SHANGHAI SINO-IC
MICROELECTRONICS CO., LTD.

Feb 2008

SEBSS84

P-channel enhancement mode vertical D-MOS transistor

Revision:A

Features

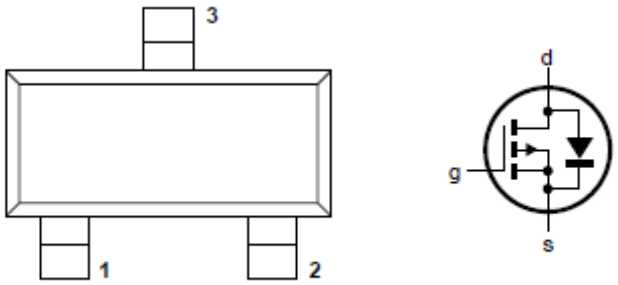
- Low threshold voltage
- Direct interface to C-MOS, TTL, etc.
- High-speed switching
- No secondary breakdown.

Applications

- Line current interrupter in telephone sets
- Relay, high speed and line transformer drivers.

Construction

- Silicon epitaxial planer



Top view MAM188

Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	I_D	-130	mA
Maximum Power Dissipation	P_D	250	mW
Operating Junction Temperature Range	T_J	-55 to 150	°C
S torage Temperature Range	T_{STG}		

Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=-10A, V_{GS}=0 V	-20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-40V, V_{GS}=0 V	-	-	-100	nA
		V_{DS}=-50V, V_{GS}=0 V	-	-	-10	
		V_{DS}=-50V, V_{GS}=0 V; T_j = 125 °C	-	-	-6	
I_{GSS}	Gate-Body leakage	V_{DS}=0 V, V_{GS}=±20V			±10	nA
ON CHARACTERISTICS						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} I_D=-1mA	-0.8	-	-2	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-130mA	-	-	10	mΩ
g_{FS}	Forward Transconductance	V_{DS}=-25V, I_D=-130mA	50	-	-	S
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-25V，f=1MHz	-	25	45	pF
C_{oss}	Output Capacitance		-	15	25	pF
C_{rss}	Reverse Transfer Capacitance		-	3.5	12	pF
SWITCHING PARAMETERS						
$t_{d(on)}$	Turn-On DelayTime	V_{GS}=0 to 10V,V_{DD}=-40V	-	3	-	ns
$t_{d(off)}$	Turn-Off DelayTime	，ID=−200mA	-	7	-	

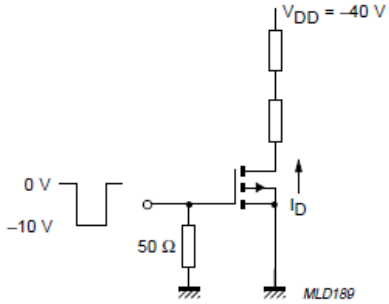


Fig.2 Switching time test circuit.

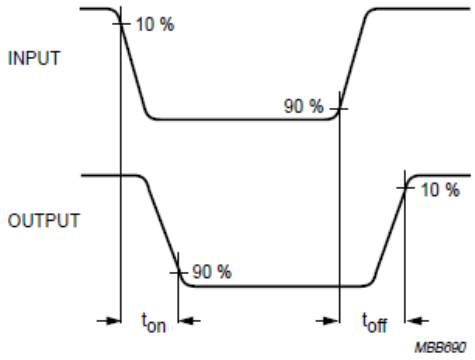


Fig.3 Input and output waveforms.

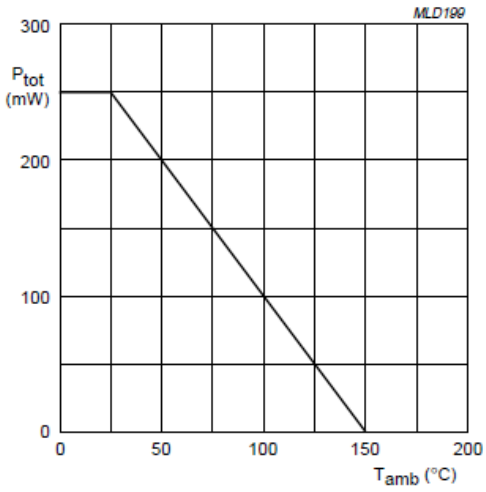
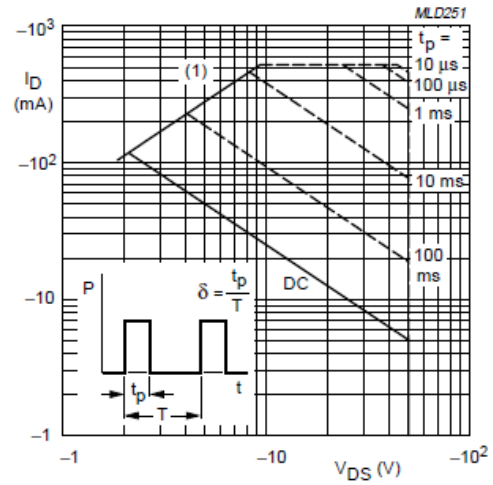
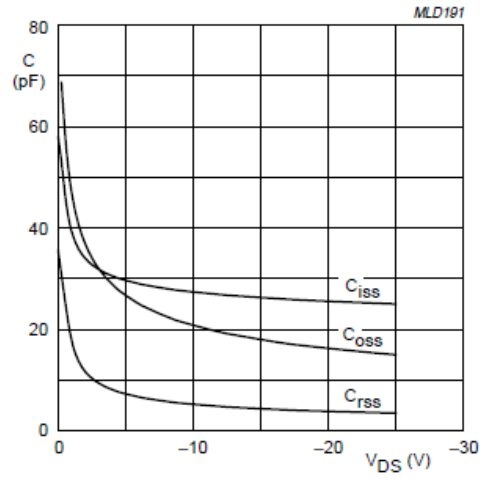


Fig.4 Power derating curve.



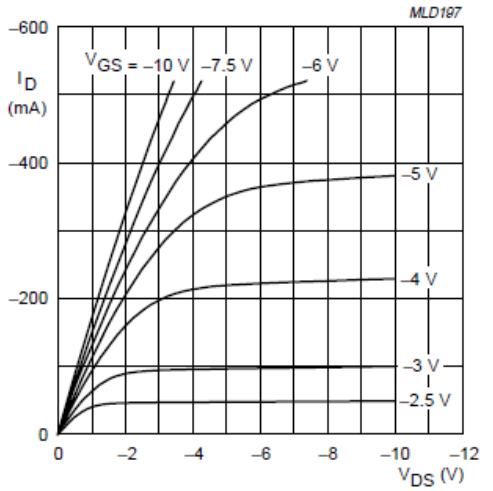
δ = 0.01.
T_{amb} = 25 °C.
(1) R_{DSon} limitation.

Fig.5 DC SOAR.



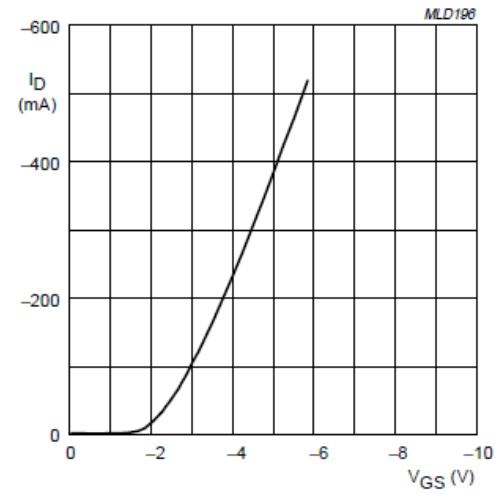
V_{GS} = 0; T_j = 25 °C; f = 1 MHz.

Fig.6 Capacitance as a function of drain source voltage; typical values.



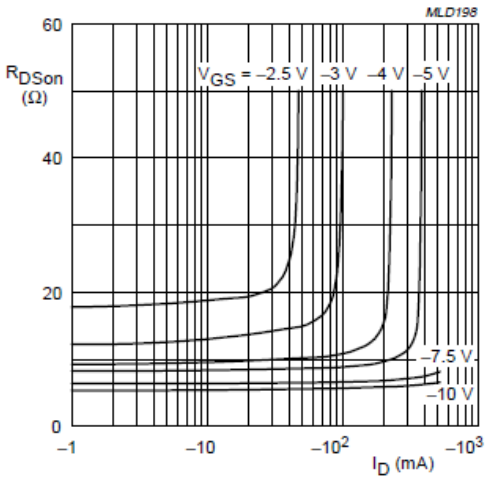
T_j = 25 °C.

Fig.7 Typical output characteristics.



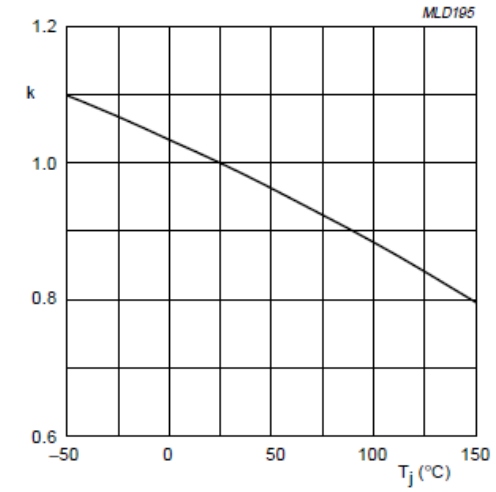
V_{DS} = −10 V; T_j = 25 °C.

Fig.8 Typical transfer characteristics.



T_j = 25 °C.

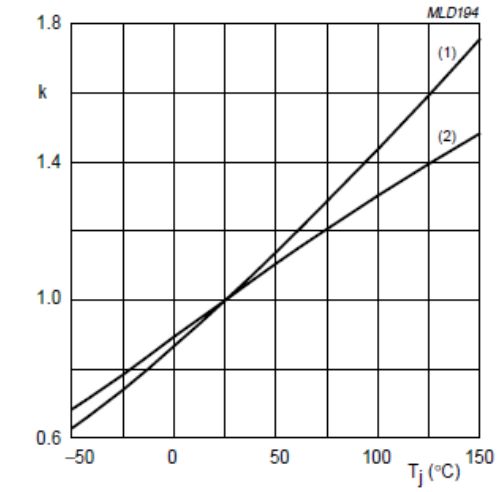
Fig.9 Drain-source on-state resistance as a function of drain current; typical values.



$$k = \frac{V_{GSth} \text{ at } T_j}{V_{GSth} \text{ at } 25\,°C}$$

I_D = −1 mA; V_{DS} = V_{GS}.

Fig.10 Temperature coefficient of gate-source threshold voltage.

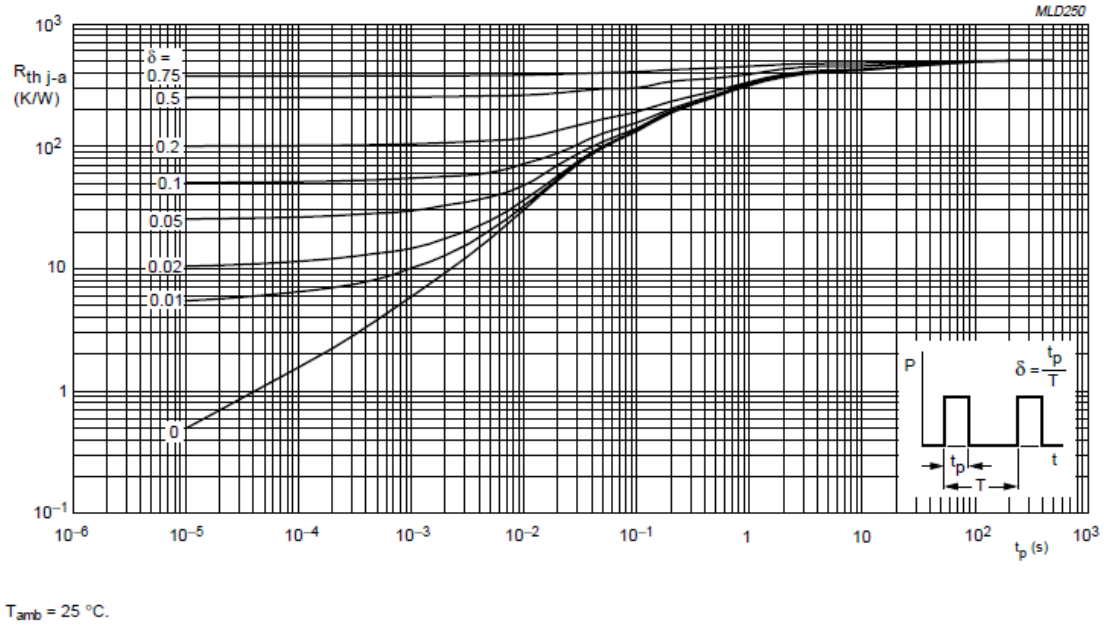


$$k = \frac{R_{DSon} \text{ at } T_j}{R_{DSon} \text{ at } 25\,°C}$$

(1) I_D = −130 mA; V_{GS} = −10 V.

(2) I_D = −20 mA; V_{GS} = −2.4 V.

Fig.11 Temperature coefficient of drain-source on-state resistance.



T_{amb} = 25 °C.

Fig.12 Thermal resistance from junction to ambient as a function of pulse time; typical values.

SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

Add: Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong, Shanghai 201203, China
Phone: +86-21-33932402 33932403 33932405 33933508 33933608
Fax: +86-21-33932401
Email: webmaster@sino-ic.com
Website: http://www.sino-ic.com