Features

- AEC-Q101 Qualified
- Split Gate Trench MOSFET Technology
- Low $R_{DS(on)}$ & FOM
- Excellent Stability and Uniformity
- Extremely Low Switching Loss
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. “Green” Device
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Moisture Senstivity Level 1

P-CHANNEL MOSFET

Maximum Ratings

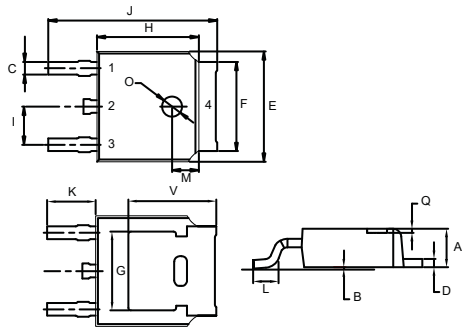
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient
- Thermal Resistance: 1.7°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	-18	A
	T_C=100°C		-12	A
Pulsed Drain Current [1]		I_{DM}	-72	A
Avalanche Energy [2]		E_{AS}	36	mJ
Total Power Dissipation		P_D	72	W

Note:

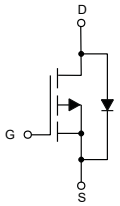
1. Pulse Test: Pulse Width≤300μs,Duty Cycle ≤2%.
2. T_J=25°C, V_{DD}=-50V, V_G=-10V, L=0.5mH, R_g=25Ω.

DPAK

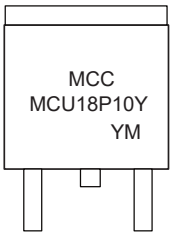


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

Internal Structure and Marking Code



1.GATE
2.DRAIN
3.SOURCE
4.DRAIN



Y is the year
M is the month

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-100			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V, V_{GS}=0V			-1	μA
		V_{DS}=-100V, V_{GS}=0V, T_J=150°C			-100	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1	-1.8	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-10A		83	110	mΩ
		V_{GS}=-4.5V, I_D=-5A		93	120	mΩ
Diode Characteristics						
Continuous Body Diode Current	I_S				-18	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-10A			-1.3	V
Reverse Recovery Time	t_{rr}	I_S=-5A,di/dt=100A/μs		70		ns
Reverse Recovery Charge	Q_{rr}			140		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-50V,V_{GS}=0V,f=1MHz		1051		pF
Output Capacitance	C_{oss}			119		
Reverse Transfer Capacitance	C_{rss}			25		
Total Gate Charge	Q_g	V_{DS}=-50V,V_{GS}=-10V,I_D=-5A		20.1		nC
Gate-Source Charge	Q_{gs}			3.9		
Gate-Drain Charge	Q_{gd}			4.3		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-10V,V_{DD}=-50V,R_L=2.5Ω R_{GEN}=6Ω		10		ns
Turn-On Rise Time	t_r			30		
Turn-Off Delay Time	$t_{d(off)}$			77		
Turn-Off Fall Time	t_f			81		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

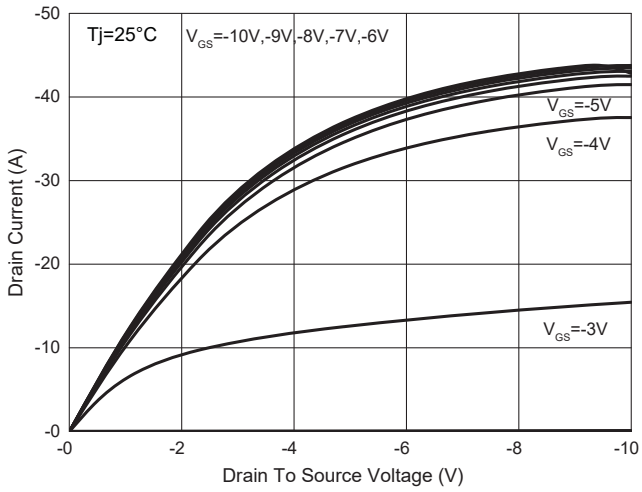


Fig. 2 - Transfer Characteristics

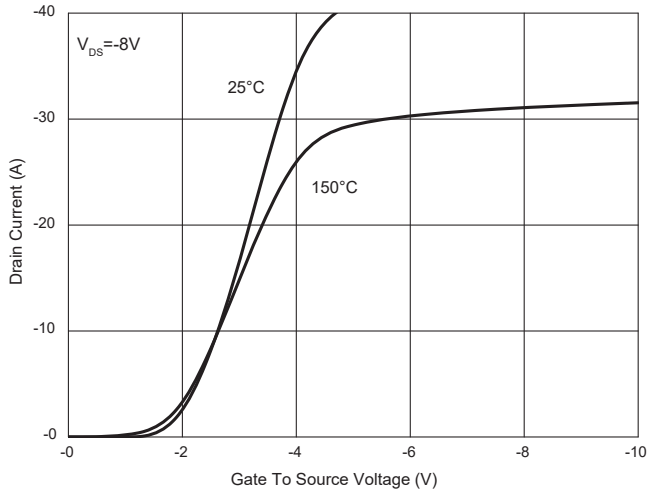


Fig. 3 - $R_{DS(ON)}$—V_{GS}

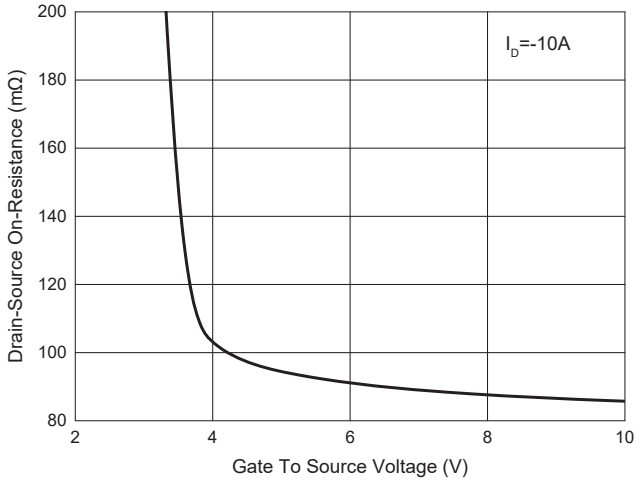


Fig. 4 - Normalized On Resistance Characteristics

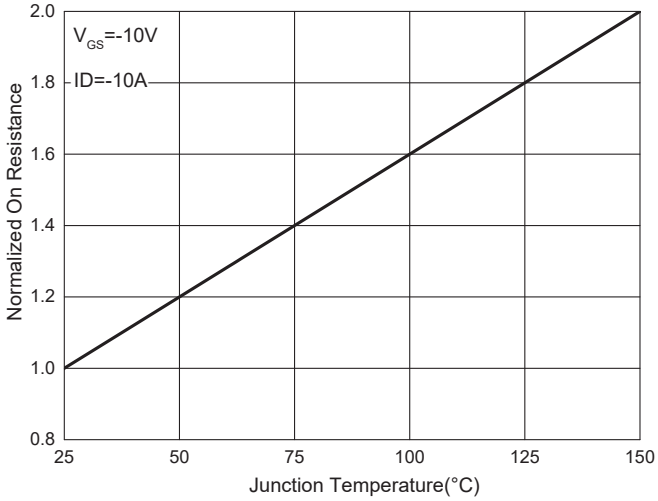


Fig. 5 - Capacitance Characteristics

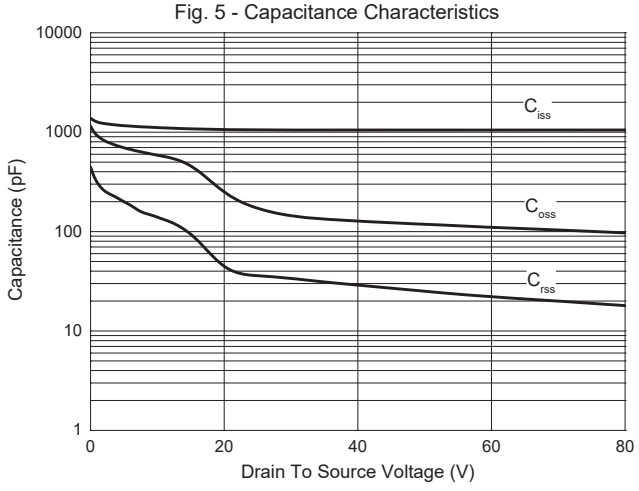
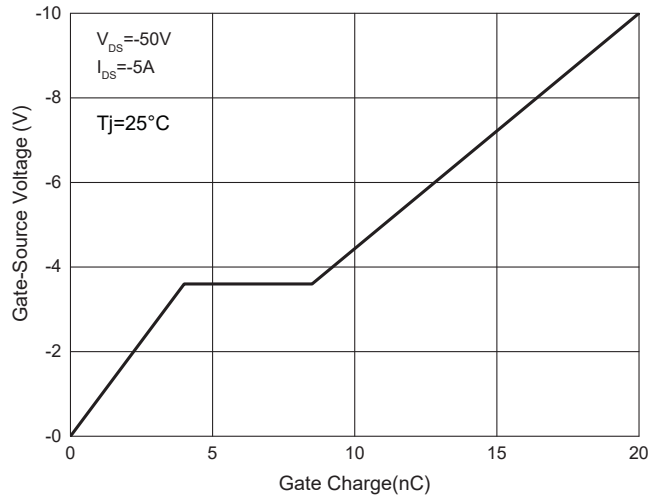


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - I_S—V_{SD}

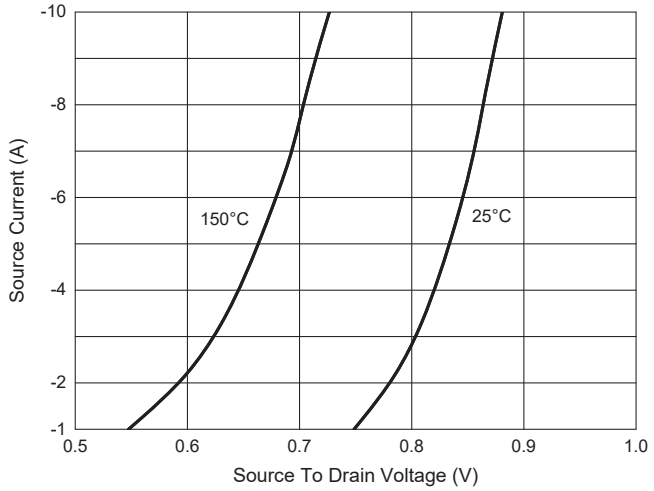


Fig. 8 - $R_{DS(ON)}$—I_D

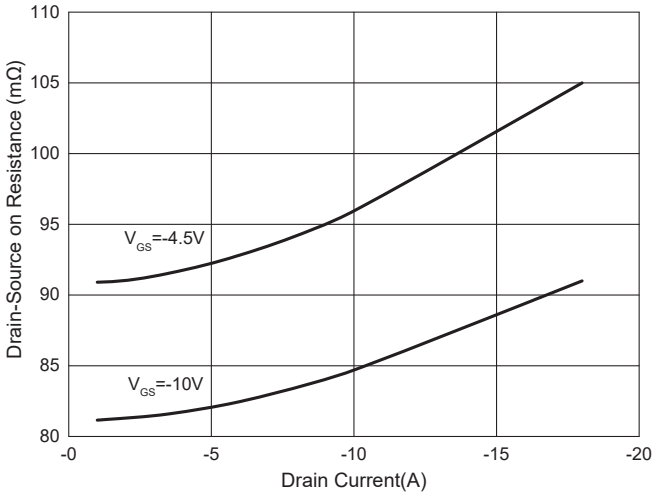


Fig. 9 - Safe Operation Area

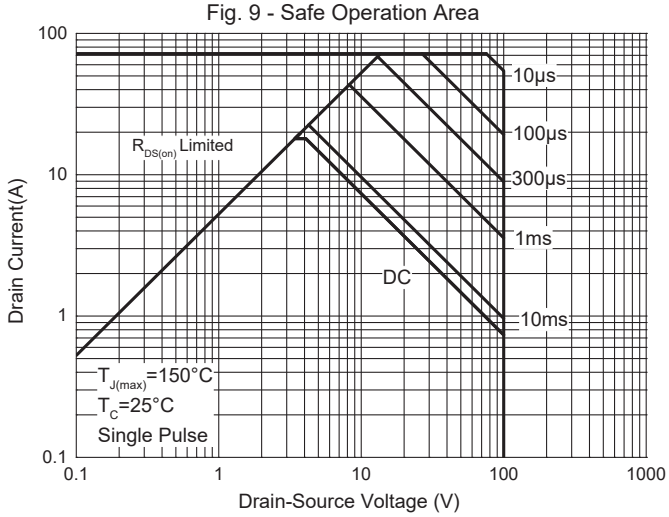
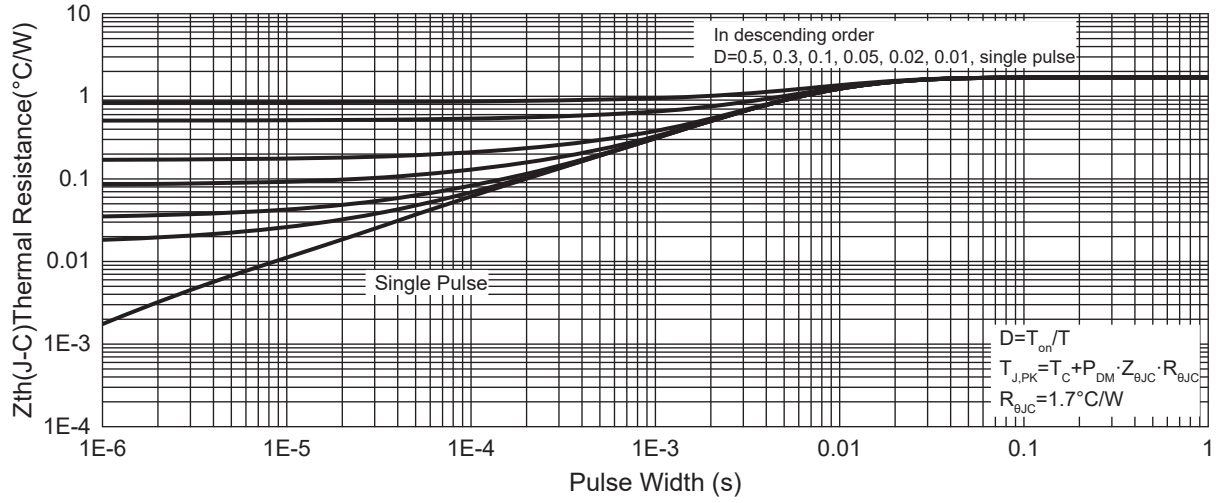


Fig. 10 - Maximum Transient Thermal Impedance



Ordering Information

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Commercial Components (MCC):

MCU18P10YHE3-TP