



Micro Commercial Components



Micro Commercial Components  
 20736 Marilla Street Chatsworth  
 CA 91311  
 Phone: (818) 701-4933  
 Fax: (818) 701-4939

# MCS8804

## Features

- Advanced trench MOSFET process technology
- Excellent  $R_{DS(ON)}$  and low gate charge
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: S8804

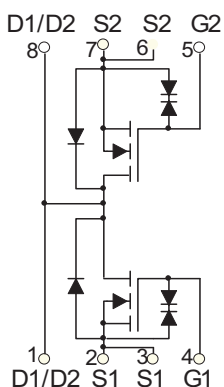
## Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
$V_{DS}$	Drain-source Voltage	20	V
$I_D$	Drain Current-Continuous	8	A
$I_{DM}$	Pulsed Drain Current (note1)	30	A
$V_{GS}$	Gate-source Voltage	$\pm 12$	V
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	125	$^{\circ}C/W$
$T_J$	Operating Junction Temperature	-55 to +150	$^{\circ}C$
$T_{STG}$	Storage Temperature	-55 to +150	$^{\circ}C$

### Notes:

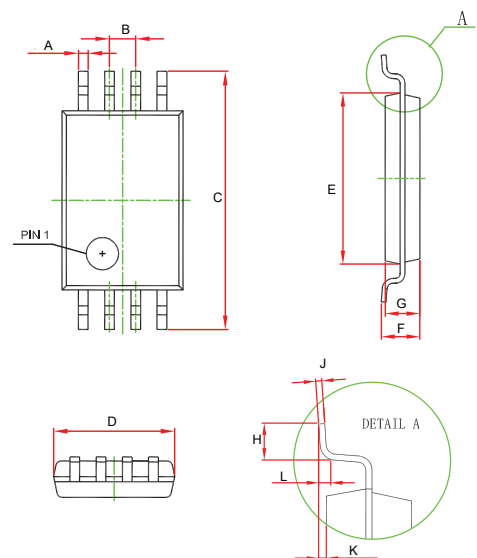
1. Repetitive Rating: Pulse width limited by junction temperature.

## Equivalent Circuit



## Dual N-Channel MOSFET

## TSSOP-8



DIM	Dimensions				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.007	.012	0.190	0.300	
B	0.026BSC.		0.650BSC.		
C	0.246	0.258	6.250	6.550	
D	0.114	0.122	2.900	3.100	
E	0.169	0.177	4.300	4.500	
F	---	0.047	---	1.200	
G	0.031	0.039	0.800	1.000	
H	0.020	0.028	0.500	0.700	
J	0.004	0.008	0.090	0.200	
K	0.002	0.006	0.050	0.150	
L	0.010TYP.		0.250TYP.		

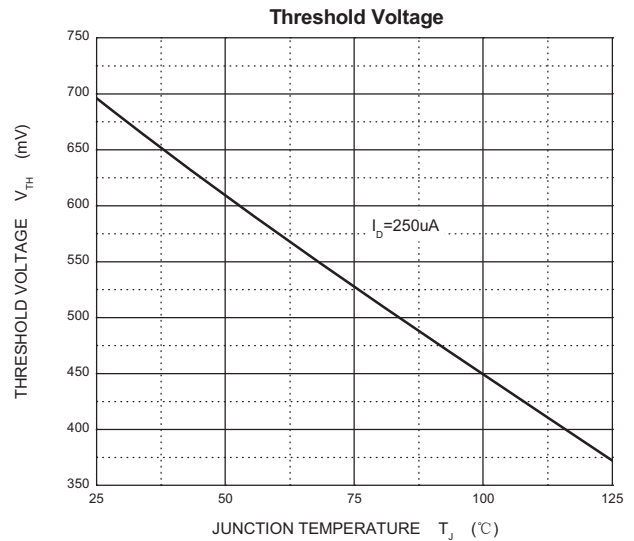
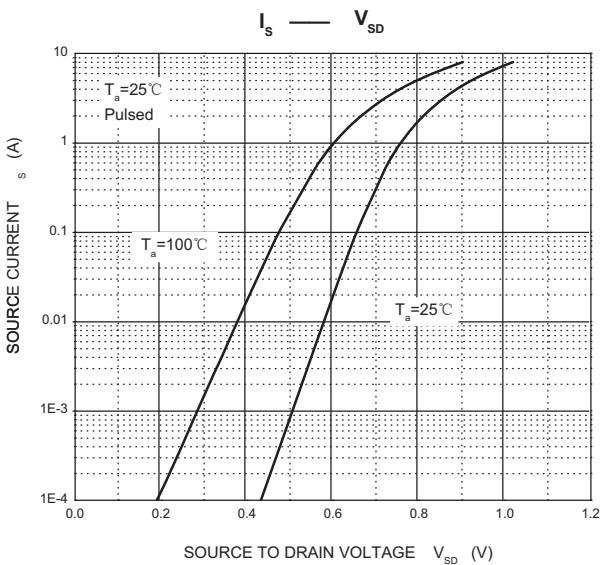
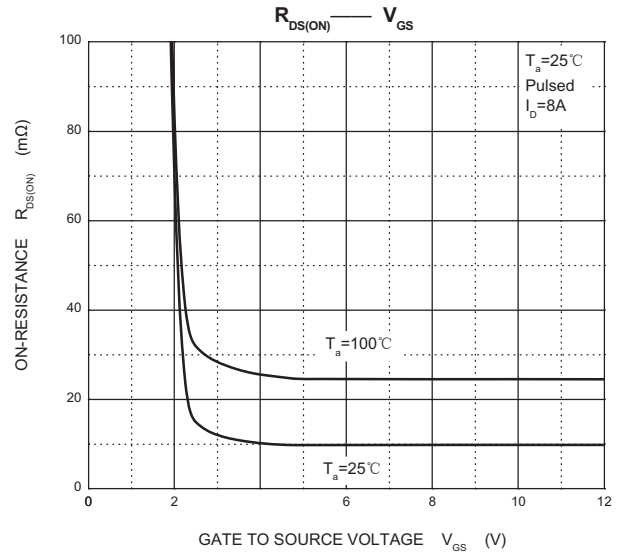
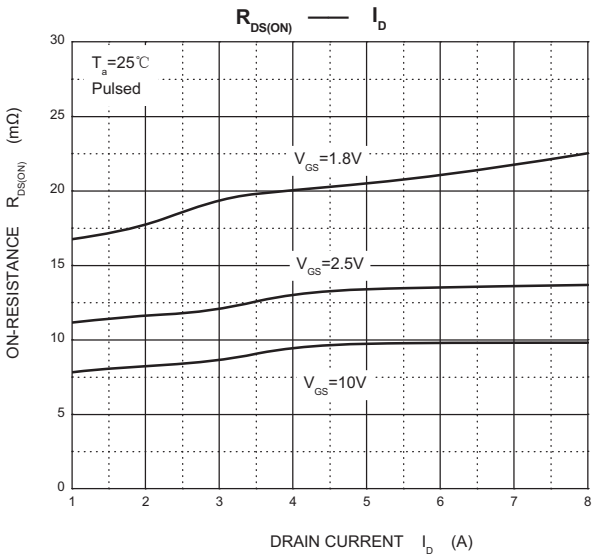
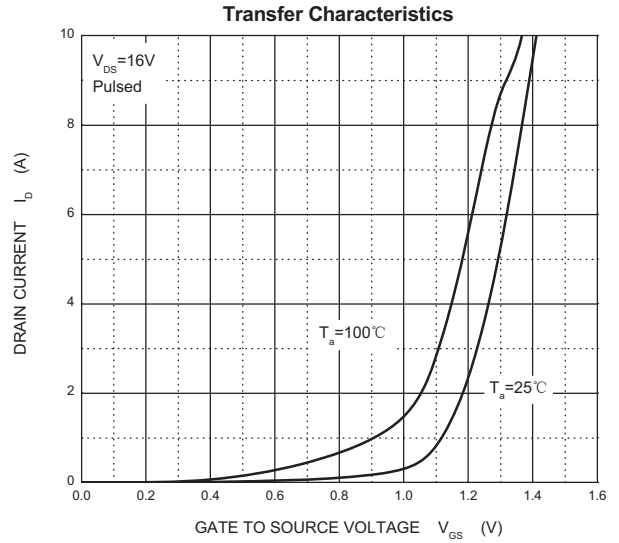
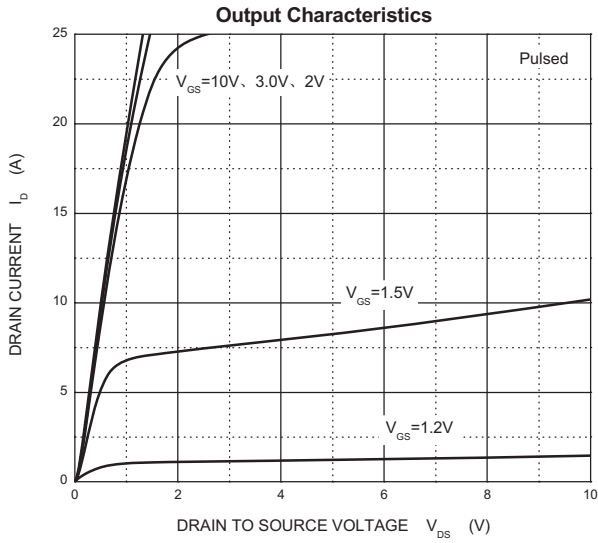
**ELECTRICAL CHARACTERISTICS( $T_a=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			10	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate threshold voltage (note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.7	1	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 8A$		9.8	13	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$		10.5	14	m $\Omega$
		$V_{GS} = 3.8V, I_D = 5A$		11.1	15.5	m $\Omega$
		$V_{GS} = 2.5V, I_D = 4A$		13.3	19	m $\Omega$
		$V_{GS} = 1.8V, I_D = 3A$		19.6	27	m $\Omega$
Forward tranconductance (note 1)	$g_{FS}$	$V_{DS} = 5V, I_D = 8A$		17		S
Diode forward voltage(note 1)	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1	V
<b>DYNAMIC PARAMETERS (note 2)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		1800		pF
Output Capacitance	$C_{oss}$			230		pF
Reverse Transfer Capacitance	$C_{rss}$			200		pF
Total gate charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 8A$		17.9		nC
Gate-source charge	$Q_{gs}$			1.5		nC
Gate-drain charge	$Q_{gd}$			4.7		nC
<b>SWITCHING PARAMETERS(note 2)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 10V,$ $R_L = 1.2\Omega, R_{GEN} = 3\Omega$		2.5		ns
Turn-on rise time	$t_r$			7.2		ns
Turn-off delay time	$t_{d(off)}$			49		ns
Turn-off fall time	$t_f$			10.8		ns

**Notes :**

1. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 0.5\%$ .
2. Guaranteed by design, not subject to production testing.

## Typical Characteristics





Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel:5Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

\*\*\*IMPORTANT NOTICE\*\*\*

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . Micro Commercial Components Corp . does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold Micro Commercial Components Corp . and all the companies whose products are represented on our website, harmless against all damages.

\*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

\*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.