



Micro Commercial Components



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

MCU12P10

P-Channel Enhancement Mode Field Effect Transistor

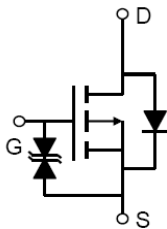
Features

- Advanced trench process technology
- High density cell design for ultra low On-Resistance
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Reliable and rugged

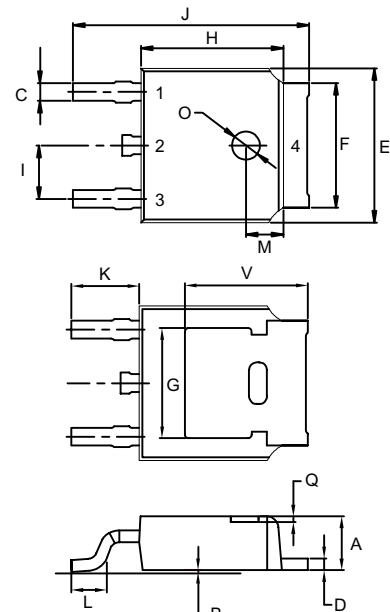
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V _{DS}	Drain-source Voltage	-100	V
I _D	Drain Current-Continuous	-12	A
I _D	Drain Current-Continuous(TC=100°C)	-9.2	A
V _{GS}	Gate-source Voltage	±20	V
I _{DM}	Pulsed Drain Current	-30	A
R _{θJC}	Thermal Resistance Junction to Case(Note1)	3.13	°C/W
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C
P _D	Maximum Power Dissipation	40	W
E _{AS}	Single pulse avalanche energy (Note 4)	110	mJ

Internal Block Diagram



DPAK



- 1.GATE
- 2.DRAIN
- 3.SOURCE

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.208REF		5.30REF		

Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250μA	-100	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-100V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±10	μA
On Characteristics (Note 2)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-	-1.	-	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-8A	-	170	200	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-15V, I _D =-5A	12	-	-	S
Dynamic Characteristics (Note 3)						
Input Capacitance	C _{iss}	V _{DS} =-25V, V _{GS} =0V, F=1.0MHz	-	1055	-	PF
Output Capacitance	C _{oss}		-	65	-	PF
Reverse Transfer Capacitance	C _{rss}		-	41	-	PF
Switching Characteristics (Note 3)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-50V, I _D =-10A V _{GS} =-10V, R _{GEN} =9.1Ω	-	14	-	nS
Turn-on Rise Time	t _r		-	18	-	nS
Turn-Off Delay Time	t _{d(off)}		-	50	-	nS
Turn-Off Fall Time	t _f		-	18	-	nS
Total Gate Charge	Q _g	V _{DS} =-50V, I _D =-10A, V _{GS} =-10V	-	25	-	nS
Gate-Source Charge	Q _{gs}		-	5	-	nS
Gate-Drain Charge	Q _{gd}		-	7	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 2)	V _{SD}	V _{GS} =0V, I _S =-10A	-	-	-1.2	V
Diode Forward Current (Note 1)	I _S	-	-	-	-13	A
Reverse Recovery Time	t _{rr}	T _J = 25°C, I _F = -10A di/dt = 100A/μs (Note 3)	-	35	-	nC
Reverse Recovery Charge	Q _{rr}		-	46	-	nC
Forward Turn-On Time	t _{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Notes:

1. Surface Mounted on FR4 Board, t ≤ 10 sec.
2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
3. Guaranteed by design, not subject to production
4. E_{AS} condition: T_J=25°C, V_{DD}=-50V, V_G=-10V, L=0.5mH, R_g=25Ω

Typical Characteristics

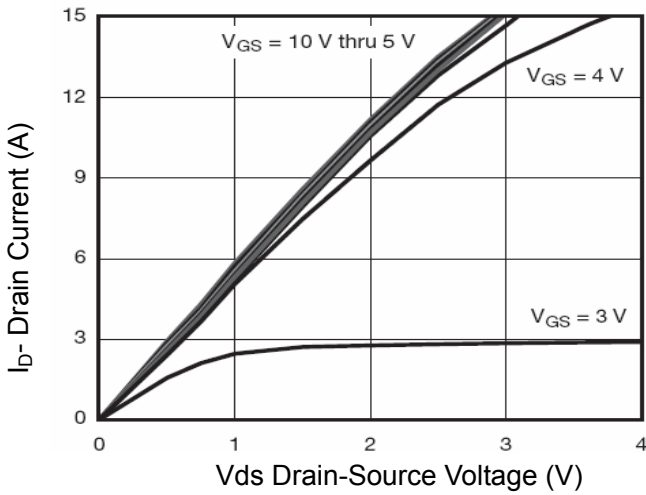


Figure 1 Output Characteristics

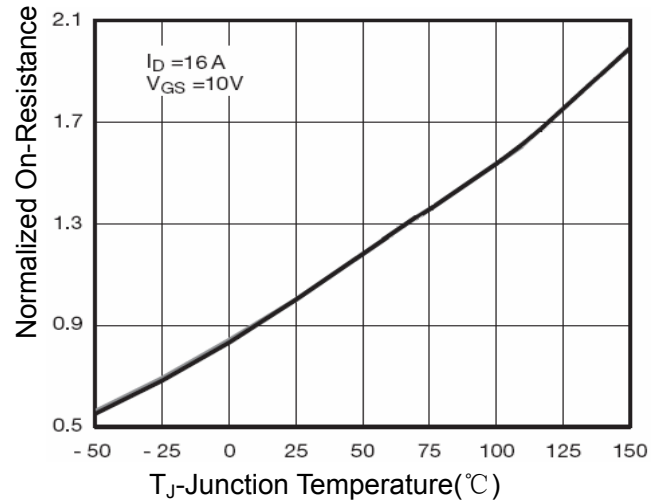


Figure 4 Rdson-Junction Temperature

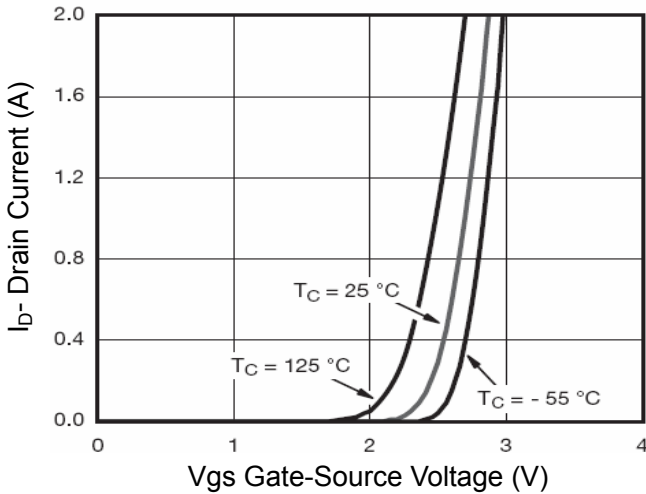


Figure 2 Transfer Characteristics

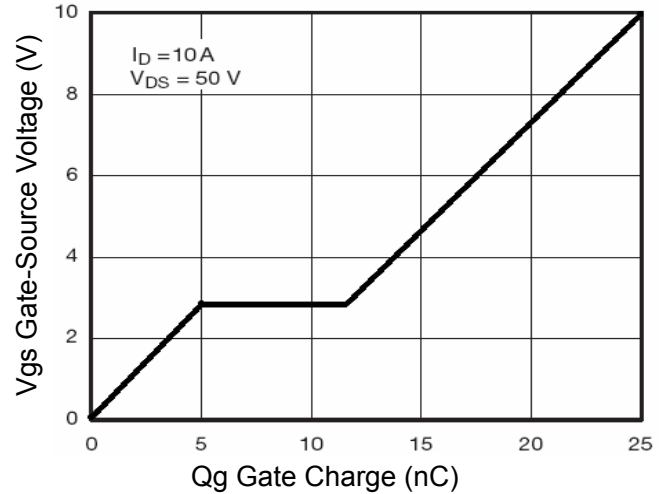


Figure 5 Gate Charge

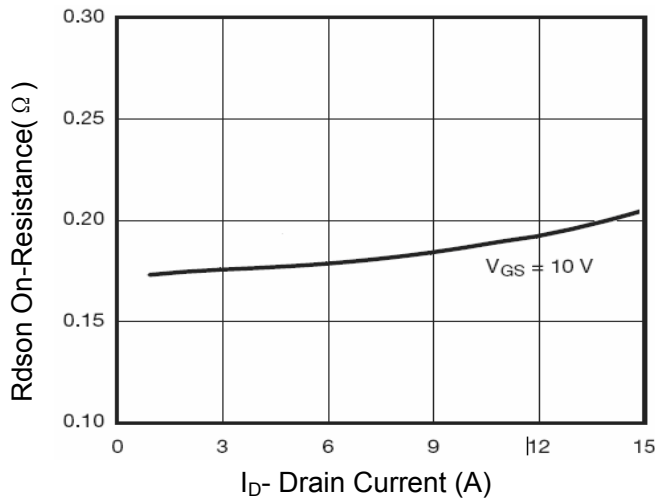


Figure 3 Rdson- Drain Current

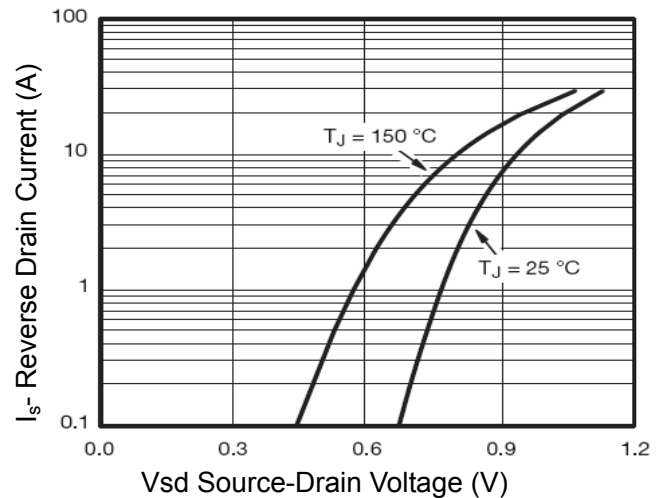


Figure 6 Source- Drain Diode Forward



Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.