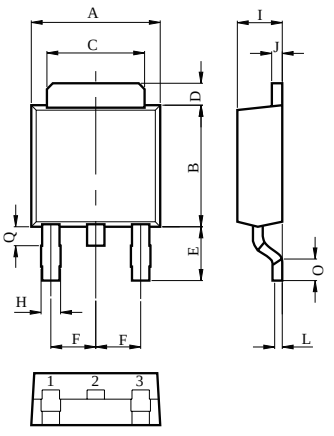
FTK18P10D -100V/-18A P-Channel Power MOSFET



DIM	MILLIMETERS
A	6 50 ± 0 2
B	5 60 ± 0 2
C	5 20 ± 0 2
D	1 50 ± 0 2
E	2 70 ± 0 2
F	2 30 ± 0 1
H	1 00 MAX
I	2 30 ± 0 2
J	0 5 ± 0 1
L	0 50 ± 0 10
O	1 6 ± 0 2
Q	0 95 MAX

1 GATE
2 DRAIN
3 SOURCE

D-PAK (TO-252)

DESCRIPTION

The FTK18P10D uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge.

This device is well suited for high current load applications.

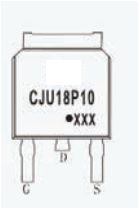
FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized Avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Excellent package for good heat dissipation

APPLICATIONS

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

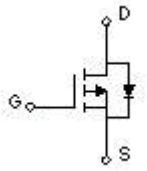
MARKING



CJU5518P10= Part No.

XXX=Date Code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Para retem	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	-18	A
Pulsed Drain Current	I_{DM}	-72	
Single Pulsed Avalanche Energy (note1)	E_{AS}	220	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 ~+150	
Maximum lead temperature for soldering purposes , 1/8”from case for 5 seconds	T_L	260	

Electrical characteristics (T_a=25℃ unless otherwise noted)

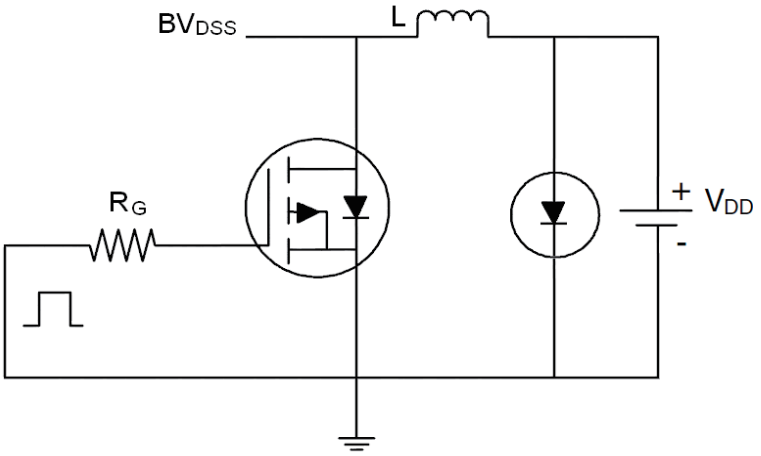
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-100V, V_{GS} =0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±20	μA
On characteristics (note2)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.9	-3	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-16A		85	100	mΩ
Forward transconductance	g_{FS}	V_{DS} =-50V, I_D =-10A	5			S
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	V_{DS} =-25V,V_{GS} =0V, f =1MHz		2100		pF
Output capacitance	C_{oss}			590		
Reverse transfer capacitance	C_{rss}			140		
Switching characteristics (note 3)						
Total gate charge	Q_g	V_{DS}=-80V, V_{GS}=-10V, I_D=-16A		61		nC
Gate-source charge	Q_{gs}			14		
Gate-drain charge	Q_{gd}			29		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-50V,V_{GS}=-10V, R_G=9.1Ω, I_D=-16A		16		ns
Turn-on rise time	t_r			73		
Turn-off delay time	$t_{d(off)}$			34		
Turn-off fall time	t_f			57		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note2)	V_{SD}	V_{GS} =0V, I_S=-16A			-1.2	V
Continuous drain-source diode forward current	I_S				-18	A
Pulsed drain-source diode forward current	I_{SM}				-72	A

Notes:

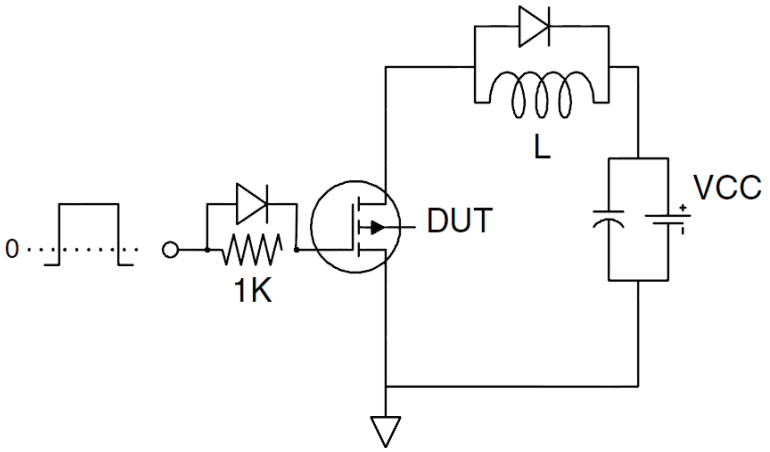
1. L=0.5mH,V_{DD}=-50V,V_G=-10V,R_G=25Ω,Starting T_J=25℃.
2. Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
3. Guaranteed by design, not subject to production.

Test Circuit

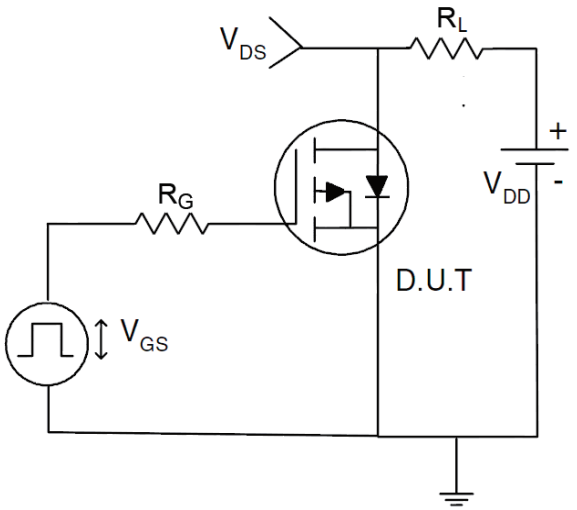
1) E_{AS} Test Circuit



2) Gate Charge Test Circuit

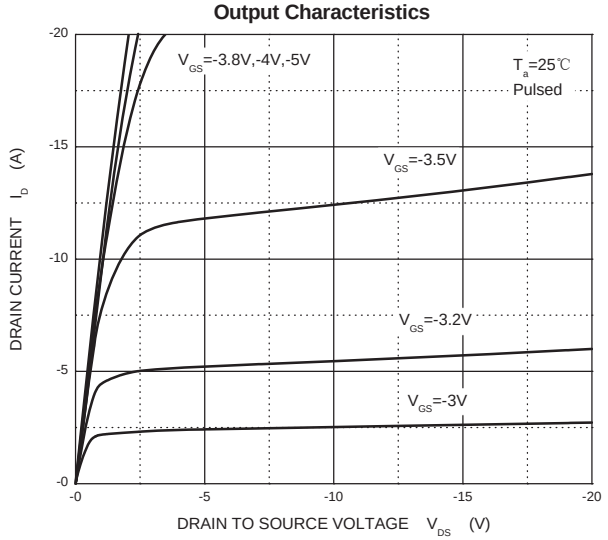


3) Switch Time Test Circuit

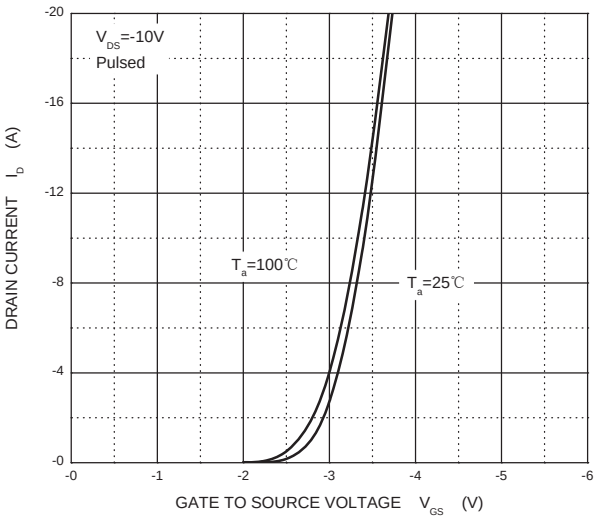


Typical Electrical and Thermal Characteristics (curves)

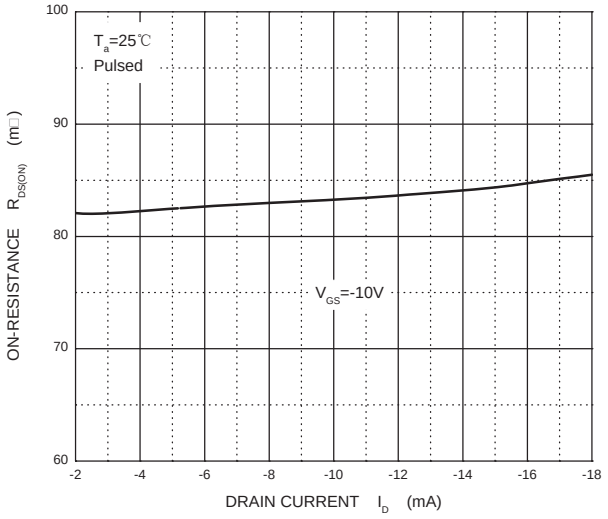
Output Characteristics



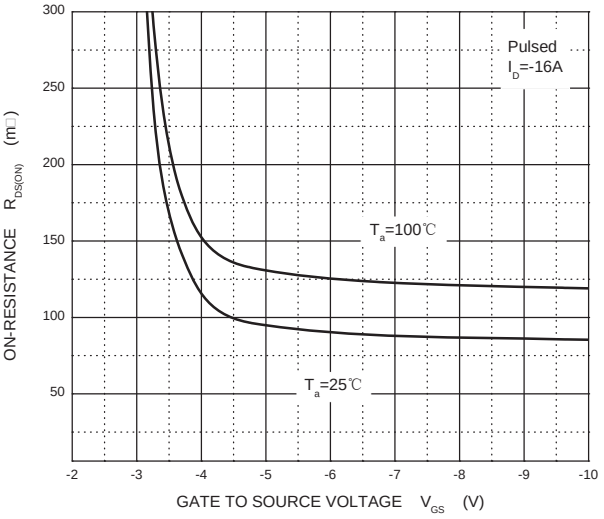
Transfer Characteristics



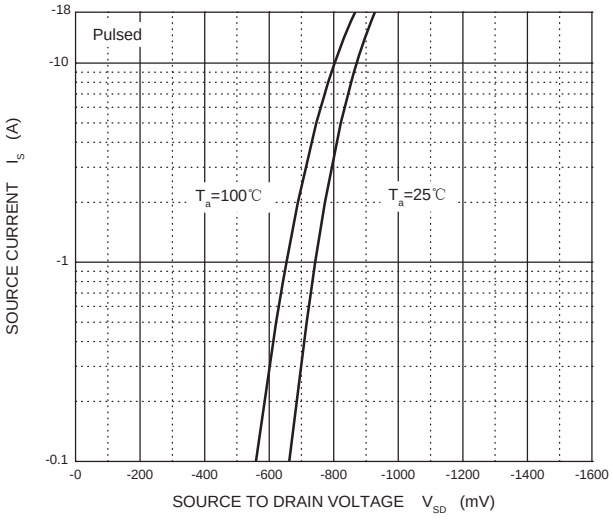
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}



Threshold Voltage