ADV

ADM7ND02

Common-Drain Dual N-Channel Enhancement Mode Field Effect Transistor

TSSOP-8

D1	1	8	D2
S1	2	7	S2
S1	3	6	S2
G1	4	5	G2
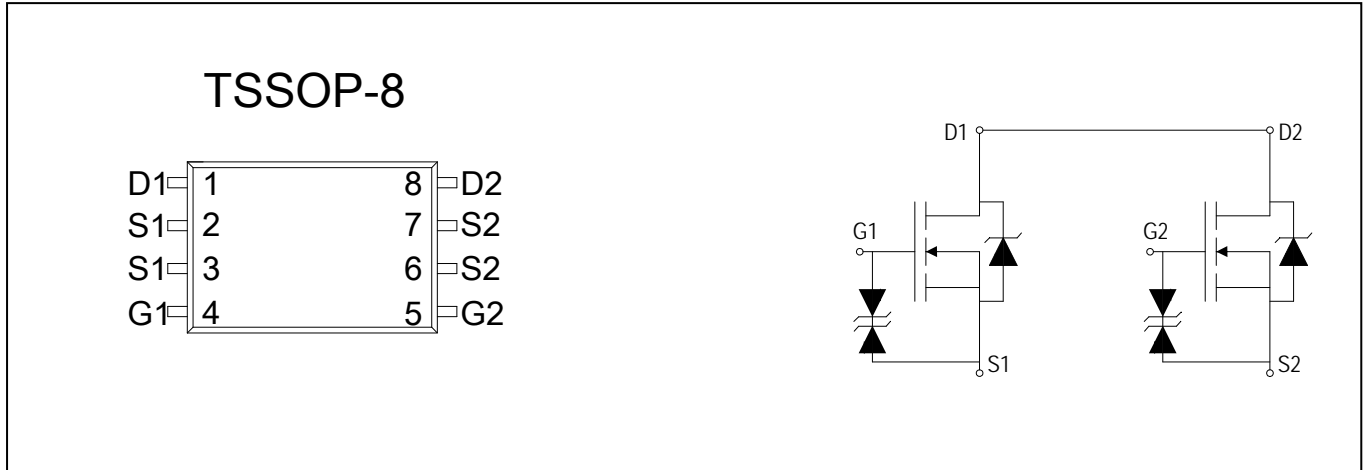
PRODUCT SUMMARY

V_{DSS}	I_D	$R_{DS(ON)}$ (mΩ)
20V	7A	21mΩ

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

Symbol	Parameter		Ratings	Unit
Common Ratings				
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		$\pm$12	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_S	Diode Continuous Forward Current（3）	T_C=25°C	2.4	A
Mounted on Large Heat Sink				
I_{DM}	300µs Pulse Drain Current Tested(1)	T_C=25°C	25	A
I_D	Continuous Drain Current	T_C=25°C	7	A
		T_C=70°C	5.5	A
P_D	Maximum Power Dissipation	T_C=25°C	1.5	W
		T_C=70°C	0.96	W

1. Pulse width limited by maximum junction temperature.

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
R_{thJA}	Thermal resistance junction-ambient max（3）	83	°C/W

Electrical Characteristics (T$_A$=25°C Unless Otherwise Noted)

| Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
On/off Characteristics						
BV$_{DSS}$	Drain-Source Breakdown Voltage	V$_{GS}$=0V, I$_{DS}$=250uA	20	--	--	V
I$_{DSS}$	Zero Gate Voltage Drain Current	V$_{DS}$=20V, V$_{GS}$=0V	--	--	1	uA
		V$_{DS}$=20V, V$_{GS}$=0V T$_J$=55°C	--	--	5	
V$_{GS(th)}$	Gate Threshold Voltage	V$_{DS}$=V$_{GS}$, I$_{DS}$=250uA	0.6	0.8	1	V
I$_{GSS}$	Gate Leakage Current	V$_{GS}$=±10V, V$_{DS}$=0V	--	--	±10	uA
R$_{DS(ON)}$	Drain-SourceOn-stateResistance(2)	V$_{GS}$= 10V, I$_{DS}$=7A	--	16.5	21.0	mΩ
R$_{DS(ON)}$	Drain-SourceOn-stateResistance(2)	V$_{GS}$= 4.5V, I$_{DS}$=6.5A	--	20.0	24.0	mΩ
R$_{DS(ON)}$	Drain-SourceOn-stateResistance(2)	V$_{GS}$= 2.5V, I$_{DS}$=5.5A	--	26.0	32.0	mΩ
Dynamic Characteristics						
C$_{iss}$	Input Capacitance	V$_{GS}$=0V,	--	686.3	--	pF
C$_{oss}$	Output Capacitance	V$_{DS}$= 8V,	--	97.2	--	
C$_{rss}$	Reverse Transfer Capacitance	Frequency=200KHz	--	94	--	
Switching Characteristics						
t$_{d(ON)}$	Turn-on Delay Time(1)	V$_{DD}$=15V,	--	385.9	--	ns
t$_r$	Turn-on Rise Time(1)	I$_D$= 1A, V$_{GS}$= 4.5V,	--	899.9	--	
t$_{d(OFF)}$	Turn-off Delay Time(1)	R$_{GEN}$=6 Ω	--	4575.0	--	
t$_f$	Turn-off Fall Time(1)		--	2554.0	--	
Q$_g$	Total Gate Charge(1)	V$_{DS}$=10V, V$_{GS}$= 4.5V,	--	6.1	12	nC
Q$_{gs}$	Gate-Source Charge(1)	I$_{DS}$=6.0A	--	2.0	--	
Q$_{gd}$	Gate-Drain Charge(1)		--	1.2	--	
Diode Characteristics						
V$_{SD}$	Diode Forward Voltage(2)	I$_{SD}$ = 1.7A, V$_{GS}$ = 0	--	--	1.2	V

NOTES:

1. Independent of operating temperature.

2. Pulse Test : Pulse width ⩽ 300μs, Duty cycle ⩽ 2%

3. Surface Mounted on FR4 Board, t < 10 sec.1-in^2 2oz Cu PCB board.

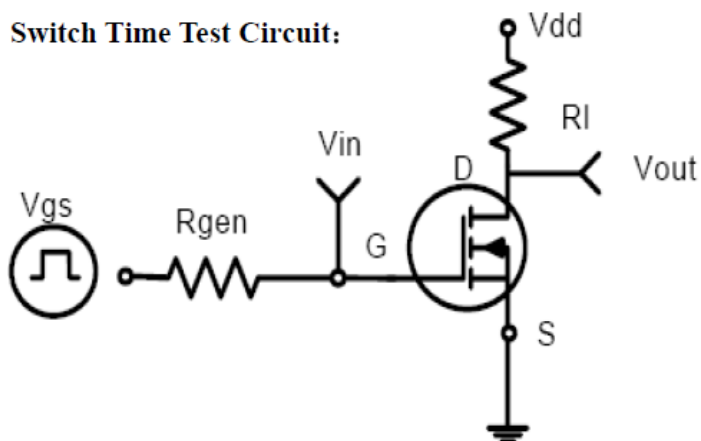**Typical Performance Characteristics**
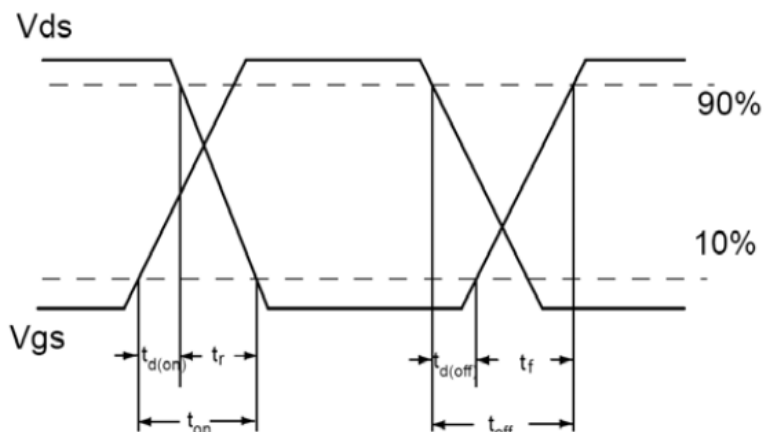**Test circuits and Waveforms**

EAS test circuits:
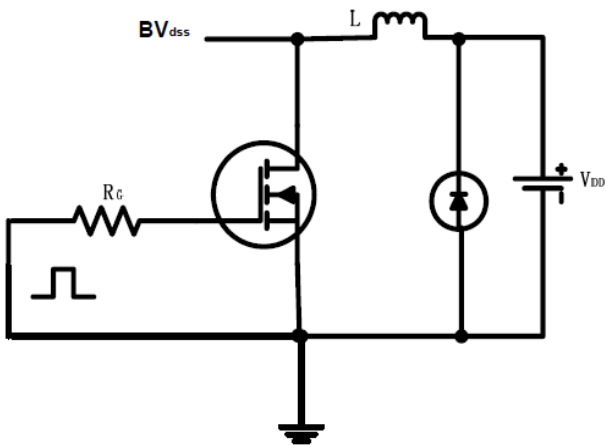
Gate charge test circuit:
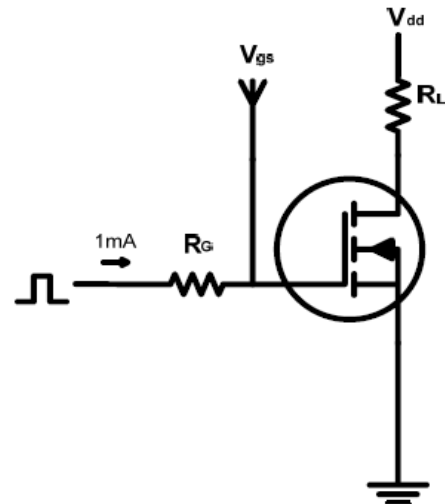
Switch Time Test Circuit:

Switch Waveforms:

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