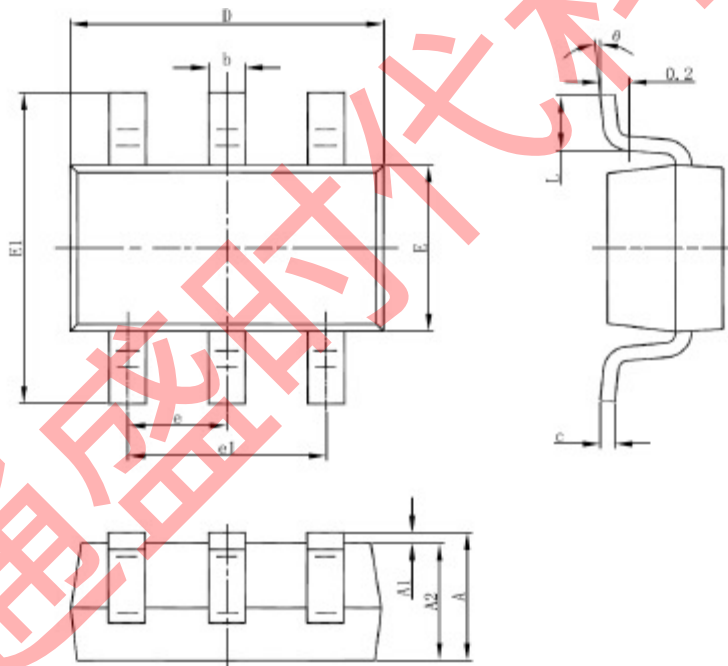
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V
Drain Current-Continuous	$I_D$	4	A
Drain Current-Pulsed	$I_{DM}$	25	A
Maximum Power Dissipation	$P_D$	1.25	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 To 150	$^\circ\text{C}$

Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	22	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.7	1.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=6A$	-	19.5	24	$m\Omega$
		$V_{GS}=2.5V, I_D=5.2A$	-	25	32	$m\Omega$
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=2A$	-	0.8	1.2	V
Diode Forward Current	$I_S$		-	-	2	A

Package mechanical data

Mechanical data of 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
theta	0°	8°	0°	8°