

• General Description

The ZM8205FS combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. Two N Channel MOSFET inside for dual DIE implication .

• Features

- Advance high cell density Trench technology
- Low $R_{DS(ON)}$ to minimize conductive loss
- Low Gate Charge for fast switching
- Dual DIE in one package

• Application

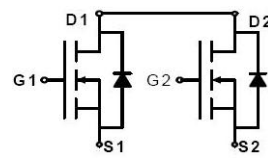
- Power Management in Notebook Computer,
- Portable Equipment and Battery Powered Systems

• Ordering Information:

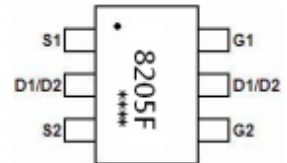
Part NO.	ZM8205FS
Marking	ZM8205F
Packing Information	REEL TAPE
Basic ordering unit (pcs)	3000

• Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	19	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	$I_{D@TC=25^\circ\text{C}}$	7	A
	$I_{D@TC=75^\circ\text{C}}$	5.3	A
	$I_{D@TC=100^\circ\text{C}}$	4.4	A
Pulsed Drain Current ^①	I_{DM}	30	A
Total Power Dissipation	$P_D@TC=25^\circ\text{C}$	1.14	W
Total Power Dissipation	$P_D@TA=25^\circ\text{C}$	0.69	W
Operating Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$

• Product Summary


$V_{DS} = 19\text{V}$
 $R_{DS(ON)} = 14\text{m}\Omega$
 $I_D = 7\text{A}$



SOT-23-6



•Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R _{thJC}	-	-	110	° C/W
Thermal resistance, junction - ambient	R _{thJA}	-	-	150	° C/W
Soldering temperature, wavesoldering for 10s	T _{sold}	-	-	265	° C

•Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	19			V
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =250uA	0.5		1.2	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =19V, V _{GS} =0V			1.0	uA
Gate- Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±100	nA
Static Drain-source On Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =6A		14	18	mΩ
		V _{GS} =2.5V, I _D =5.2A		17	21	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =4A		5		s
Source-drain voltage	V _{SD}	I _S =6A			1.28	V

•Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	C _{iss}	f = 1MHz	-	1035	-	pF
Output capacitance	C _{oss}		-	320	-	
Reverse transfer capacitance	C _{rss}		-	150	-	

•Switching characteristics(T_a = 25°C)

Turn-on Delay Time	t _{d(on)}	V _{DS} =10V V _{GS} =5V R _D =10Ω I _D =1A R _G =6Ω		30		ns
Rise Time	t _r			70		ns
Turn-off Delay Time	t _{d(off)}			40		ns
Fall Time	t _f			65		ns

Note: ① Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2% ;

Fig.1 Power Dissipation

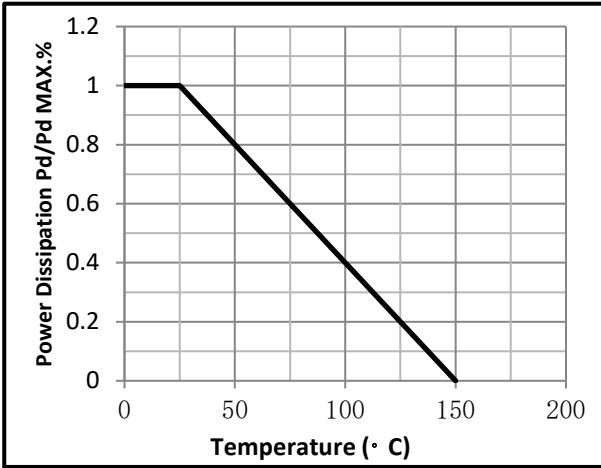


Fig.2 Typical output Characteristics

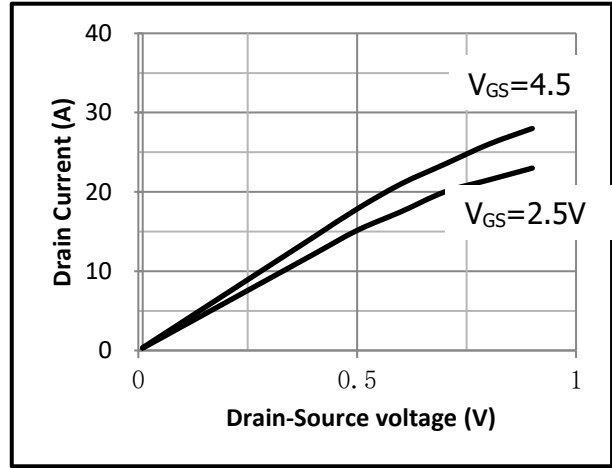


Fig.3 Threshold Voltage V.S Junction Temperature

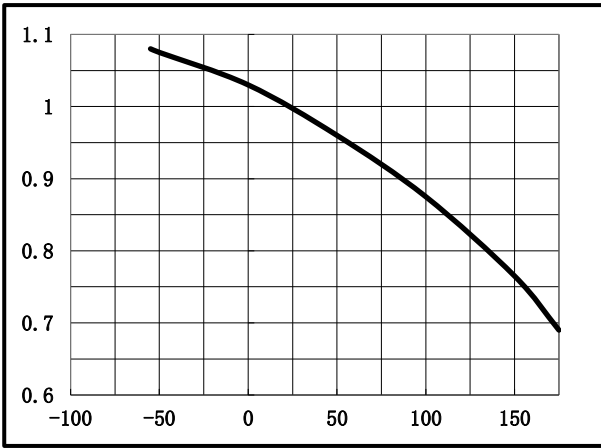


Fig.4 Resistance V.S Drain Current

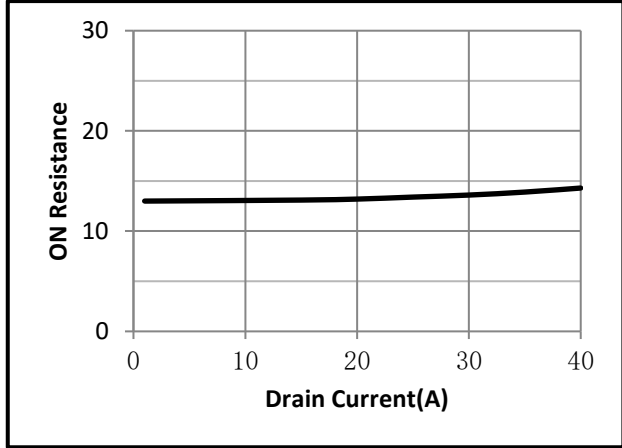


Fig.5 On-Resistance VS Gate Source Voltage

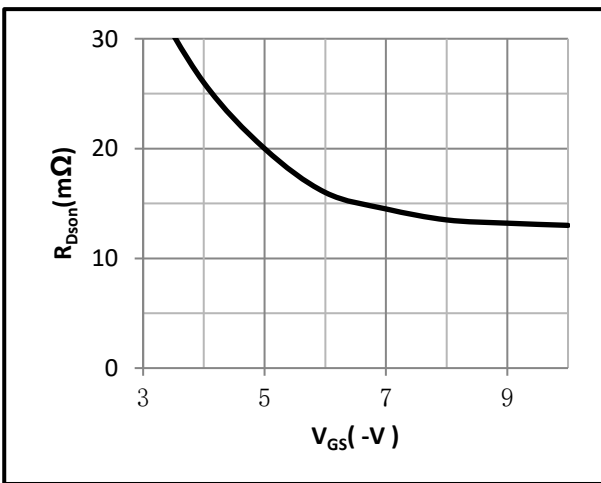


Fig.6 On-Resistance V.S Junction Temperature

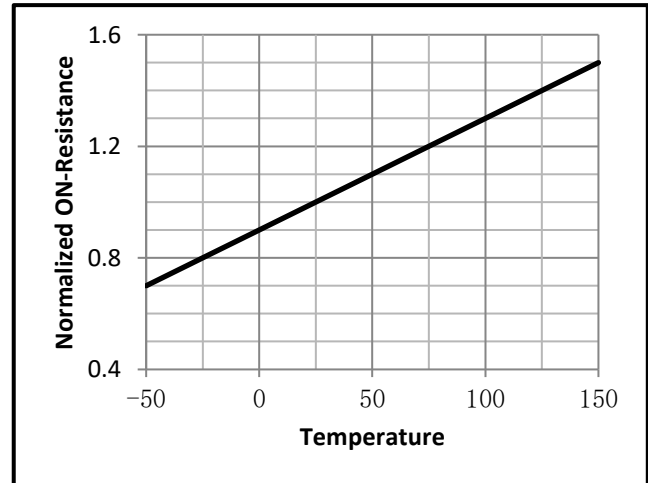


Fig.7 Switching Time Measurement Circuit

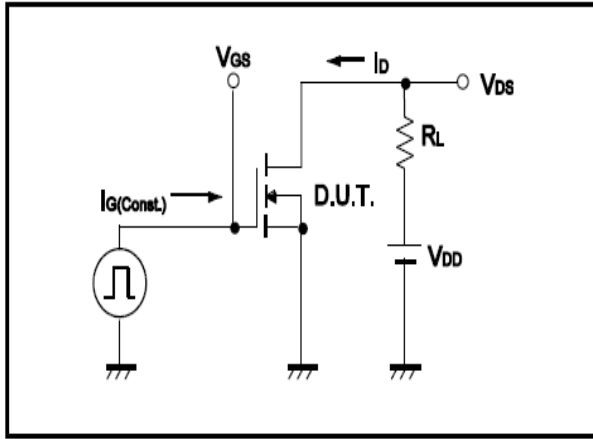


Fig.8 Gate Charge Waveform

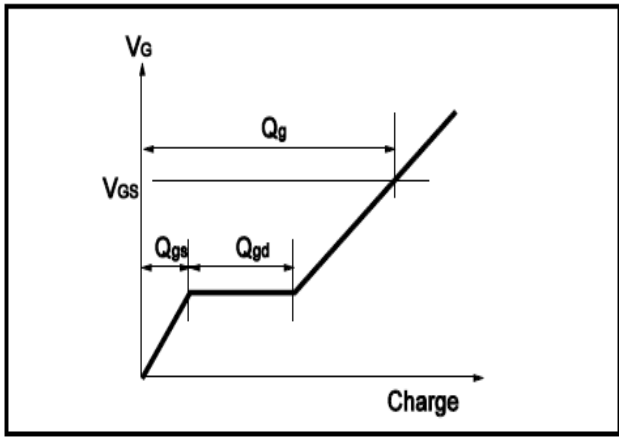


Fig.9 Switching Time Measurement Circuit

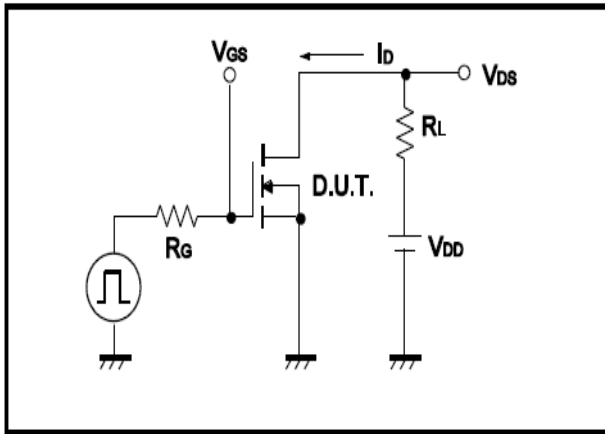


Fig.10 Gate Charge Waveform

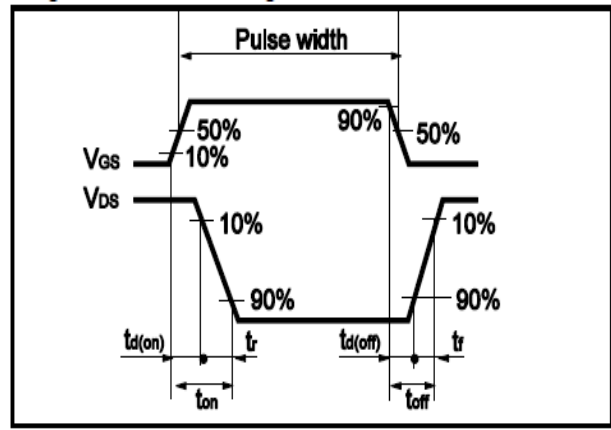


Fig.11 Avalanche Measurement Circuit

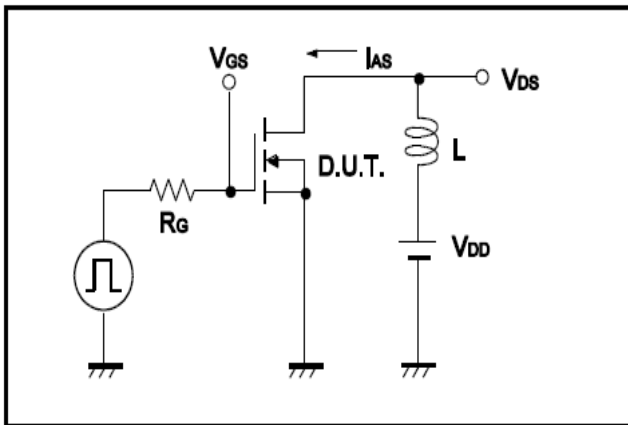
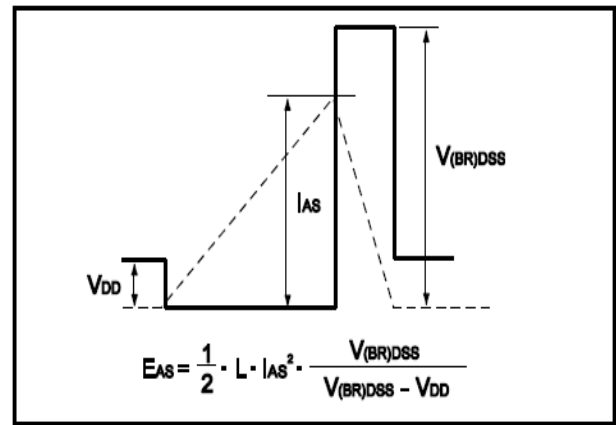
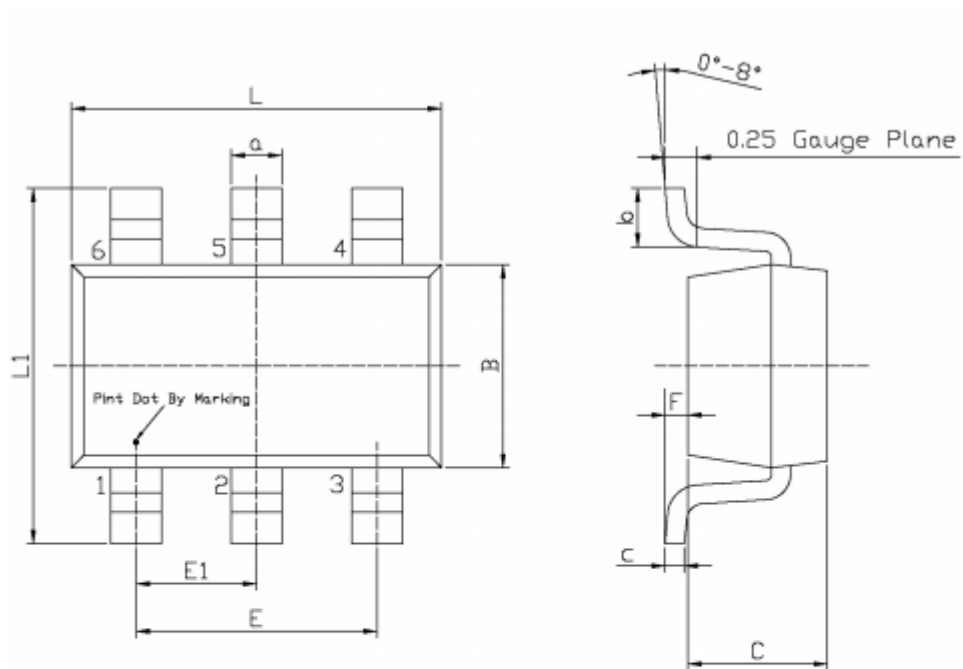


Fig.12 Avalanche Waveform



•Dimensions(SOT23-6)

Unit: mm



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15